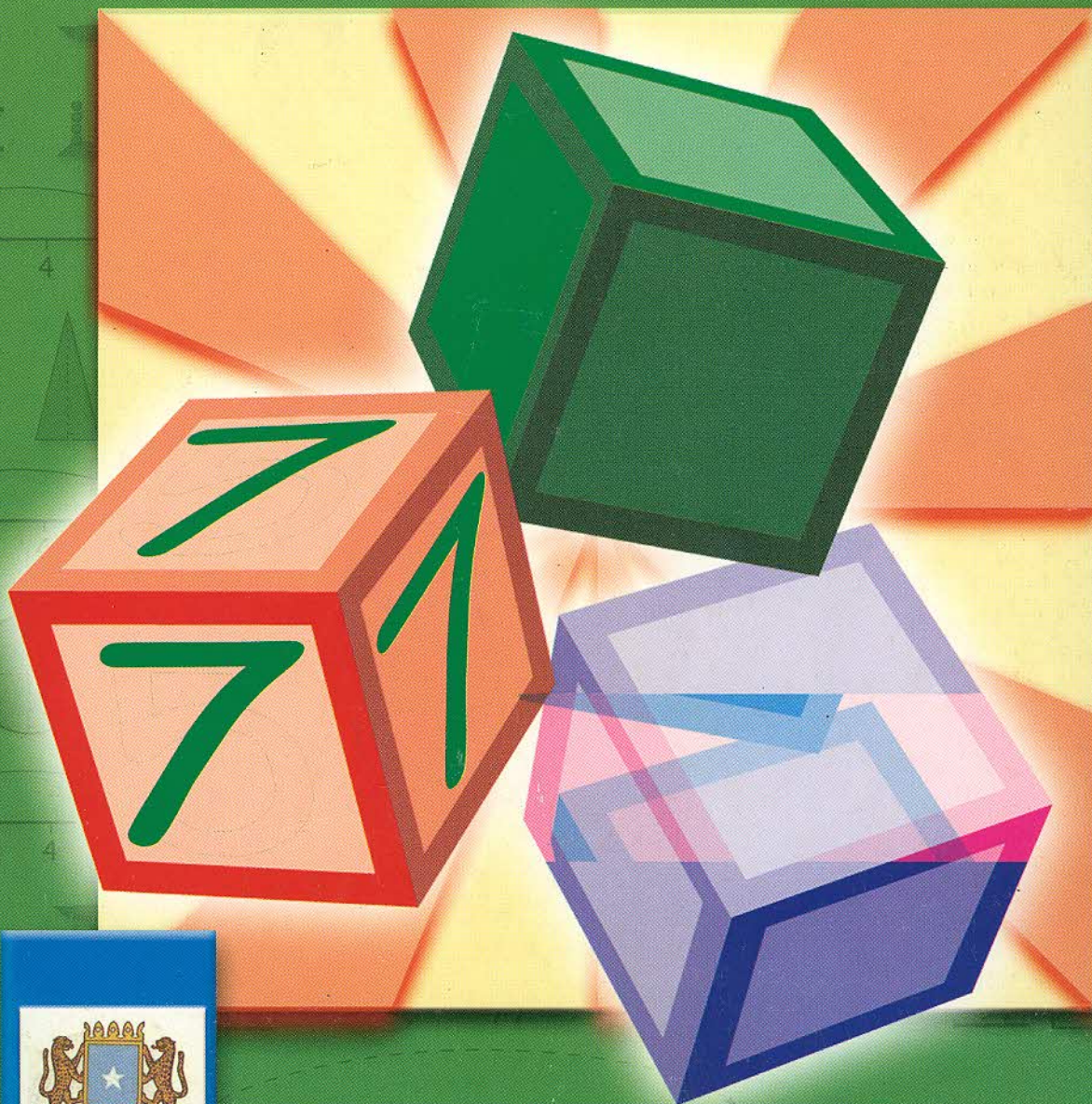


# XISAAB

# 7



*Wasaaradda Waxbarashada - Soomaaliya*

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# **XISAAB**

# **FASALKA 7AAD**

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*Wasaaradda Waxbarashada*

*UNESCO*

*Soomaaliya*  
*2005*

**Daabacaadda 1aad 2005**

*Waxa daabici kara cidda  
ay khuseyso oo keliya*

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Maxamed Cabduraxmaan Maxamed

*Waxa lagu daabacay  
Nayroobi, Keenya*

*Printed in Nairobi, Kenya*

## ARAR

Aniga oo ka wakiil ah UNESCO, waxa aan jeclahay in aan u mahadnaqo dhammaan dadkii ka qaybgalay horumarinta iyo soo saarista manhajka cusub, muqararrada iyo buugaagta loogu talagalay ardayda Soomaaliyeed ee ku jirta Fasallada Dugsiga Dhexe.

Marka ugu horreysa, waxa aan jeclahay in aan u mahadnaqo madaxda waxbarashada Soomaalida, qorayaasha buugaagta, madaxda qoreyaasha maaddooyinka, xubnaha guddiga hagidda, aqoonyahaannada, khubarada farsamada, dadkii garaacay, tarjumay, u sameeyey sawirrada iyo qaabeynta dadaalkii, hawl karnimadii iyo shaqadii hufneyd ee ay muujiyeen intii ay socotay horumarinta iyo soo saarista buugaagtan.

Mahad gaar ah waxa leh Waaxda Horumarinta Caalamiga (DFID) ee U.K oo kaalmadoodii deeqsinimada lahayd la'aanteed, aan la gaari kari lahayn fulinta hawshan adag. Mahad qaali ah waxaa leh Ergada Beesha Yurub kaalmadii joogtada ahayd ee ay ka geysteen hawlihii horumarinta buugaagta waxbarashada ee Soomaalida. Waxa kale oo xusid mudan Qaybta Guddiga Waxbarashada (ESC) ee SACB iyo guddi hawleedkii ka koobnaa dhawrkii xubnood ee ka midka ahaa guddiga waxbarashada (ESC) talooyinkii waxtarka lahaa ee ay bixiyeen si tayada buugaagta kor loogu qaado.

Waxaa aan jeclahay in aan u mahad celiyo shaqaalaha UNESCO PEER shaqadii qiimaha iyo wax ku oolka ahayd, taas oo ugu dambayntii dhalisay in buugaagtan loo soo saaro ardayda dugsiga dhexe waqti waxbarashada asaasiga ah ee dalka ay si xad dhaaf ah u kordhayso una hodmayso. Dhab ahaantii kani waa waqti farxad u ah dhammaan intii u hawlgashay si ardayda Soomaaliyeed loogu helo waxbarasho asaasi ah oo tayo leh - waa xuquuq asaasi ah oo ay leeyihiin dhammaan gabdhaha iyo wiilasha dunida iyada oo aan loo eegin meesha ay joogaan iyo cidda ay yihiin.

In kasta oo dadaal badan lagu bixiyey tayada tifaftiridda, oo nuqulka buugguna yahay mid ku jira tijaabo, waxa jiri kara khaladaad xagga higgaaadda, naxwaha iyo kuwo kaleba. Waxa aan soo dhoweyneynaa talooyinkiina si kor loogu qaado tayada nuqulka xiga oo la daabici doono ka dib marka la dhammaystiro qiimaynta nuqulkan tijaabada ku jira.

Buugaagtan waxa loogu talagalay in ay ka faa'ideystaan ardayda iyo barayaasha Soomaaliyeed. Waxa aan rajeynayaa in ay u adeegsan doonaan sida ugu habboon si ay u kobciyaan xirfadahooda barashada iyo baridda.



Mohamed Djelid  
Madaxa, UNESCO PEER

## PREFACE

On behalf of UNESCO, I would like to thank all those who provided their valuable assistance to the development and production of the new curriculum, syllabi and textbooks for the Somali pupils in the Upper Primary Grades.

First and foremost, I would like to thank the Somali education authorities, textbook writers, subject panel heads, steering committee members, educationists, technical resource persons, translators, graphics and layout artists for their commitment, enthusiasm and diligent work in the development and production of these books.

Special thanks are due to the Department for International Development (DFID) without whose generous funding we would not have achieved this ambitious undertaking. Heartfelt thanks are also due to the the European Commission for its sustained support in the new Somali textbook development programme. Under the auspices of the SACB Education Sectoral Committee (ESC) a taskforce comprising several ESC partners gave valuable feedback and useful advice on the quality of the textbooks for which we are grateful.

I would like also to thank the UNESCO staff for their conscientious and diligent work through an arduous process which has finally led to the provision of these good and contemporary pupil books at a time when primary education in the country is being rapidly expanded and enriched. This is indeed an exciting time for all of us who are committed to providing quality primary education to Somali learners - a fundamental right of all learners no matter where they are and who they are.

Although every effort has been made to ensure quality, this being a pilot edition, it is possible that some spelling, grammatical and other errors remain. I welcome your suggestions for improvement of the next edition, which will see the light of day after a systematic evaluation of this pilot edition has been completed.

These textbooks are primarily for Somali students and teachers. I hope that they will use these books effectively to improve their learning and teaching skills.



Mohamed Djelid  
OIC, UNESCO PEER

## MAHADNAQ

Soomaaliya waqtigan xaadirka ah waxa ay ka soo baxaysaa shan iyo toban sanadood oo ay ku jirtey degannaansho la'aan siyaadeed, waxaa ayna higsaneysaa mustaqbal leh nabad iyo barwaaqo. Waqtigani oo kale waxbarashada da' yarta koreysa uma laha muhiimad aad u weyn dowladda oo keliya ee waxa ay u leedahay dhammaan inta u hawlgasha.

Dagaalkii sokeeye ee ka dhacay dalka waxa uu waxyeello weyn oo aan hore loo arag u geystey dhammaan dhismayaashii dugsiyada, qalabkii waxbarashada iyo macallimiintaba. Waxa dadaal wax ku ool ah sameeyey bulshada iyo madaxda waxbarashada deegaannada si ay mar labaad u bilaabaan dugsiyada iyaga oo ka helaya kaalmo bulshada caalamka.

Haddaba waxa si weyn loogu baahday buugaag casri ah oo ku habboon ardayda Soomaaliyeed iyo macallimiintaba kuwaas oo ku saleysan manhajka qaranka. Sidaas daraadeed, ka dib markii la tashi ballaaran iyo wadashaqeyn lala sameeyey madaxda waxbarashada Soomaaliyeed, ayaa UNICEF iyo UNESCO iyaga oo ka helaya kaalmo hay'daha deeqda bixiya sida, EC, Danida, DfID, Dawladda Netherland, iyo kuwo kale waxa ay u hawlgaleen sidii buugaagta dugsiyada asaasiga ah (fasallada 1aad ilaa 8aad) loogu heli lahaa carruurta Soomaaliyeed.

Dawladdu waxa ay mahad gaar ah u celinaysaa intii ka qayb qaadatay diyaarinta buugaagtan cusub ee dugsiyada dhexe kuwaas oo ay ka mid yihiin Qoreyaasha, Madaxda maaddooyinka, Tifaftirayaasha, Farshaxannada, ka kala socday qaybaha kala duwan ee Soomaaliya. Sidaa oo kale waxa mahad leh lataliyeyaasha caalamiga ah iyo dadkii daabacay. Wada shaqaynta aqooyahannadan la'aanteed suuragal ma ahaan lahayn in carruurta soomaaliyeed loo helo buugaagtan tayadooda iyo heerkoodu sarreeyso.

Wasaaradda Waxbarashada waxa ay aad ugu faraxsan tahay in ay xiriir la yeelato mashruucan oo aan filaayo in uu dib u dhiska Soomaaliya ku soo kordhin doono nabad iyo barwaaqo.

Waxa aan ardayda iyo macallimiinta Soomaaliyeed u rajeynayaa in ay ka helaan barid iyo barasho wax ku ool ah inta ay buugaagtaan ku dhex adeegsanayaan fasalladooda.



Mudane Cali Cabdullaahi Cosoble  
Wasiirka Wasaaradda Waxbarashada

## ACKNOWLEDGEMENT

Somalia is currently emerging from fifteen years of political instability and is looking forward to a peaceful and prosperous future. At such a time, the education of the younger generation becomes an absolute priority not only for the Government but for all stakeholders.

In the years immediately following the civil war, the situation on the ground led not only to the destruction of school facilities and instructional materials but also to teacher attrition on a scale never witnessed before. Gradually, an effort was made by communities and local education authorities to start up the schools again with the assistance of the international community.

One major requirement was the need for up-to-date and relevant textbooks for the young Somali learners and their teachers based on a common national curriculum. To this end, after country-wide consultations and in close collaboration with Somali authorities, UNICEF and UNESCO supported the development of primary textbooks (Grade 1 to Grade 8) in all subjects with funding from several donor agencies, notably, the EC, Danida, DfID, the Government of Netherlands, etc.

The government would like to acknowledge and thank all those who took part in the development of the new Somalia upper primary school textbooks: writers, panel heads, subject specialists, editors, artists and graphic designers hailing from every part of Somalia as well as expatriate consultants and printers. Without the hard work and dedication of all these professionals, our children and their teachers would not be getting a standardized set of high quality textbooks.

The Ministry of Education is very happy to be associated with this project which I am sure will directly contribute to the building of a peaceful and prosperous Somalia.

I wish good luck and joyful teaching and learning to Somali teachers and students as they use these textbooks on a day-to-day basis in their classrooms.



Hon Ali A. Osoble  
Minister of Education

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# 1 TIROOYINKA IDIL



## Naqtiin

### Layli 1

- Xisaabi dhufsane yaraha ay wadaagaan (Dh.y.w) tirooyinkan:
 

b) 16 iyo 9	t) 120 iyo 150	j) 96 iyo 36	x) 224 iyo 180
-------------	----------------	--------------	----------------
- Qor dhammaan isirrada tiro kasta:
 

b) 12	t) 18	j) 27	x) 42
-------	-------	-------	-------
- Qor tiro kasta taranka isirradeeda mutuxan:
 

b) 128	t) 136	j) 196	x) 108
--------	--------	--------	--------
- Xisaabi xidid labajibaarka adiga oo adeegsanaya habka isirrada mutuxan:
 

b) 256	t) 576	j) 1024	x) 2025
--------	--------	---------	---------
- Xisaabi isir weynaha ay wadaagan (IWW) tirooyinkan:
 

b) 12 iyo 46	t) 1828 iyo 36	j) 36 iyo 60	x) 18 iyo 42
--------------	----------------	--------------	--------------
- Qor afarta tiro ee ku xigta susun kasta:
 

b) 3, 6, 12, _____, _____, _____, _____
t) 5, 10, 15, _____, _____, _____, _____
j) 1, 4, 9, 16, _____, _____, _____, _____
x) 5, 2, 5, 2 _____, _____, _____, _____
- Tiradee u qaybsami karta 8?
 

b) 432	t) 672	j) 785	x) 1 000
--------	--------	--------	----------
- U qor tirooyinkan erey ahaan:
 

b) 2 030 000	t) 3 700 100	j) 19 806 000	x) 8 607 452
--------------	--------------	---------------	--------------

9. Min guuri oo dhammaystir tusahan:

Tiro	Tirada oo ereyo ah
	Toddoba malyan laba boqol kun shan boqol afartan iyo shan
8 000 006	
	Shan malyan laba boqol oo kun iyo lix boqol
	Sagaashan iyo sagaal malyan siddeed kun laba boqol lixdan iyo shan
	Toban malyan tobbobo kun konton iyo shan

10. Min guuri oo dhammaystir tusahan. Safka hore adiga ayaa lagu sameeyay.

73 529 198	73 529 199	73 529 200
	21 792 418	
	12 951 900	
	2 373 286	
	99 999 999	

11. Min guuri oo ku buuxi  kasta adiga oo gelinaya  $>$ ,  $<$  ama  $=$ :

b) 27 834 913  27 834 914      t) 178 676 114  178 676 113

j) 18 104 128  18 175 128      x) 1 846 315  1 846 325-10

12. U duub 1 000 ugu dhaw:

b) 6 173      t) 1 829      j) 9 632      x) 2 168

13. Tiradee u qaybsami karta 11?

b) 462      t) 6 721      j) 795      x) 1 001

14. Xisaabi labajibbaarka tirooyinka soo socda:

b) 17      t) 21      j) 12      x) 15

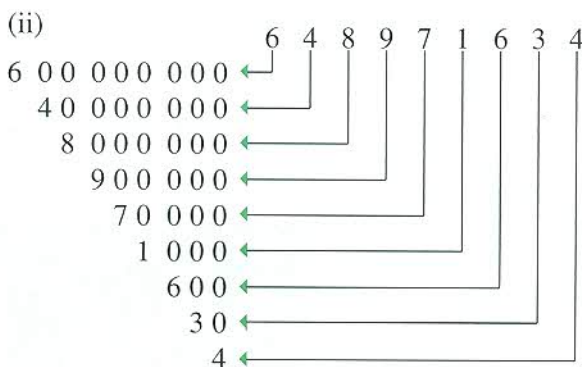
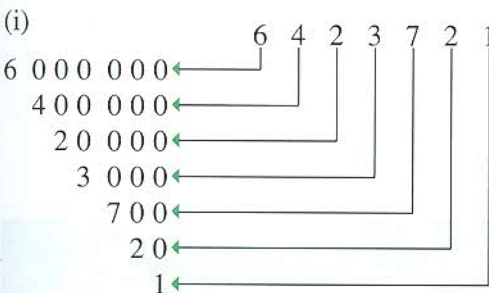
# Malaayiin

Tusahan waxa uu muujina qiime rugeedka tirooyin

	Malaayiin			kumaad			kowaad		
	Boqol malyanaad	Toban malyanaad	malyanaad	Boqol kumaad	Toban kumaad	kumaad	boqolaad	tobnaad	kowaad
1 000 000			1	0	0	0	0	0	0
10 000 000		1	0	0	0	0	0	0	0
100 000 000	1	0	0	0	0	0	0	0	0
9 046 125			9	0	4	6	1	2	5
12 709 451		1	2	7	0	9	4	5	1
260 503 400	2	6	0	5	0	3	4	0	0

God kasta ee tiro waxa uu leeyahay qiimo rugeed. Sida oo kale god kastaa waxa uu leeyahay qiime wadareed.

Tusaale ahaan:



Tirooyinka waxa loo qori karaa sansaan fidsan .

## Tusaalooyin:

$$\begin{aligned}
 \text{(i) } 572\ 816\ 134 &= (5 \times 100\ 000\ 000) + (7 \times 10\ 000\ 000) + (2 \times 1\ 000\ 000) \\
 &+ (8 \times 100\ 000) + (1 \times 10\ 000) + (6 \times 1\ 000) + (1 \times 100) \\
 &+ (3 \times 10) + (4 \times 1)
 \end{aligned}$$

$$\begin{aligned}
 \text{(ii) } 950\ 832\ 704 &= (9 \times 100\ 000\ 000) + (5 \times 10\ 000\ 000) + (0 \times 1\ 000\ 000) \\
 &+ (8 \times 100\ 000) + (3 \times 10\ 000) + (2 \times 1\ 000) + (7 \times 100) \\
 &+ (0 \times 10) + (4 \times 1)
 \end{aligned}$$

Tusaalaha(ii) Joog u taxyada malyanka iyo ka tobanaadka waxa ku jira 0.

## Layli 2

1. U qor qaab astiro ahaan :
  - b) Toban malyan, shan boqol kun iyo konton.
  - t) Toddobaatan iyo sagaal malyan iyo saddex boqol.
  - j) Shan iyo toban malyan toddobo boqol iyo shan kun iyo labaatan iyo shan.
  - x) Siddeed boqol iyo afartan milyan labo boqol iyo afar kun sagaal boqol iyo soddon.
2. U qor tirooyinkan erey ahaan.
  - b) 30 787 003      t) 85 373 000      j) 101 101 101      x) 3 912 853
3. U qor tirooyinka sansaanka fidinta
  - b) 698 000      t) 6 735 414      j) 11 690 027      x) 450 620
4. Sheeg qiime wadareedka godka hoosta ka xarriiqan:
  - b) 375 500 021      t) 21 808 309      j) b 255 260 800      x) 123 456 789
5. Habbee koox kasta ee tirooyinka soo socda ka mid ah adiga oo ka bilaabaya tirada ugu weyn ilaa midda ugu yar
  - b) 47286798      523051622      85116041      126990258
  - t) 4315623      18351462      9760264      11879649
  - j) 94678850      901413226      99854277      94786985
  - x) 702410526      193738565      320100201      98675092
  - kh) 7240195      21062514      962570      150628070
6. Min guuri oo dhammeystir tusahan sida tusaalaha oo kale:

		Boqol malyanaad	Toban malyanaad	malyanaad	Boqol kumaad	Toban kumaad	kumaad	boqolaad	tobnaad	kowaad
	Tusaale 2 561 780			2	5	6	1	7	8	0
b)		6	9	1	6	0	8	2	4	0
t)	500 700 100									
j)		8	4	0	0	3	0	0	2	0
x)	20 547 607									
kh)	100 000 000									

# Labajibbaar

Labajibbaarka tiro waa taranka tirada oo laba jeer la iskudhuftay.

Labajibbaarka tirada  $n$  waa  $n \times n$  ama  $n^2$ .

## Tusaalooyin

(i) Xisaabi Labajibbaarka 5

Labajibbaarka tiro waxa aan ku heli karnaa iyada oo tirada lagu dhufto nafteda.

$$5^2 = 5 \times 5 = 25 \text{ Sida awgeed Labajibbaarka } 5 = 5^2 = 25$$

(ii) Xisaabi Labajibbaarka 7

$$7^2 = 7 \times 7 = 49$$

(iii) Xisaabi Labajibbaarka 223

$$\begin{array}{r} 223 \\ \times 223 \\ \hline 669 \\ 4460 \\ 44600 \\ \hline 49729 \end{array}$$

Sida awgeed  $223^2 = 49729$

## Layli 3

1. Xisaabi Labajibbaarrada:

- |          |         |           |        |
|----------|---------|-----------|--------|
| b) 21    | t) 35   | j) 75     | x) 93  |
| kh) 102  | d) 215  | r) 312    | s) 500 |
| sh) 1000 | dh) 110 | c) 42     | g) 50  |
| f) 260   | q) 173  | k) 90 000 |        |

2. Tax labjibbaarrada u dhexeeya:

- |             |               |                |                |
|-------------|---------------|----------------|----------------|
| b) 5 iyo 39 | t) 51 iyo 101 | j) 102 iyo 151 | x) 153 iyo 255 |
|-------------|---------------|----------------|----------------|

3. Xisaabi

- |             |            |            |           |
|-------------|------------|------------|-----------|
| b) $9^2$    | t) $15^2$  | j) $102^2$ | x) $45^2$ |
| kh) $220^2$ | d) $10^2$  | r) $1^2$   | s) $13^2$ |
| sh) $211^2$ | dh) $85^2$ |            |           |

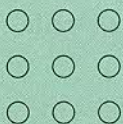


# Xidid labajibbaar

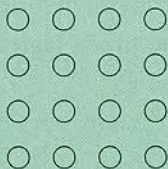
Tirooyinka qaarkood waxa loo tixi karaa qaab teed labajibbaarane oo dhibco ah. Waxaana lagu magacaabaa tirooyin labajibbaaran ama labajibbaar dhammeystiran.

## Tusaalooyin

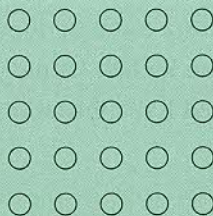
(i)



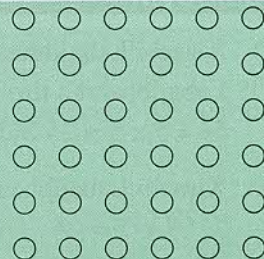
9



16

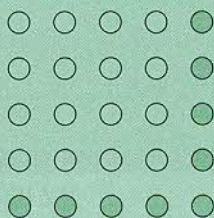


25

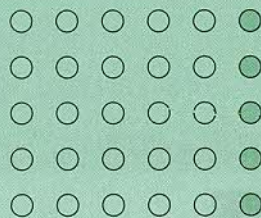


36

Dhererka hal dhinac labajibbaarane 25 dhibcood ah waa 5. 5 waa xidid labajibbaarka 25.



xidid labajibbaarka 25 waa 5



xidid labajibbaarka 36 waa 6

(ii) Gobol labajibbaarane oo leh dhinac 6sm ah waxa uu yeelanayaa bed  $36 \text{ sm}^2$

$$\text{Bed} = 6 \times 6 = 6^2 = 36 \text{ sm}^2$$

Dhinaca gobol labajibbaarane ah waxa loo xisaabin karaa iyada oo la helo xidid labajibbaarka bedka gobolka.

Haddii bedka gobol labajibbaarane yahay  $36 \text{ sm}^2$ , dhererka dhinaciisa waa xidid labajibbaarka 36.

Dhererka dhinaca = 6 sm waayo  $6 \times 6 = 6^2 = 36$ , 6 waa xidid labajibbaarka 36.

Summadda  $\sqrt{\quad}$  waxa loo adeegsadaa in lagu muujiyo "xidid labajibbaarka"  $\sqrt{36} = 6$

(iii) Raadi xidid labajibbaarka 9

$$9 = 3 \times 3$$

$$9 = 3^2$$

$$\text{Sida awgeed } \sqrt{9} = 3$$

Si aan u helno xidid labajibbaarka tiro, waxa aan adeegsan karnaa habka isirrada mutuxan.

(iv) Xisaabi xidid labajibbaarka  $\sqrt{144}$  adiga oo adeegsanaya habka isiraynta.

Isirrada mutuxan ee 144 waa  $2 \times 2 \times 2 \times 2 \times 3 \times 3$

iyada oo la isku lammaaninayo tirooyinka isku midka ah waxa aan helaynaa:

$$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 2^2 \times 2^2 \times 3^2$$

$$\sqrt{144} = \sqrt{2^2 \times 2^2 \times 3^2} = 2 \times 2 \times 3 = 12$$

2	144
2	72
2	36
2	18
3	9
3	3
	1

(v) Xisaabi  $\sqrt{441}$  adiga oo adeegsanaya habka isiraynta.

$$441 = 3 \times 3 \times 7 \times 7 = \sqrt{3^2 \times 7^2} = 3 \times 7 = 21$$

3	441
3	147
7	49
7	7
	1

(iv) Xisaabi  $\sqrt{1296}$  adiga oo adeegsanaya habka isiraynta

$$1296 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3$$

$$\sqrt{1296} = \sqrt{2^2 \times 2^2 \times 3^2 \times 3^2}$$

$$= 2 \times 2 \times 3 \times 3$$

$$= 36$$

2	1296
2	648
2	324
2	162
3	81
3	27
3	9
3	3
	1

### Layli 4

1) Xisaabi xidid labajibbaarka tirooyinka soo socda:

- b) 121      t) 361      j) 400      x) 196      kh) 169

2. Xisaabi qiimaha waxa soo socda:

- b)  $\sqrt{36}$       t)  $\sqrt{64}$       j)  $\sqrt{81}$       x)  $\sqrt{49}$       kh)  $\sqrt{361}$

3. Bedka gobol dhul waa  $529 \text{ m}^2$ . Xisaabi dhererka hal dhinac.

4. Bedka beer waa  $800 \text{ m}^2$ . Waxa loo soo iibiyay waayar dhererkiisu yahay 120m si loogu sameeyo deyr. Waayirka ma ku filan yahay deyrka.

### Saddexjibbaar

$$2 \times 2 \times 2 = 8 \quad \text{iyo} \quad 2 \times 2 \times 2 = 2^3 \quad 2^3 \text{ waxa loo akhriya labo ku jibbaaran 3}$$

**Saddexjibbaarka tiro waa tranka tirada oo saddex mar la isku dhuftay.**

(i) Xisaabi saddexjibbaarka tirooyinkan soo socda:

- b) 5      t) 1      j) 0      x) 7

$$\begin{aligned} \text{b) } 5^3 &= 5 \times 5 \times 5 \\ &= 25 \times 5 \\ &= 125 \end{aligned} \qquad \begin{aligned} \text{t) } 1^3 &= 1 \times 1 \times 1 \\ &= 1 \end{aligned}$$

$$\begin{aligned} \text{j) } 0^3 &= 0 \times 0 \times 0 \\ &= 0 \end{aligned} \qquad \begin{aligned} \text{x) } 7^3 &= 7 \times 7 \times 7 \\ &= 49 \times 7 \\ &= 343 \end{aligned}$$

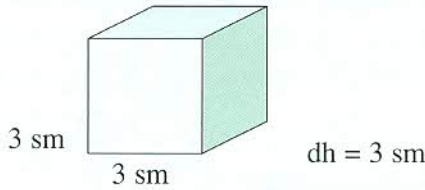
(ii) Raadi faraaq u dhexeeya  $9^3$  iyo  $8^3$ :

$$9^3 = 9 \times 9 \times 9 = 729$$

$$8^3 = 8 \times 8 \times 8 = 512$$

$$\text{Sida awgeed } 9^3 - 8^3 = 729 - 512 = 217$$

Jaantuskan waxa uu muujinaya saddexjibbaarane leh dhinac 3sm ah



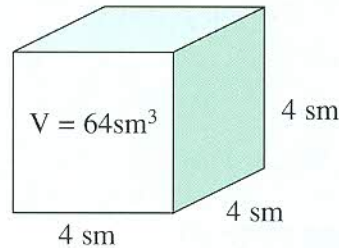
$$\begin{aligned} M &= dh \times dh \times dh \\ &= dh^3 \\ &= 3^3 = 3 \times 3 \times 3 \\ &= 27 \text{ sm}^3 \end{aligned}$$

Ogow: waxa jira 27 saddexjibbaaranayaal oo midkiiba cabbirkiisu yahay 1 sm x 1 sm x 1 sm

(iii) Mugga saddexjibbaaranaha hoos ku muujisan waa  ${}^3\sqrt{64} \text{ sm}^3$ .

$$\begin{aligned} V &= L \times L \times L \\ &= L^3 \end{aligned}$$

Haddaba  $L = {}^3\sqrt{64} = 4 \text{ sm}$



(iv) Xisaabi xididsaddexjibbaarka:

b) 125      t) 216

b)  $125 = 5 \times 5 \times 5$

${}^3\sqrt{125} = 5$

t)  $216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3 = 2^3 \times 3^3$

${}^3\sqrt{216} = 2 \times 3$

= 6

5	125
5	25
5	5
1	

2	216
2	108
2	54
3	27
3	9
3	3
1	

### Layli 5

1. Xisaabi saddexjibbaarka tirooyinka soo socda:

b) 5      t) 9      j) 10      x) 6      kh) 8

2. Xisaabi faraqa u dhexeeya 11 saddexjibbaaran iyo 11 labajibbaaran.

3. Xisaabi faraqa u dhexeeya saddexjibbaarrada lammaane kasta ee soo socda:

b) 15, 12      t) 11, 10      j) 17, 15      x) 11, 9

4. Raadi mugga sanduuqa cabbirkiisu yahay 17 sm iyo 17 sm iyo 17 sm.

5. Xisaabi xidid saddexjibbaarka tirooyinka soo socda:

b) 64      t) 216      j) 343      x) 8      kh) 27

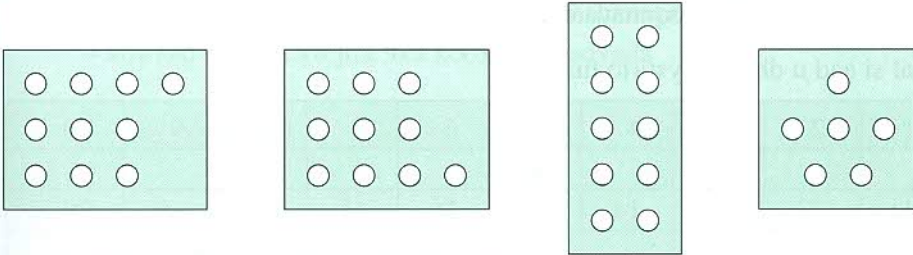
6. Taangi biyo oo saddexjibbaarane ah ayaa muggiisu yahay  $3375 \text{ sm}^3$ . Waa maxay addimada taangiga

7. Warsame ayaa isticmaalay sanduuq saddexjibbaarane ah oo cabbirka dhinacyadiisu yihiin 15 sm si uu ugu raseeyo kartoono caleen shaah ah. Muxuu ahaa mugga sanduuqa?

# Salalka tiro

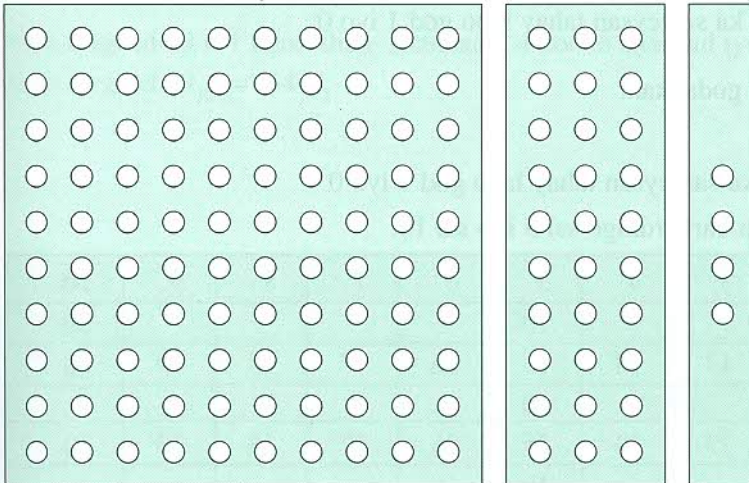
## Sal 10

36 Dhibcod waxa loo kooxayn karaa tobnaadyo iyo kowaadyo



Tirada dhibcaha =  $(3 \times 10) + (6 \times 1) = 36$  sal 10

Dhibcaha tiradoodu badan yihiin waxa loo kooxayn karaa toban-tobnaad, tobnaad iyo kowaad. Marka waxa aan helaynaa:



- Hal koox toban tobnaad  
 $1 \times (10 \times 10)$
  - Saddex koox oo min toban ah  
 $(3 \times 10)$
  - Afar kowaad  
 $4 \times 1$
- $1 \times (10 \times 10) + 3 \times (10) + 4 \times 1 = 100 + 30 + 4 = 134$  sal 10

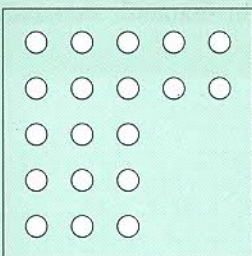
## Sal 5

Salalka kale waxa loo adeegsan karaa in wax lagu tiriyo. Marka aan tirino oo aan uga shaqayno salalka kale, Salka waxa aan u muujinaynaa hoos qormo ahaan.

Tusaale ahaan  $(34)_5$ . Tiradan waxa loo akhriyaa saddex-afar sal shan. Ku shaqaynta sal shan micsnaheedu waa u tirinta shan- shanaadyo, shanaadyo iyo kowaadyo.

### Tusaalooyin:

(i) Dhibcahan waxa loo kooxeynayaa shanaadyo.



Waxa halkan ku yaal 19 dhibcod. U kooxeeya shanaadyo Immisa kowaad ayaa haraa ah?

Tirada kooxaha shanaadyada	Kowaadka haraaga ah
3	4

Waxa halka ku yaal 34 dhibcood sal shan ah .

U tirinta dhibcaha sal 10, waxa ay noqonayaan  $19_{10}$ . Haddaba  $19_{10} = 34_5$

Adeegso tiriyayaal si aad u dhammeystirto tusahan

Sal 10	1	2	3	4	5	6	7	8	9	10
Sal 5					10					
Sal 10	11	12	13	14	15	16	17	18	19	20
Sal 5									34	

Sal 10 waxa aan adeegsanaynaa godadkan:

0, 1, 2, 3, 4, 5, 6, 7, 8, 9

Hal koox oo toban ah waxa ay ka sameysan tahay labo god 1 iyo 0

Sal 5 waxa aan adeegsanaynaa godadkan:

0, 1, 2, 3, 4

Hal koox oo shan ah waxa ay ka sameysan tahay labo god 1 iyo 0

Marka sidaa lagu wado si la isu barbardhigo sal 5 iyo sal 10:

Sal 10	1	2	3	4	5	6	7	8	9	10
Sal 5					10					20
Sal 10	11	12	13	14	15	16	17	18	19	20
Sal 5					30					
Sal 10	21	22	23	24	25	26	27	28	29	30
Sal 5					100					

Ogow in  $24_{10} = 44_5$

$25_{10}$  waa 1 shan shanaad, o shanaad iyo 0 kowaad =  $100_5$

(ii) U rog 58 sal 5.

58 waxa ku jira 2 koox shan-shanaad,  
hal koox shan ah iyo 3 kowaad.

|||| | 2 Shan-shanaad  
 |||| | 1 shanaad  
 || 3 Kowaadyo

Sida awgeed  $(58)_{10} = (213)_5$

**Tiro si loogu rogo sal 5 waxa aan raadinaynaa immisa koox oo shan-shanaad, shanaad iyo kowaadyo ayaa ku jira.**

(iii) U rog 14 sal shan

2 kooxo shanaad  
 $5 \overline{) 14}$   
 10  
 ---  
 4

Haddaba 14 sal toban waxa ay u dhigantaa  $(24)_5$   
 taas oo ah; 2 koox shanaad iyo 4 kowaadyo.

(iv) U rog 49 sal 5

$$\begin{array}{r} 9 \\ 5 \overline{) 49} \end{array} \quad \text{waxa ku jira 9 koox shanaad iyo 4 kowaad.}$$

$\frac{45}{4}$  kowaad      Haddaba, Immisa koox shan-shanaad iyo immisa koox oo shanaad ah ayaa ku jira 9ka koox shanaadyada

$$\begin{array}{r} 1 \text{ shan- shannaad} \\ 5 \overline{) 9} \\ \underline{5} \\ 4 \text{ shanaad} \end{array}$$

waxa jira 1 koox shan- shanaad iyo 4 koox shanaad.

Sida awgeed  $49 = 1$  koox shan- shannaad, 4 kooxo shanaad iyo 4 kowaad.

Sida awgeed  $49_{10} = (144)_5$

## 2 URUR

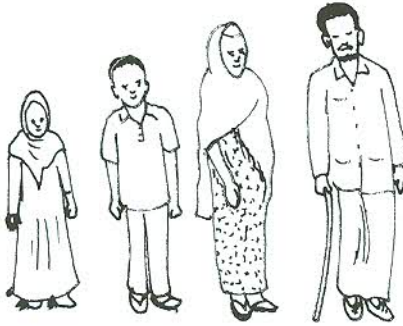
### Waa maxay urur?

Marka aan sifeynayno kooxo walxo, dad, xayawaan, waxa aan isticmaalnaa ereyo sida xirmo, raxan, xayn, Guntin, koox, kadin, raso, guuto iwm.



Ereyadan dhammaantood waxa ay sifeynayan walxo la isku uruuriyay. Xisaabta waxa ay Adeegsataa ereyga urur si uu ugu taagnaado walxo la isku uruuriyay.

**Urur waa walxo laysku uruuriyay. Walxaha isku ururka ah waxa lagu magacaabi karaa xubno ama kutirsanayaal.**



Sawirkan waxa uu muujinaya xubnaha qoyska Jaamac .

Isku jirkooda waxa ay sameynayaan urur. Xubin walba ee ururkan waxa la yidhaahdaa kutirsane. Kutirsanayaasha ururkan waa Jaamac, Saynab, Aadan iyo Faaduma.

Ardayda fasalkaagu waa urur. Arday walba oo fasalkaaga ka mid ahi waa kutirsane ama xubin ka mid ah ururka.

Maalmaha toddobaadka waa urur oo kutirsanayaasheeda ama xubniheedu yuhiin Sabti, Axad, Isniin, Talaado, Arbaca, Khamiis iyo Jimce. Kutirsanayaasha erayga Dugsi waa d,u,g,s,i.

**Walax kasta ee walxaha ka sameysma urur waxa lagu magacaaba kutirsanayaal.**

Summada kutirsane waa (€). (€) micnaheedu waa ma aha kutirsane.

*Tusaalooyin:*

- (i) Jimce € Ururka maalmaha toddobaadka.
- (ii) Axad € ururka bilaha sanadka.

## Layli 1

1. Qor kutirsanayaasha urur kasta ee soo socda.
  - b) Ururka tirooyinka idil ee ka yar toban .
  - t) Ururka tirooyinka kisiga ee u dhexeeya 2 iyo 10.
  - j) Ururka xarfaha ereyga Xuseen.
  - x) Ururka bilaha sanadka .
  - kh) Ururka wadamada Bariga Afrika.
  - d) Ururka maalmaha toddobaadka.
  - r) Ururka xilliyada sanadka.
  - s) Ururka wadamada Jaamacadda carabta.
  - sh) Ururka salaadaha maalinta.
  - dh) Ururka wadamada Geeska Afrika.

## Sifaynta urur

Waxa jira labo dariiqo oo loo sifeeyo urur.

## B. Habka taxidda

Waa taxidda dhammaan kutirsanayaasha ururka iyada oo loo dhexaysiinayo kutirsanayaasha hakatyo. Kutirsanayaasha waxa lagu oodayaa bilo, { }.

- Ogow:
- Muhiim ma aha horsanaanta sida loo taxay ku tirsanayaasha.
  - Marka la taxayo kutirsane urur lama soo celceliyo taas oo ah lama qoro kutirsanaha hal mar ka badan.
  - Si magac loogu bixiyo urur, waxa aan adeegsanaynaa Xaraf weyn.

## Tusaalooyin:

- (i) Qor ururada soo socda adiga oo adeegsanaya habka taxidda isla markaana magac u bixi urur walba.
- (b) Webiyada mara dhulka soomaalida      (t) Shaqallada xarfaha af soomaaliga
- (b) Webiyada mara dhulka soomaalidu      (t) Shaqallada xarfaha af soomaaliga
- degto  $A = \{\text{Shabbelle, Jubba}\}$        $M = \{a, e, i, o, u, aa, ee, ii, oo, uu\}$

## T. Habka sifaynta

U qeexidda astaamaha ururka erey ahaan, ka dibna ku ood bilo.

## Tusaalooyin:

- (ii) Qor ururada soo socda adiga oo sifeynaya kutirsanayaashooda.
- (b)  $W = \{\text{Sabt, Axad, Isniin, Talaado, Arbaco, Khamiis, Jimco}\}$
- (t)  $R = \{1, 3, 5, 7, 9\}$
- (j)  $M = \{a, e, i, o, u, aa, ee, ii, oo, uu\}$



- (b)  $W = \{\text{Maalmaha toddobaadka}\}$   
 (t)  $R = \{\text{Tirooyinka kisiga ee ka yar 10}\}$   
 (j)  $M = \{\text{Shaqallada xarfaha af soomaaliga}\}$

## Layli 2

1. U qor ururada soo socda habka taxidda oo magac u bixi urur kasta.
  - b) Ururka xarfaha erayga " saynis".
  - t) Ururka tirooyinka mutuxan ee ka yar 19.
  - j) Ururka dhufsanayaasha 2 ee ka yar 18.
  - x) Ururka wadamada bariga Afrika.
  - kh) Ururka gododka tirada 3003.
  - d) Ururka gododka tirada 671239.
  - r) Ururka magacyada farahaaga.
  - s) Ururka degmooyinka gobollada dalka.
  - sh) Ururka tirooyinka idil ee u dhexeeya 5 iyo 12,
  - dh) Ururka xarfaha ereyga "Soomaali".
2. Qor ururada soo socda adiga oo sifaynaaya kutirsanayaashooda.
  - b)  $B = \{2, 4, 6, 8, 10, 12, 14\}$
  - t)  $L = \{3, 6, 9, 12, 15, 18, 21\}$
  - j)  $R = \{\text{Shabelle, Jubbaa}\}$
  - x)  $H = \{a, e, i, o, u\}$
  - kh)  $A = \{\text{Somaaliya, Itoobiya, Jabuuti, Suudaan, Eritareeya}\}$
  - d)  $M = \{\text{Garowe, Burco, Baydhaba, Muqdisho}\}$
  - r)  $Q = \{2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24\}$

## Urur maran

Macallinka cayaaraha ayaa soo galay qolka fasalka 7 oo ardayda oo idil u saaray garoonka cayaaraha. In yar ka dib , baraha waxa uu arday weydiistay in uu soo hubiyo haddii uu jiro qof lagaga tagay fasalka. Ardaygii ayaa dib ugu soo noqday macallinkii waxa uuna u sheegay in uusan jirin qof lagaga tagay fasalka.

Ururka ardayda isla waqtigaas fasalka ku jirta ma laha kutirsane. Sida oo kale ardayda joogooda ka badan yahay 3 m,ma laha kutirsane ama xubin.

Labadan urur waa " Urur maran ".

**Ururka aan lahayn xubno ama kutirsanayaal waxa la yiraahdaa Urur maran summadda urur maran waa  $\emptyset$  ama  $\{ \}$ .**

## Layli 3

1. Kee urur maran ah ururada soo socda? U qor jawaabta qaabka ah

$$X = \{ \} \text{ ama } Y \neq \{ \}.$$

a)  $A = \{ \text{Saddexagallada leh afar dhinac} \}$

b)  $R = \{ \text{Tirooyinka kisiga ee ka yar 1} \}$

c)  $C = \{ \text{Ardayda leh 6 lugood} \}$

d)  $M = \{ \text{Tirooyinka dhaban ee ka yar 10} \}$

e)  $F = \{ \text{Tirooyinka idil ee ka yar 0} \}$

f)  $H = \{ \text{Geed cambo ah oo ku yaal dayaxa} \}$

g)  $N = \{ \text{Ardayda joogoodu yahay 0.2 cm} \}$

h)  $G = \{ 0 \}$

i)  $Q = \{ 1, 2, 0 \}$

j)  $D = \{ \text{Tirooyinka idil ee u dhexaysa 7 iyo 8} \}$

k)  $E = \{ \triangle, \square, \circ, \diamond \}$

l)  $K = \{ \text{Buuraha ku yaal soomaaliya} \}$

## Urur kooban iyo urur aan koobnayn

Ururka  $E = \{ \text{Tirooyinka mutuxan ee ka yar 10} \}$  Waa la tixi karaa

$$\text{Ururka } E = \{ 2, 3, 5, 7 \}$$

Tirada xubnaha ama kutirsanayaasha waa xadidan yihiin

### Ururka kooban waxa uu leeyahay tiro xubno ama kutirsanayaal xadaysan

Ma qori kartaa kutirsanayaasha ururka tirooyinka idil adiga oo dhamman wada taxaya?

Ma aha wax suragal ah in la wada qoro. Si loo muujiyo ururradani, waxa la adeegsadaa dhibco u taagan in ay kutiirsanayaashu socdaan.

### Tusaalooyin:

(i) Qor tirooyinka tirsiiimo adiga oo taxaya kutirsanayaasheeda.

$$N = \{ 1, 2, 3, 4, 5, \dots \}$$

(ii) Qor ururka dhufsanayaasha 5 adeegso habka Taxidda.

$$F = \{ 0, 5, 10, 15, 20, \dots \}$$

Habkan loo qoray Ururada aan koobnayn ayaa sida oo kale waxa loo qori karaa ururrada kooban ee leh kutirsanayaal badan. Marka hore waxa la qorayaa kutirsanayaasha ururka iyo dhawr dhibcood ka dib waxa la qoraya kutirsanaha ugu dambeeya.

### Tusaalooyin:

(i) Qor ururka tirooyinka idil ee ka yar 1000.

$$W = \{ 0, 1, 2, 3, 4, \dots, 999 \}$$

(i) Tax ururka tirooyinka dhabanka ee ka yar 100.

$$E = \{ 2, 4, 6, 8, \dots, 98 \}$$

## Layli 4

1. Kala Sheeg ururada kooban iyo kuwa aan koobnayn.
  - b)  $B = \{1, 2, 3, 4, 5\}$
  - t)  $X =$  Ururka xarfaha erayga Soomaali.
  - j)  $W =$  Ururka isirrada mutuxan ee tirada 210.
  - x)  $M =$  Ururka ardayda ee Dugsigaaga.
  - Kh)  $T =$  Ururka dadweynaha geeska Afrika.
  - d)  $N =$  Ururka tagaasida waddanka Kenya.
  - r)  $H =$  Ururka Tirooyinka mutuxan ee u dhexeeya hal iyo hal malyuun.
  - s)  $Y =$  Ururka geedaha muuska ee ka baxa Afrika.
  - Sh)  $A =$  Ururka tirooyinka idil ee ka yar 1000.
  - Dh)  $C =$  Ururka dhufsanayaasha 5.
  - c)  $E =$  Ururka tirooyinka idil.
  - g)  $F =$  Ururka Jajabyada .
2. Ururadan soo socda kuwee ah ururo kooban kuweena aan koobnayn?
  - b) Ururka magaalo madaxda Afrikada bari.
  - t) Ururka dadweynaha geeska Afrika.
  - j) Ururka muslimiinta adduunka.
  - x) Ururka dhufsanayaasha 2.
  - kh) Ururka tirooyinka dhabanka ee u dhexeeya 2 iyo 300.
  - d) Ururka dadka dhulka Soomaalida ku nool
  - r) Ururka abyonayaasha.
  - s) Ururka ardayda ku jira dugsiga
  - sh) Ururka  $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$
  - dh) Ururka xarfaha af soomaaliga.
3. Qor 5 urur oo kooban iyo 5 urur oo aan koobnayn .
4. Qor mid kasta ee ururada soo socda adiga oo taxaya kutirsanayaasha .
  - a) Ururka dhufsanayaasha 7 .
  - b) Ururka tirooyinka mutuxan ee u dhexeeya 1 iyo 104.
  - c) Ururka tirooyinka u qaybsami kara 5.
  - d) Ururka tirooyinka dhabanka ee ka weyn 500.

## Ururro isle'eg

Ururka A waa Ururka xarfaha magaca "Axmed" oo ururka B-na waa ururka xarfaha magaca "xamed".

Waxa aan kutirsanayaasha A iyo B u qori karaa iyada oo la adeegsanayo habka taxidda sida soo socota:

$$A = \{a, x, m, e, d\} \quad B = \{x, a, m, e, d\}$$

Maxa aad ka ogaatay kutirsanayaasha ururadan.

$$A = \{a, x, m, e, d\} \quad B = \{x, a, m, e, d\}$$

Qorista tirada kutirsanayaasha ururka A iyo B

$$n(A) = 5 \text{ iyo } n(B) = 5$$

Tirada kutirsanayaasha A iyo B waa isle'eg yihiin waana isku mid. Kutirsane kasta ee A waa kutirsane B iyo lidkiisa.

### Tusaalooyin:

(i) Haddii X = ururka godadka tirada 75 227 oo Y = ururka godadka tirada 572. X iyo Y ma isle'eg yihiin?

$$X = \{7, 5, 2\}$$

$$Y = \{5, 7, 2\} \quad \text{Ogow: hal tiro oo urur lama soo celcelinayo}$$

$$n(X) = n(Y) = 3$$

Kutirsane kasta ee X waa kutirsane Y iyo lidkooda marka X = Y

(ii) Haddii M = {1, 2, 3} oo W = {3, 2}. M iyo W ma isle'eg yihiin?

$$n(M) = 3 \quad n(W) = 2$$

$$1 \in M \text{ haseyeeshee } 1 \notin W$$

Sida awgeed M iyo W waxa ay leeyihiin kutirsanayaal kala duwan. Haddaba  $M \neq W$

### Layli 5

1. Haddii N = {1, 3, 2, 5, 4} oo H = {1, 2, 3, 4, 5}

Ma isle'eg yihiin N iyo H? Sababee.

2. Haddii L = ururka godadka tirada 375 822 oo

$$F = \text{ururka godaka tirada } 753 \ 832$$

b) Qor L iyo F adiga oo adeegsanaya habka taxidda

t) L iyo F ma isle'eg yihiin? Sababee.

3. Min goori oo dhammeystir hawraarta adiga oo  gelinnaya = ama ≠

i) {2, 3}  {3, 2}

ii) {b}  {c}

iii) {a, b, c}  {a, b, c, d}

iv) {3, 2, 0, 1}  ururka godadka tirada 3201.

4. Min guuri oo dhammeystir kursanayaasha maqan si aad u qorto weedh run ah.
- b)  $\{3, 6, 9, 12\} = \{6, 9, \dots, 12\}$
- t)  $\{7, 11, 5, 9\} = \{11, \dots, 7, 9\}$
- j)  $\{4, \dots, 1\} = \{4, 1, a\}$
5. Haddii  $\{1, 2, m, 5\} = \{2, 4, 1, 5\}$  waa maxay qiimaha m?

## Ururro isu dhigma

Haddii  $A = \{a, b, c\}$  Markaa tirada kutirsanayaasha A waa  $n(A) = 3$  oo haddii  $B = \{1, 2, 3\}$  Markaa tirada kutirsanayaasha B waa 3 maxa yeelay  $n(B) = 3$ .

Sida awgeed  $n(A) = n(B) = 3$

Sida oo kale haddii  $M = \{1, 3, 5, 7\}$  Markaa tirada kutirsanayaasha M waa  $n(M) = 4$  oo haddii  $L = \{x, y, w\}$  Markaa tirada kutirsanayaasha L waa  $n(L) = 3$

Haddaba  $n(M) \neq n(L)$

Sida awgeed waxa aan oran karnaa: Ururka A waa u dhigma ururka B waxana loo qora  $A \equiv B$  oo M uma dhiganto L waxaana loo qora  $M \not\equiv L$

**Haddii labo urur ay leeyihiin kutirsanayaal isku tiro ah waxa aan oranaynaa labada urur waa isu dhigmaan. Waxa aan summad ahaan ereyga isu dhigma u adeegsanaynaa  $\equiv$  summadda  $\neq$  waxa ay summad u tahay “isuma dhimaan”.**

### Tusaalooyin:

- (i) Haddii  $X = \{2, 3, 5, 8\}$  oo Y ay tahay godadka tirooyinka 835. X iyo Y ma isu dhigmaan?

$$X = \{2, 3, 5, 8\} \text{ iyo } Y = \{8, 3, 5\}$$

$$n(X) = 4 \quad n(Y) = 3$$

$$\text{Sida awgeed } n(X) \neq n(Y) \quad X \neq Y \text{ iyo } X \not\equiv Y$$

- (ii) Ka soo qaad  $W = \{1, 3, 5, 7, 9, 8\}$  oo H ay tahay ururka godadka tirooyinka 38 1957. W iyo H ma isu dhigmaan?

$$n(W) = 6 \quad n(H) = 6$$

ururka W iyo ururka H waxa ay leeyihiin tiro kutirsanayaal oo isku mid ah.

Sida awgeed  $W = H$  oo  $W \equiv H$

*Ogow: Ururada isle'eg waa isu dhigmaan. Ururada isudhigma muhiim ma aha in ay isle'eg yihiin*

### Layli 6

1. b) Qor tirooyinka ururadan
- dhammaan isirada 4 (urur F)
  - Tirooyinka mutuxan ee le'eg ama ka yar 7 (urur T)
  - Dhammaan maalmaha toddobaadka (urur W)
  - Tirooyinka tirsiiimo ee ka yar 10 (urur C)
  - Dhinacyada saddexagal  $\triangle ABC$
- t) Ururadee isudhima ururada sare?

2. b) Qor kutirsanayaasha ururadan:

i) Ururka A = {isirada 10}

ii) Ururka B = {isirada 8}

iii) Ururka C = {Afarta hore ee tirooyinka mutuxan}

iv) Ururka D = Godadka 8214

t) Ururadee isudhima ururada sare?

j) Ururadee isle'eg ururada sare?

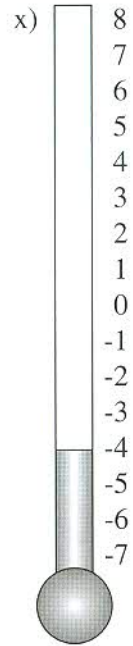
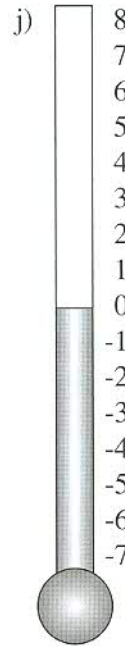
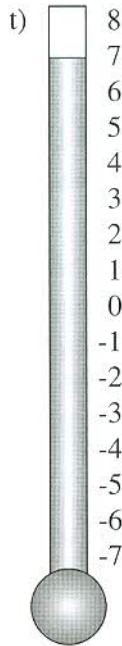
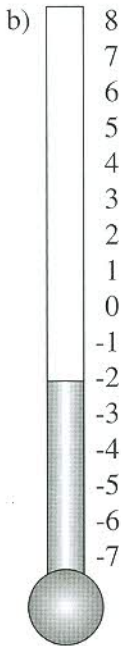
# 3 ABYOONAYAAL



## Naqtiin

### Layli 1

1. Akhri kulbeegayaashan oo u qor heerkul kasta laba siyaabood:



2. Raadi akhrinta cusub haddii heerkulku uu ka kaco:

b)  $+2^{\circ}\text{C}$  oo ay ku korodho 5

t)  $-7^{\circ}\text{C}$  oo ay ku korodho 12

j)  $+1^{\circ}\text{C}$  oo ay ku korodho 9

3. Raadi akhrinta cusub haddii heerkulku uu ka kaco:

b)  $+6^{\circ}\text{C}$  oo ay ka dhimanto  $5^{\circ}\text{C}$

t)  $-1^{\circ}\text{C}$  oo ay ka dhimanto  $12^{\circ}\text{C}$

j)  $+19^{\circ}\text{C}$  oo ay ka dhimanto  $9^{\circ}\text{C}$

4. Immisa digrii ayaa uu kor u kaca heerkulka marka uu ka kaco:

b)  $+4^{\circ}\text{C}$  ilaa  $+12^{\circ}\text{C}$ ?      t)  $-9^{\circ}\text{C}$  ilaa  $-2^{\circ}\text{C}$ ?      j)  $-4^{\circ}\text{C}$  ilaa  $0^{\circ}\text{C}$ ?

5. Immisa digrii ayaa uu hoos u dhaca heerkulka marka uu ka dhaco:

b)  $+12^{\circ}\text{C}$  ilaa  $+50^{\circ}\text{C}$ ?      t)  $+9^{\circ}\text{C}$  ilaa  $-50^{\circ}\text{C}$ ?      j)  $-2^{\circ}\text{C}$  ilaa  $-12^{\circ}\text{C}$ ?

6. Immisa digrii ayaa uu kor u kaca ama uu hoos u dhaca marka uu heerkulka iska beddelo min:

b)  $+1^{\circ}\text{C}$  ilaa  $+70^{\circ}\text{C}$ ?      t)  $+5^{\circ}\text{C}$  ilaa  $-5^{\circ}\text{C}$ ?      j)  $-12^{\circ}\text{C}$  ilaa  $+2^{\circ}\text{C}$ ?

Saadaalinta hawada waxa ay sheegtaa sida ay noqonayso xaaladda cimilo-gooreedka. Tusaale ahaan cabbirka heerkulka meelaha qaarkood waxa ay  $5^{\circ}$  ka hooseysa eber,  $10^{\circ}$  ka hooseysa eber ama  $14^{\circ}$  ka hooseysa eber iwm.

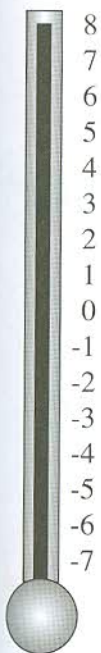
Sidee xisaab ahaan ugu tibaaxi karnaa xogtan soo socota ?

$5^{\circ}$  ka sarreysa eber waxa loo tibaaxi karaa +5, waxaana loo akhriyaa 5 togan.

$10^{\circ}$  ka sarreysa eber waxa loo tibaaxi karaa +10.

$5^{\circ}$  ka hooseysa eber waxa loo tibaaxi -5, waxaana loo akhriyaa 5 taban.

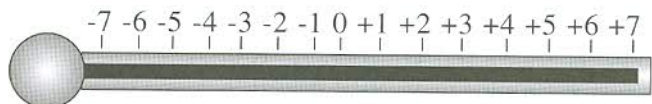
$10^{\circ}$  ka hooseysa eber waxa loo tibaaxi -5, waxaana loo akhriyaa 5 taban.



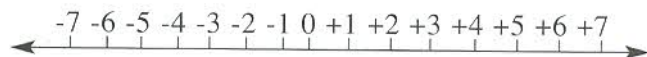
Kulbeegahan waxa uu leeyahay iskeel joog ah.  
 Abyoonayaasha togan waxa ay ku yaalaan korka  $0^{\circ}$ .  
 Abyoonayaasha taban waxa ay ku yaalaan hoosta  $0^{\circ}$ .

## Xarriiqda tirada

U dhig kulbeegaha jiif, waxa arki kartaa in iskeellada togan ay eber ka xigaan dhanka midigta halka kuwa taban ay eber ka xigaan bidixda.



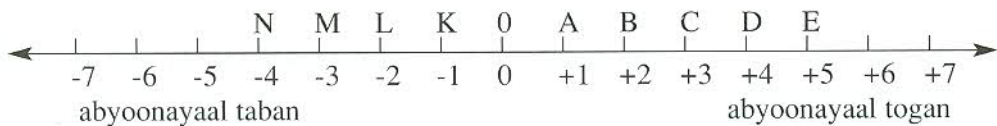
Guud ahaan, abyoonayaasha waxa aan ku soo bandhigi karnaa xirriiqda tirada korkeed sida hoos loogu muujiyay oo kale:



Abyoonayaasha togan waxa u taagnaan kara baraha A, B, C, D....waxa ayna midigta ka xigaan "0". OA, AB, BC, CD waa xarriijimo isle'eg.

Abyoonayaasha taban waxa u taagnaan kara baraha K, L, M, N.... waxa ayna bidixda ka xigaan "0". OK, KL, LM, MN waa xarriijimo isle'eg.

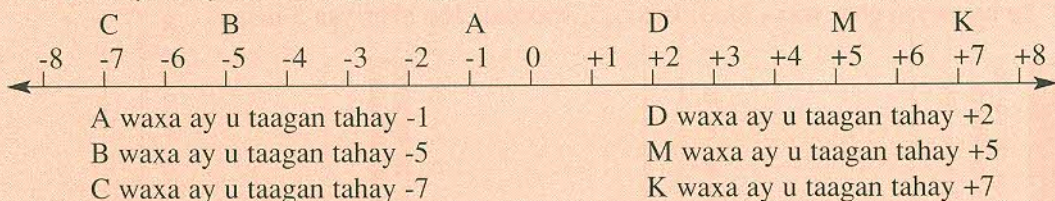




Xusuus: Waxa aad u qori kartaa tirooyinka togan iyaga wata summadda "+" iyo iyaga oo aan wadanin.

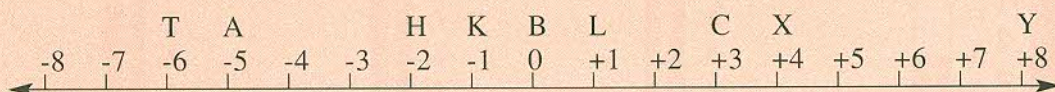
**Tusaalooyin:**

(i) Qor abyoonayaasha u taagan rugaha A, B, C, D, M, K.

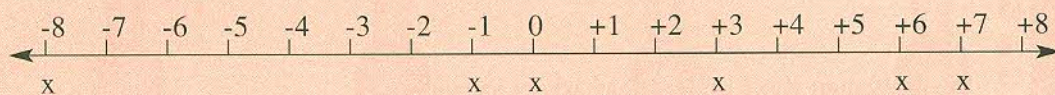


(ii) Sawir xarriiq tiro oo bar dhig abyoonayaasha soo socda adiga oo adeegsanaya xarfaha

- |        |        |        |
|--------|--------|--------|
| -5 ; A | 0 ; B  | -1 ; K |
| +4 ; X | -2 ; H | +1 ; L |
| +8 ; Y | +3 ; C | -6 ; T |

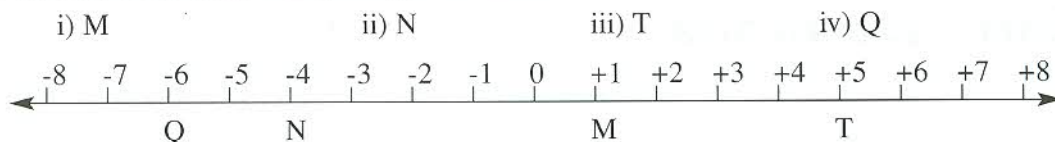


(iii) Ku muuji graaf abyoonayaashan xriiqda tiro 6, -9, +7, -1, 0, +3.



**Layli 2**

1. Qor abyoonayaasha u taagan rugta bar walba.



2. Sawir xarriiqooyin tiro si loogu muujiyo abyoonayaasha soo socda ka dibna tiro u samee:

- |                                  |                        |
|----------------------------------|------------------------|
| b) +6, -7, -3, +2, 0, -1, +4     | t) 6, -9, 7, -1, 0, 3, |
| j) -5, +1, 0, -8, -2, +3, +9, -7 |                        |

3. Qor ururka abyoonayaasha ee u dhexeeya:

- |            |            |            |
|------------|------------|------------|
| b) +9, +11 | t) -7, -9  | j) -2, 0   |
| x) +1, -1  | kh) +2, +4 | d) -10, -8 |
| r) -4, +6  | s) +2, +7  | sh) -7, -3 |

4. Qor abyoonaha u taagan x xaalad walba:





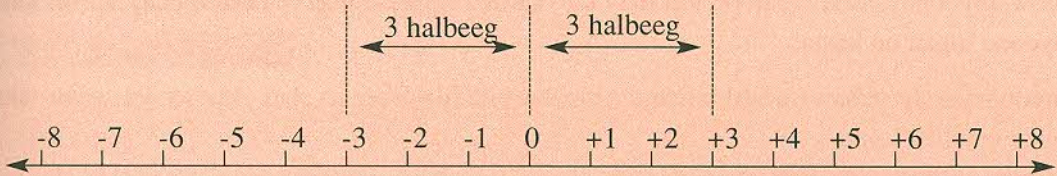
5. Laga bilaabo 0, abyoonah ee ayaa aad gaaraysa dhaqaaqyadan ka dib
- a) 7 tallaabo xagga bidix la raaciyay 5 tallaabo dhanka midig?
  - t) 6 tallaabo xagga midig la raaciyay 10 tallaabo dhanka bidix?
  - j) 9 tallaabo xagga bidix la raaciyay 13 tallaabo dhanka midig?
  - x) 5 tallaabo xagga bidix la raaciyay 2 tallaabo dhanka midig?
  - kh) 18 tallaabo xagga midig la raaciyay 3 tallaabo dhanka midig?
  - d) 2 tallaabo xagga bidix la raaciyay 5 tallaabo dhanka midig?
  - r) 7 tallaabo xagga bidix la raaciyay 3 tallaabo dhanka midig?
  - s) 2 tallaabo xagga midig la raaciyay 6 tallaabo dhanka bidix?

## Lidadka

Abyoone togan oo kasta waxa uu leeyahay abyoone taban oo lid u ah. Labo tiro oo in isle'eg u jira 0 ee xarriiqda tirada ku yaal, laakiin jihooyin kala duwan ku yaal ayaa ah

### Tusaalooyin:

(i) Magacow lidka 3



3 iyo  $-3$  labaduba waxa ay 0 ka fog yihiin 3 halbeeg.

Lidka 3 waa  $-3$

(ii) Raadi lidadka abyoonayaasha soo socda:  $-3, +10, -125$

Lidka  $-3$  waa  $+3$   
 $+10$  waa  $-10$   
 $-125$  waa  $+125$

Waa muuqata in lidka:

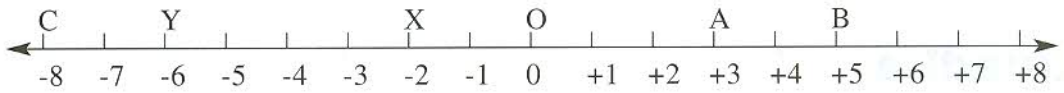
- eber waa eber
- abyoone togan waa abyoone taban oo in isle'eg u jira 0
- abyoone taban waa abyoone togan oo in isle'eg u jira 0

## Layli 3

- Qor lidka oo ah abyoone taban:  
b) +3      t) +19      j) +4      x) +10
- Qor lidka oo ah abyoone togan:  
b) -4      t) -17      j) -12      x) -2
- Qor lidka abyoonaaha:  
b) -7      t) +8      j) +50      x) -13      kh) +17  
d) -9      r) -18      s) +31

## Isbarbardhigidda iyo horsiimada abyoonaayaasha

Waxa aan adeegsanaynaa xarriiqda tirada si aan isu barbardhigno abyoonaayaasha.



Barta B waxa ay u taagan tahay +5, oo barta A waxa ay u taagan tahay +3. Barta B waxa ay ku taal midigta barta A.  $\therefore$  barta B ayaa ka fog barta A marka laga bilaabo O.

$\therefore +5$  waa ka weyn tahay +3  $\therefore +5 > +3$

Si la mid ah B waxa ay ku taal midigta.  $\therefore +5 > -2$

Y waxa ay ku taal bidixda X  $\therefore -6 < -2$

X waxa ay ku taal bidixda 0  $\therefore -2 < 0$

A waxa ay ku taal midigta 0  $\therefore +3 > 0$

Ogow abyoonaayaasha togan oo idil inay ku yaaliin midigta Eber.  $\therefore$  eber waa ay ka yar tahay abyoone togan oo kasta.

Abyoonaayaasha taban oo idil waxa ay xigaan bidixda Eber.  $\therefore$  eber waa ay ka weyn tahay abyoone taban kasta.

## Tusaalooyin:

- (i) Isbarbardhig +7 iyo -3

+7 waxa ay ku taal midigta -3 ee xarriiqda tirada.  $+7 > -3$ ,  $-3 < +7$

- (ii) U qor abyoonaayaashan soo socda horsanaan fanata.

-2, +3, 0, +5, -6, +9, -11

Waxa kuu muuqda in -11 ay ku taallo bidixda ka fog tirooyinka kale ee xarriiqda tirada ku yaal. Waxa ku xiga -6, ka dib -2, ka dib 0, ka dib +3, ka dib +5, ka dib +9. Sida awgeed tirooyin la isa siiyay, waxa si horsanaan fanata loogu qori kara sida soo socota: -11, -6, -2, 0, +3, +5, +9.

- (iii) U qor abyoonaayaashan soo socda horsanaan degta -18, -14, +15, +14, -8:

Tirooyin la isa siiyay waxa si horsanaan degta loogu qori karaa sidan: +15, +14, -8, -14, -18.

Layli 4

1. U qor abyoonaashan soo socda horsanaan fanata.
  - b) +1, +4, -9, +7, -8, +9, -1
  - t) -14, -19, +15, +27, -30, +36, -15
  - j) +38, -43, +29, -54, +60, +12, -45
2. U qor abyoonaashan soo socda horsanaan degta.
  - b) -4, +3, -8, +6, -11, +12, -9
  - t) +34, -36, +71, -48, -50, +12, +20
  - j) -1, +3, -2, -9, +4, -7, +10
3. Sawir xarriiq tiro min -8 ilaa +8
  - a) -7 Ku calaamadi A oo +7 ku calaamadi B
  - t) Immisa halbeeg ayaa ku jira min A ilaa B
  - j) -4 Ku calaamadi C oo +6 ku calaamadi D
  - x) Immisa halbeeg ayaa ku jira min C ilaa D

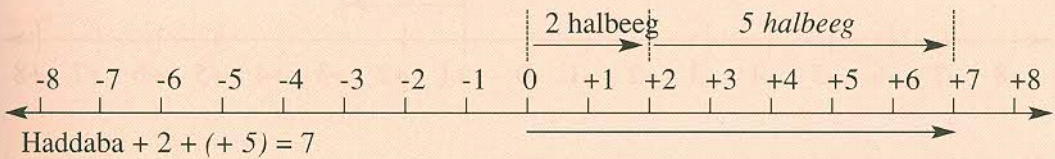
## Isugeynta abyoonaasha

Abyoonaasha waxa la isu geyn karaa iyada oo la adeegsanaayo xarriiqda tirada. Isugeynta abyoonaasha waxa loo arki karaa dhaqaaq isdaba yaal oo lagu sameeyo xarriiqda tirada korkeeda. Abyoonaasha togan waxa ay u taagan yihiin dhaqaaq dhanka midig. Abyoonaasha taban waxa ay u taagan yihiin dhaqaaq dhanka bidix. Fallaaro ayaa loo adeegsada in lagu muujiyo dhaqaaqyada.

**Tusaale :**

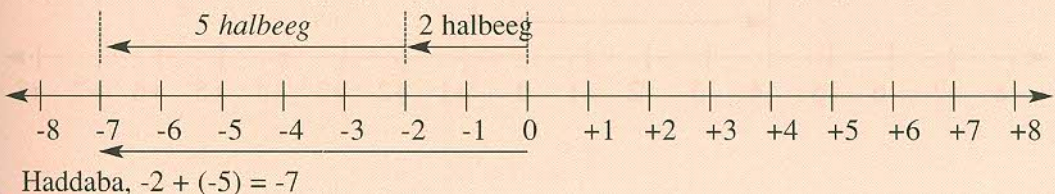
(i) Isugee 2 iyo 5

Ka bilaw O, qalin-qorigaaga u dhaqaaji 2 rug dhanka midig, ka dibna u dhaqaaji qalin qorigaaga 5 rug dhanka midig. Labada dhaqaaq isku jirkooda waxa ay noqonayaan 7 rug midigta unugga. Dhaqaaqyada waxa lagu muujin karaa fallaaro.



(ii) Isugee -2 iyo -5

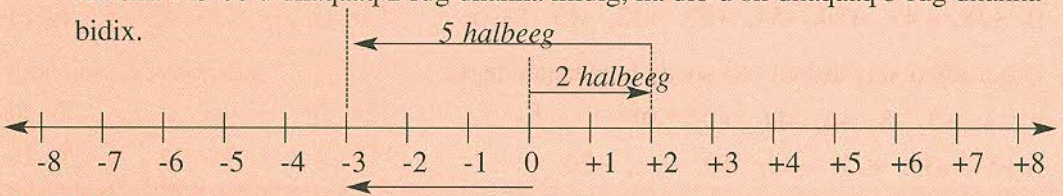
Ka bilaw O oo u dhaqaaq 2 rug dhanka bidix, ka dib u sii dhaqaaq 5 rug dhanka bidix



Isugeynta labo abyooone oo isku summad ah waa wadartooda oo isla summadii leh, t.a  
 $-8 + (-2) = -10$        $(+8) + (+2) = +10$

(ii) Isugee 2 iyo -5

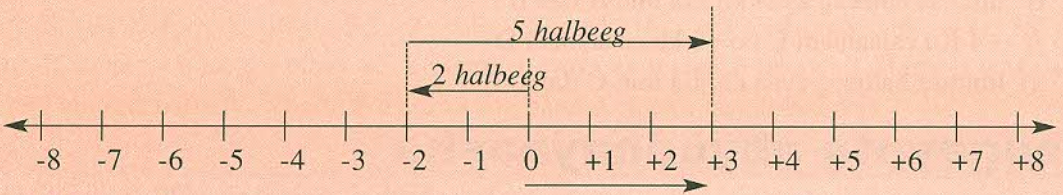
Ka bilaw 0 oo u dhaqaaq 2 rug dhanka midig, ka dib u sii dhaqaaq 5 rug dhanka bidix.



Haddaba,  $2 + (-5) = -3$

(iii) Isugee -2 iyo 5

Ka bilaw 0 oo u dhaqaaq 2 rug dhanka bidix ka dib u sii dhaqaaq 5 rug dhanka midig



Haddaba,  $-2 + 5 = 3$

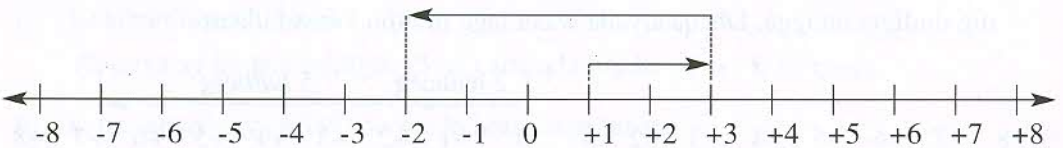
Isugeynta labo abyone oo kala summad ah waa faraqooda oo wata summada tirada weyn. t.a.

$$\begin{array}{ll} 12 + (-8) = +4 & -12 + 8 = -4 \\ 16 + (-11) = +5 & -16 + 11 = -5 \end{array}$$

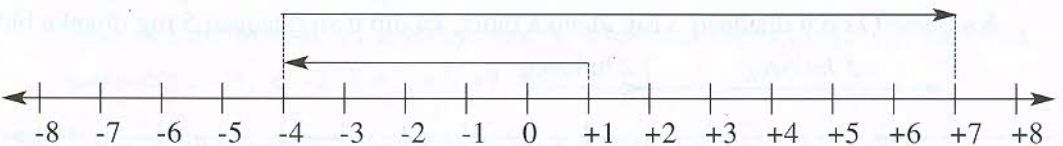
**Layli 5**

1. Qor weedha isugeynta u taagan dhaqaaqyadan xarriiqda tirada dusheeda.

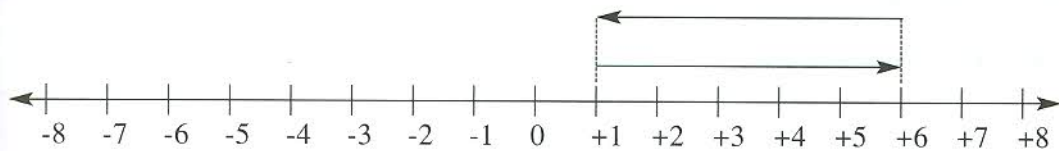
b)



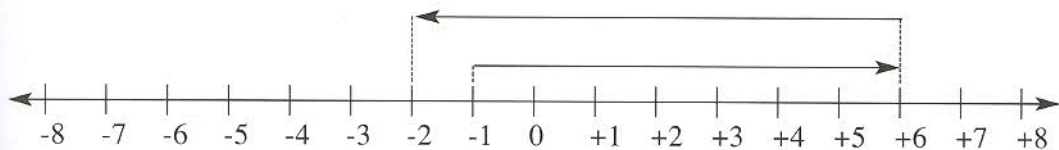
t)



j)



x)



# Kalagoynta abyooneyaasha

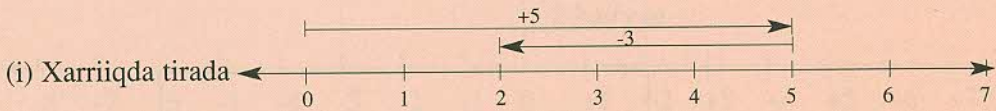
## Tusaalooyin:

Qiimee:

(i)  $+5 - (+3)$

(ii)  $+5 - (+3)$

(iii)  $+5 - (+3)$



Shan tallaabo ee midigta 0 waxa ay tilmaameysaa  $+5$

3 tallaabo ee bidixda 0 waxa ay timaameysaa ka jar ama ka saar 3

haddaba;  $+5 - (+3) = 5 - 3 = 2$

Sidaa oo kale  $(+5) - (+3) = (+5) + (-3) = 2$

Tani waxa ay muujinaysaa in ka jaridda tiro togan ay la mid tahay u geynta tiro taban

(ii) xarriiq tiro



2 tallaabo ee bidixda 0 waxa ay muujinaysaa  $-2$

4 tallaabo ee bidixda 0 waa ka saar ama ka goo 4

Haddaba;  $-2 - (+4) = -6$

Sidaa oo kale,  $-2 - (+4) = (-2) + (-4)$

$= -(2 + 4)$

$= -6$

(iii)  $(-2)$  oo laga jaray 5 waxa ay la mid tahay  $5 - (-2)$

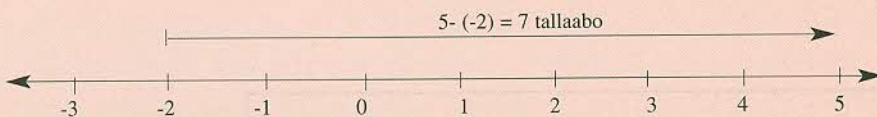
ka soo qaad in  $5 - (-2) = a$

markaa  $a + (-2) = 5$

Ku daridda tiro taban waxa ay la mid tahay ka jaridda tiro togan.

Sidaa daraadeed;  $a = 7$

Tirada tallaabooyinka u dhexeeya 5 iyo  $-2$  waa 7.



Ka jaridda tiro taban waxa ay la mid tahay ku daridda tiro togan.

Guud ahaan;

$$b) a - (+b) = a - b$$

$$t) a - (-b) = a + b$$

Tusaale ahaan haddii a ay tahay tabane sida (-5):

$$-5 - (-7) = -5 + 7 = 2$$

$$\text{Markaa, } -a - (-b) = -a + b = b - a$$

Soo koobid:

$$b) a - (+b) = a - b$$

$$t) a - (-b) = a + b$$

$$j) -a - (-b) = b - a$$

## Layli 6

1. Qiimee:

$$b) 5 - 8$$

$$t) 9 - 5$$

$$j) -2 - 6$$

$$x) -3 - 9$$

$$kh) 9 - (-4)$$

$$d) -2 - (-3)$$

$$r) -5 - (-6)$$

$$s) 0 - 4$$

$$sh) 0 - (-9)$$

## Iskudhufashada abyoonayaasha

Iskudhufashadu waa hab loo muujiyo isugeynta soo noqnoqota.

isugeynta soo noqnoqota:

$$2 + 2 + 2 + 2 + 2 + 2 = -12$$

$$\text{Iskudhufasho ahaan: } 6 \times 2 = 12$$

$$(-3) + (-3) + (-3) + (-3) = 12$$

$$\text{Iskudhufasho ahaan: } 4 \times (-3) = -12$$

Waxa aan halkan ku haysanaa:

- iskudhufashada laba tiro oo togan;
- Iskudhufashada tiro togan iyo tiro taban

Guud ahaan:

$$\bullet (+a) \times (+b) = \text{taran } +$$

$$\bullet (+a) \times (-b) = \text{taran } -$$

$$\bullet (-a) \times (+b) = \text{taran } -$$

$$\bullet (-a) \times (-b) = \text{taran } +$$

Taranka laba tiro oo taban waxa loo muujin karaa iyada oo la eegaayo qaabka dhuftaha iyo lagu dhuftaha, iyo tarankooda.

$$5x - 3 = -15$$

$$4x - 3 = -12$$

$$3x - 3 = -9$$

$$2x - 3 = -6$$

$$1x - 3 = -3$$

$$0x - 3 = 0$$

$$-1x - 3 = +3$$



$$-2x - 3 = +6$$

$$-3x - 3 = +9$$

$$-4x - 3 = +12$$

$$-5x - 3 = +15$$

Halkan  
iskudhufashadu  
waxa ay degtaa 1

lagu dhufaha waa  
isku mid.

Taranka waxa ku  
kordhaa 3

Guud ahaan:

- $(-a) \times (-b) = \text{taran} +$

Soo koobid:

- $+ \times + = +$
- $+ \times - = -$
- $- \times + = -$
- $- \times - = +$

Taranka abyooneyaasha leh summad isku mid ah waa togane.

Taranka abyooneyaasha leh summad kala duwan waa tabane.

## Layli 7

1. Qiimee:

b)  $5x - 2$

x)  $-2x - 2$

r)  $9x + 3$

t)  $-5x - 2$

kh)  $-3x - 4$

s)  $-4x - 4$

j)  $4x + 4$

d)  $-9x - 3$

sh)  $-10x + 3$

Iskudhufashada iyo isuqeybintu waxa ay leeyihiin xiriir. Xeerarka qaybinta abyooneyaasha waxa ay la mid yihiin kuwa iskudhufashada, marka loo eego summadda qaybta, taran summadeed ahaan.

Soo koobid:

- $+\div + = +$
- $+\div - = -$
- $-\div + = -$
- $-\div - = +$

**Qaybta abyooneyaasha leh summad isku mid ah waa togane.**

**Qaybta abyooneyaasha leh summad kala duwan waa tabane.**

### Layli 8

1. Qiimee:

b)  $2 \div 2$

x)  $6 \div (-3)$

r)  $(-12) \div (-4)$

dh)  $(-2) \div (-2)$

t)  $8 \div 2$

kh)  $-9 \div 3$

s)  $(-18) \div (-9)$

c)  $12 \div (-4)$

j)  $8 \div (-2)$

d)  $(-10) \div (-2)$

sh)  $-22 \div 10$

g)  $(-15) \div (-3)$

# 4 XISAABFALLADA TIROOYINKA IDIL



## Naqtiin

### Layli 1

1. Ka shaqee

b)	291634	t)	364925	j)	762194
	634197		153219		97578
	3795		214338		18349
	+ 1629		+ 94716		+ 2978
	<hr/>		<hr/>		<hr/>

x)  $279\,365 + 198\,093 + 100\,298 + 59\,620$

kh)  $86 + 275\,190 + 150\,029 + 32\,146 + 9\,768$

d)  $384\,193 + 59\,268 + 970\,016 + 343\,195$

2. Waa maxay wadarta:

Boqol sagaashan iyo siddeed kun saddex boqol afartan iyo shan, iyo Shan boqol toddobaatan iyo labo kun sagaal boqol lixdan iyo afar?

3. Habbee oo xisaabi.

b)  $342 \times 165$       t)  $296 \times 257$       j)  $434 \times 628$       x)  $845 \times 396$

4. Qandaraasle ayaa go'aansaday in uu dhiso guri. Waxa uu shaqaaleeyay labo farsamo yaqaan iyo labo iyo toban kuuli . Farsamo yaqaanka waxa maalintii la siinaayay Sh 20 000, halka qofka kuuliga ah la siinaayay maalintii Sh 10 000. Immisa lacag ayaa uu qandaraasluhu siinayaa dhammaan shaqaalaha maalintii

5. Ka shaqee

b)	2708	t)	3628	j)	4372	x)	6328
	x 125		x 142		x 249		x 462
	<hr/>		<hr/>		<hr/>		<hr/>

6. Habbee oo xisaabi

b)  $7\,368 \div 24$       t)  $8\,634 \div 42$       j)  $12\,698 \div 36$

7. Xaflad ayaa 2 400 marti ah lagu sooray hal sharaab qofkiiba. Immisa Kartoona ayaa la soo iibiyay haddii kartoona ay ku jireen 25 dhalo (quraaradood)?

8. Xisaabi:

b)  $(225 \div 15) - (9 \div 3)$

t)  $(95 - 21) - (36 \div 4)$

j)  $(125 \div 5) + (12 + 3) - (40 - 30)$

x)  $18 \div (3 \times 4) + 6 - 12$

## Isugeyn

Marka la isugeynaayo:

- Dhig god kasta rugta saxda ah ee qiime-rugeedka.
- Marka hore isugee kowaadyada oo u qor godadka ay qaateen si muuqata.
- Mar walba maskaxda ku hay halkii ay ka jirto qaadasho.

## Tusaalooyin

(i) Habbee oo xisaabi:  $23\ 898\ 172 + 27\ 014\ 653$

$$\begin{array}{r} 23\ 898\ 172 \\ + 27\ 014\ 653 \\ \hline 50\ 912\ 825 \end{array}$$

(ii) Xisaabi wadarta  $342\ 898$  iyo  $2\ 654$ .

$$\begin{array}{r} 342\ 898 \\ + 2\ 654 \\ \hline 345\ 552 \end{array}$$

(iii) Ka shaqee  $6\ 930\ 821 + 1\ 269\ 230 + 400\ 028$

$$\begin{array}{r} 6\ 930\ 821 \\ 1\ 269\ 230 \\ + 400\ 028 \\ \hline 8\ 600\ 079 \end{array}$$

## Layli 2

1. Ka shaqee:

b)  $42\ 971\ 804$   
 $+ 27\ 348\ 123$   


---

t)  $56\ 217\ 29$   
 $+ 87\ 124\ 583$   


---

j)  $84\ 210\ 729$   
 $+ 63\ 543\ 20$   


---

x)  $58\ 536\ 24$   
 $37\ 025\ 31$   
 $+ 69\ 023\ 41$   


---

kh)  $27\ 135\ 207$   
 $32\ 143\ 209$   
 $+ 18\ 538\ 264$   


---

d)  $48\ 239\ 427$   
 $23\ 061\ 927$   
 $+ 16\ 334\ 671$   


---

2. Raadi wadarta  $193\ 248\ 617$  iyo  $215\ 682\ 904$ .

3. Waa maxay  $365\ 421\ 385$  loo geeyey  $98\ 724\ 347$ ?

4. Raadi wadarta  $2\ 543\ 789$ ,  $385\ 278$  iyo  $16\ 234\ 568$ .

5. Isugee  $21\ 678\ 423$  iyo  $298\ 784\ 308$ .

6. Sanadkii 2001 waxa jiray 521 526 carruur oo ah fasalka kowaad , 126 369 fasalka labaad, 562 078 fasalka saddexaad, 220 994 fasalka afaraad ee dugsiyada hoose ee dalka. Immisa carruur ayaa guud ahaan ku jiray dugsiyada hoose ee dalka sanadkii 2001?
7. Tirada xoolaha laga dhoofiyay afar wadan sanadkii 2000 waxa ay ahaayeen sida soo socota: Wadanka A = 2 132 341 Wadanka B = 8 127 423; Wadanka C = 1118082 iyo Wadanka D = 9108 189. Immisa ayuu ahaa wadarta tirada xoolaha ay dhoofiyeen afarta wadan?
8. Sanadkii 1999 tirada caruurta ee ku dhalatay magaalada Jidda waxa ay ahaayeen 152 503 tiradan waxa sandkii kowaad ku kordhay 17 340, ka dibna sannadkii labaad waxa ku kordhay 12 904 marka loo eego sanadkii ugu horreeyay. raadi tirada caruurta ee dhalatay sanadkii labaad.
9. Tusahan waxa uu muujinaya tiro mala awaal ah ee kunka ugu dhaw ee wadamada Afrika

Dalka	Dadka
Libiya	13 410 000
Masar	89 615 000
Soomaaliya	8 765 000
Suudaan	20 819 000
Keenya	35 810 000
Gaana	13 529 000
Nayjeeriya	96 897 000
Uganda	19 142 000

b) Waa maxay wadarta dadka wadamada:

- (i) Soomaaliya, Uganda, Libiya
- (ii) Keenya, Nayjeriya, Masar
- (iii) Suudaan, Gaana

t) Waa maxay wadarta dadka siddeedda wadan?

10. Degmada wajeer sanadkii 2001 nuskiisa hore heshay afar malyan lixdan iyo saddex kun siddeetan iyo toddobo kun shillin oo loogu talagalay mashaariicda horumarinta. Sanadka nuskiisii labaad degmada waxa loo qorsheeyay sagaal boqol iyo soddon iyo toddobo kun lix boqol iyo hal shillin. Immisa lacag ayaa ay degmadu u heshay masaariicda horumarinta sanadkaas?

## Kalagoyn

Kalagoynta waa in aad maskaxda ku hayaa qodobbadan:

- U qor tirooyinka si muuqata.
- Hubi in godadka ay ku yaaliin qiime rogeedkooda saxda ah.
- ka bilow midigta oo banayso khaanad kugu filan, gaar ahaan marka aad kalagoynayso
- Mar walba xusuuso meesha aad wax ka soo amaahatay.  
waxa jira siyaabo badan oo loo yiraahdo kalagoo. Tusaale ahaan;

ka saar, raadi faraqa, immisa ayaa ay ka badan tahay, immisa haray, ka jar, iwm.

Tusaalooyin:

(i) Waa immisa 54 071 982 - 12 346 385?

$$\begin{array}{r} 54071982 \\ - 12346385 \\ \hline 41725597 \end{array}$$

(ii) Raadi faraqa u dhexeeya 68 924 iyo 946 384 xusuuso: in tirada weyn kor la mariyo.

$$\begin{array}{r} 946384 \\ - 68924 \\ \hline 877460 \end{array}$$

Layli 3

1. Ka shaqee:

b) 
$$\begin{array}{r} 5358228 \\ - 3702539 \\ \hline \end{array}$$

t) 
$$\begin{array}{r} 405261984 \\ - 854327 \\ \hline \end{array}$$

j) 
$$\begin{array}{r} 5854812 \\ - 2847983 \\ \hline \end{array}$$

x) 
$$\begin{array}{r} 5853624 \\ - 6000275 \\ \hline \end{array}$$

kh) 
$$\begin{array}{r} 27135207 \\ - 165008 \\ \hline \end{array}$$

d) 
$$\begin{array}{r} 48239427 \\ - 1503625 \\ \hline \end{array}$$

- Raadi faraqa u dhexeeya wadarta 375 298 iyo 8 742 935, iyo wadarta 7 082 164 iyo 1 494 360.
- Immisa 245 610 723 ayaa ay ka badan tahay wadarta 48 906 237 iyo 78 910 632?
- Wadarta labo tiro waa 58 965 673 labada tiro midkood waa 2 176 458 waa maxay tirada kale?
- Wadan ayaa tirada dadweynihiisu tahay 34 815 496. 26 918 180 ka mid ah waxa ay ku noolaayeen baadiyaha. Inta kale waxa ay ku noolaayeen magaalooyin. Immisa ayaa ku nool magaalooyinka?
- Tusaha hoose waxa uu muujinaya tirada xoolaha la dhoofiyay shantii sano ee ugu dambeeyay.

Lo'	Ido	Riyo	Geel
29 570 526	24 710 635	21 567 504	27 613 287

- Immisa ayaa ay lo'da la dhoofiyay ka badneyd riyaha la dhoofiyay?
- Immisa ayaa Idaha la dhoofiyay ka badnaayeen riyaha la dhoofiyay?
- Immisa ayaa uu geela la dhoofiyay ka badnaa Idaha la dhoofiyay?
- Immisa ayaa ay lo'da la dhoofiyay ka badneyd Geela la dhoofiyay?
- Immisa ayaa uu geela la dhoofiyay ka badnaa riyaha la dhoofiyay?

7. Sanadka rubiciisa hore waxa dayaarad ku dhoofay 520 000 qof. Tiro la mid ah ayaa rubicii xigay ku dhoofay. 102 500 ka mid ah waxa ay ahaayeen dumur, Immisa rag ayaa dayaaradda ku dhoofay labada rubuc ee sanadka?
8. 6 728 906 qof ayaa magaalo ku noola, 3 421 318 ka mid ayaa guryahoodu lahayeen koronto Immisa ayaa guryahoodu aanay lahayn dab?
9. Shirkad ayaa haysatay lacag dhan sh. 65 917 400 inta aysan sakada bixin. Markii ay bixisay sakada lacagta waxa ay noqotay sh. 64 269 465. Raadi inta ay shirkaddu ku bixisay sakada.
10. Sanad ayaa lix boqol iyo konton kun, labo boqol iyo labaatan rag ah iyo sagaal boqol kun dumur ah ay soo guteen xaj. waxa isqabay shan boqol kun. Inta kale xaas ma lahayn. Immisa ayaa xaas la'aan ahaa?

## Iskudhufasho

Marka aad wax iskudhufanayso xusuuso qodobbadan:

- Ku bilaw godadka joog u taxa kowaadka.
- Had iyo jeer xusuuso waxa aad wadato haddii aad wax wadatid.
- Toosi joog u taxyada si godadku ugu toosaan qiime rugeedkooda saxa ah.

### Tusaalooyin:

i) Waa maxay  $35\,728 \times 964$ ?

$$\begin{array}{r}
 35728 \\
 \times 964 \\
 \hline
 142912 \quad (x\ 4) \\
 2143680 \quad (x\ 60)\ \text{dhig}\ 0\ \text{ka}\ \text{dib}\ \text{ku}\ \text{dhugo}\ 6 \\
 32155200 \quad (x\ 900)\ \text{dhig}\ \text{labo}\ 0\ \text{ka}\ \text{dib}\ \text{ku}\ \text{dhugo}\ 9 \\
 \hline
 34441792
 \end{array}$$

(ii) Raadi taranka  $32\,746$  iyo  $1\,324$

$$\begin{array}{r}
 32746 \\
 \times 1324 \\
 \hline
 130984 \quad (x\ 4) \\
 654920 \quad (x\ 20)\ \text{dhig}\ 0\ \text{ka}\ \text{dib}\ \text{ku}\ \text{dhugo}\ 2 \\
 9823800 \quad (x\ 300)\ \text{dhig}\ \text{labo}\ 0\ \text{ka}\ \text{dib}\ \text{ku}\ \text{dhugo}\ 3 \\
 32746000 \quad (x\ 1000)\ \text{dhig}\ \text{saddex}\ 0\ \text{ka}\ \text{dib}\ \text{ku}\ \text{dhugo}\ 1 \\
 \hline
 43355704
 \end{array}$$

## Layli 4

1. Ka shaqee waxa soo socda:

b)  $1\,386 \times 652$

t)  $1\,526 \times 983$

j)  $2\,705 \times 503$

x)  $5\,812 \times 624$

kh)  $6\,156 \times 3\,251$

d)  $3\,482 \times 8\,126$

r)  $7\,569 \times 9\,435$

s)  $3\,782 \times 5\,380$

sh)  $32\,561 \times 2\,145$

$$\begin{array}{r} \text{dh)} \quad 5\,9723 \\ \quad \times 1\,507 \\ \hline \hline \end{array}$$

$$\begin{array}{r} \text{c)} \quad 9\,3452 \\ \quad \times 3\,643 \\ \hline \hline \end{array}$$

$$\begin{array}{r} \text{g)} \quad 1\,75432 \\ \quad \times 4\,615 \\ \hline \hline \end{array}$$

$$\begin{array}{r} \text{f)} \quad 3\,2541 \\ \quad \times 9\,384 \\ \hline \hline \end{array}$$

$$\begin{array}{r} \text{q)} \quad 1\,7248 \\ \quad \times 9\,160 \\ \hline \hline \end{array}$$

$$\begin{array}{r} \text{k)} \quad 3\,5589 \\ \quad \times 1\,234 \\ \hline \hline \end{array}$$

2. Xisaabi taranka  $9\,574$  iyo  $3\,643$ .

3. Xisaabi taranka  $9\,547$  iyo  $274\,508$ .

4. Waa maxay  $65\,208$  lagu dhuftay  $2\,604$ ?

5. Isku dhufo  $32\,958$  iyo  $3\,705$ .

6. Garoonka kubbadda cagta ayaa joogay  $75\,264$  qof. Haddii qof kasta uu ka bixiyay tikitka sh  $1\,250$ . Immisa shillin ayaa ay ururiyeen?

7. Jamac ayaa soo iibsaday  $123$  joog oo surwaalo ah midkii waxa uu ka soo bixiyay sh  $25\,755$  iyo  $765$  shaadh oo uu midkii ka soo bixiyay sh  $12\,595$ . Immisa ayaa uu kharash gareeyay guud ahaan?

## Isuqaybin

Isuqaybinta texgeli waxa soo socda:

- Ka bilaw bidixda.
- Adeegso joog u tax shaqo si aad qiyaas uga qaadato isla markaasna aad u hubisid iskudhufashada.
- Iskudhufo oo kalagoo si aad u hesho "haraaga"
- Sida kale oo loo dhihi karo isuqaybi waa:

Raadi qaybta, wadaaji iyo intee u galaysa.



Tusaale:

(i) Waa maxay  $9\ 034\ 780 \div 6\ 340$ ?

9 034 780 waa la qaybshe, 6 340 qaybshe

1 4 2 5 haraa 280

$$\begin{array}{r}
 6340 \overline{) 9034780} \\
 \underline{6340} \phantom{0} \\
 26947 \phantom{0} \\
 \underline{25360} \phantom{0} \\
 15878 \phantom{0} \\
 \underline{12680} \phantom{0} \\
 31980 \\
 \underline{31700} \\
 280
 \end{array}$$

6 3 4 0	x	
6 3 4 0	1	←
1 2 6 8 0	2	←
1 9 0 2 0	3	
2 5 3 6 0	4	←
3 1 7 0 0	5	←

1425 waa qayb oo haraagu waa 280.

(ii) Raadi qaybta marka  $975\ 432\ 841$  loo qaybiyo  $2\ 678$

3 6 4 2 3 9 haraa 799

$$\begin{array}{r}
 2678 \overline{) 975432841} \\
 \underline{8034} \phantom{0} \\
 17203 \phantom{0} \\
 \underline{16068} \phantom{0} \\
 11352 \phantom{0} \\
 \underline{10712} \phantom{0} \\
 6408 \phantom{0} \\
 \underline{5356} \phantom{0} \\
 10524 \phantom{0} \\
 \underline{8034} \phantom{0} \\
 24901 \\
 \underline{24102} \\
 799
 \end{array}$$

2 6 7 8	x	
2 6 7 8	1	←
5 2 5 6	2	←
8 0 3 4	3	←
1 0 7 1 2	4	←
1 3 3 9 0	5	
1 6 0 6 8	6	←
1 8 7 4 6	7	
2 1 4 2 4	8	
2 4 1 0 2	9	←

Layli 5

1. Ka shaqee ( adeegso kalkulaytar haddii loo baahdo):

b)  $43\ 916\ 826 \div 1\ 234$

t)  $34\ 441\ 792 \div 964$

j)  $37\ 084\ 380 \div 3\ 004$

x)  $256\ 768 \div 2\ 560$

kh)  $13\ 871\ 514 \div 2\ 122$

d)  $11\ 477\ 816 \div 5\ 432$

r)  $132\ 500 \div 2\ 121$

s)  $153\ 750 \div 1\ 625$

sh)  $21\ 546\ 228 \div 3\ 124$

dh)  $3\ 567\ 891 \div 7\ 008$

2. Isuqeybi 7 543 218 iyo 639.
3. Raadi qaybta marka 327 565 loo qaybiyo 245.
4. Waa maxay haraaga marka sh 756 215 la wadaajiyo 560 qof?
5. Immisa jeer ayaa 4 321 ay u gelaya 24 379 082?
6. Buug-gade ayaa qabtay sh 724 955 ka dib markii uu gaday buugaaga. Halkii buug waxa uu joogay sh 245. Immisa buug ayaa uu gaday?
7. Warshad ayaa waxa ay soo saartaa 4 955 kg oo sonkor ah halkii maalin. Sonkorta waxa lagu shubay baakado oo middiiba qaadkeedu yahay 45 kg. Immisa baakadood ayaa la adeegsaday?
8. Xaflad ayaa waxa 875 qof lagu sooray hal galaas oo sharaab ah. Immisa kartoon oo sharaab ayaa la soo iibiyay haddii halkii kartoon ay ku jiraan 25 galaas?
9. Lacag dhan sh 16 338 976 ayaa loo qaybiyay 356 dugsi. Immisa ayaa uu dugsi walba helaya?

## Horsanaanta xisaabfallada

Haddii ay jiraan wax ka badan hal xisaabfal:

- Marka hore ka shaqee qaybta *bilaha*.
- Ka dib samee *isuqaybinta*.
- Ka dib samee *iskudhufashada*.
- Markaa ka dib samee *isugeynta*.
- Markaa ka dib samee *kalagoynta*.

### Tusaalooyin:

(i) Waa maxay  $26 \times 4 + 31 - 55$ ?

$$\begin{aligned} 26 \times 4 + 31 - 55 &= 104 + 31 - 55 && \text{(isku dhufasho)} \\ &= 135 - 55 && \text{(isugeyn)} \\ &= 80 && \text{(kalagoynta)} \end{aligned}$$

(ii) Waa maxay  $26 \times (4 + 31) - 55$ ?

$$\begin{aligned} 26 \times (4 + 31) - 55 &= 26 \times 35 - 55 && \text{(bilo)} \\ &= 910 - 55 && \text{(isku dhufasho)} \\ &= 855 && \text{(kalagoynta)} \end{aligned}$$

### Layli 6

1.  $46 - 11 + 9 \times 3 \quad 234 \div 3 + 29 \quad 2 \quad 1$
2.  $215 + 11 - 9 \times 6 \quad 750 \div (10 \times 15) + 7 \times 8 - 60 \div 10 \quad 4 \quad 3$
3.  $108 + 9 - (5 \times 6) \div 2 \quad 16 \times 7 \div 4 + 21 \times 5 \quad 6 \quad 5$
4.  $31 \times 7 + 21 \times 3 - 13 \times 8 \quad 90 - 50 \div (25 \div 5) \quad 8 \quad 7$
5.  $(48 \div 4) + (13 \times 6) - (45 \div 3) \quad (18 \times 4) \div (3 + 3) \quad 10 \quad 9$
6.  $30 + (66 \div 6) + (10 \times 8) \quad (50 + 80) \div (25 \times 6) \quad 12 \quad 11$
7.  $(195 - 55) \div (210 \div 30) \quad (67 - 4) \div 9$

# 5 JAJAB, TOBANLE IYO BOQOLLEY

## Naqtiin

### Layli 1

1. Xisaabi farqiga:

a)  $5\frac{5}{6} - 3\frac{2}{3}$

t)  $8\frac{1}{3} - 4\frac{3}{4}$

j)  $9\frac{3}{7} - 6\frac{2}{5}$

x)  $7\frac{1}{2} - 5\frac{7}{8}$

kh)  $8\frac{3}{11} - 4\frac{5}{6}$

2. Xisaabi taranka:

b)  $7\frac{1}{2} \times 3\frac{1}{4}$

t)  $3\frac{7}{8} \times 1\frac{2}{7}$

j)  $5\frac{3}{4} \times 2\frac{1}{2}$

x)  $6\frac{2}{3} \times 2\frac{1}{4}$

kh)  $3\frac{2}{3} \times 4\frac{1}{6}$

3. Xisaabi qaybta:

b)  $2\frac{1}{5} \div 1\frac{1}{2}$

t)  $5\frac{3}{4} \div 2\frac{1}{5}$

j)  $3\frac{1}{4} \div 2\frac{2}{3}$

x)  $9\frac{1}{3} \div 3\frac{7}{10}$

kh)  $6\frac{2}{3} \div 2\frac{1}{5} \div 2\frac{1}{5}$

4. Qiimee.

b)  $\frac{1}{2}$  ka  $(2\frac{1}{5} \div \frac{4}{5}) + 3\frac{1}{4} - 1\frac{7}{8} \times 1\frac{1}{2}$

t)  $5 + \frac{1}{4}$  ka  $(3\frac{1}{4} + \frac{1}{3}) \times \frac{1}{2} \div 1\frac{1}{4} - 2\frac{1}{2}$

j)  $\frac{3}{4}$  ka  $\frac{7}{8} \div \frac{1}{2} \times \frac{3}{5} + \frac{2}{3} - \frac{7}{2}$

x)  $\frac{7}{8}$  ka  $\frac{3}{4} \times 2\frac{1}{2} \div 1\frac{1}{4} - \frac{3}{5} + 4\frac{1}{2}$

5. Xisaabi qaybta:

b)  $88.2 \div 7$

t)  $45.6 \div 12$

j)  $64.8 \div 5$

x)  $24.65 \times 2.42$

kh)  $46.15 \times 32.04$

6. U qor boqolleyda soo socota (i) Jajabyo ahaan (ii) jajab tobanle ahaan.

b) 75%

t) 125%

j) 25%

x) 60%

kh) 29%

7. Maxamed ayaa  $\frac{2}{5}$  mushaarkiisa waxa uu ku bixiyay cunno,  $\frac{1}{4}$  na kirada guriga. Waa maxay boqolkii inta uu ku bixiyay waxyaabaha kale?

8. Warsame waxa uu lahaa dhul 400 hikaar ah. Waxa uu carruurtiisa siiyay  $\frac{3}{4}$  ee dhulka. Haddii cunug walba ku soo hagaagtay 50 hikaar. Immisa carruur ayaa uu dhalay?

## Xisaabfallada Jajabyada

Haddii ay jiraan wax ka badan hal xisaabfal:

- Marka hore xisaabi waxa ku jira bilaha.
- Ka dibna samee isuqaybinta oo raaci iskudhufashada.
- Ugu dambeynta samee isugeynta ka dibna kalagoynta.

### Tusaalooyin:

$$(i) \quad \frac{1}{2} + \frac{2}{3} - \frac{1}{4}$$

Horta isugee, ka dib kala goo.

$$\begin{aligned} \frac{1}{2} + \frac{2}{3} - \frac{1}{4} &= \left(\frac{1}{2} + \frac{2}{3}\right) - \frac{1}{4} \\ &= \frac{3+4}{6} - \frac{1}{4} \\ &= \frac{7}{6} - \frac{1}{4} \\ &= \frac{14-3}{12} = \frac{11}{12} \end{aligned}$$

$$(ii) \quad \frac{1}{2} - \frac{2}{3} + \frac{1}{4}$$

Dib u qor oo isku habee:

$$\frac{1}{2} - \frac{2}{3} + \frac{1}{4} = \frac{1}{2} + \frac{1}{4} - \frac{2}{3}$$

Horta isku dar, ka dib kala goo:

$$\begin{aligned} \frac{1}{2} + \frac{1}{4} - \frac{2}{3} &= \left(\frac{1}{2} + \frac{1}{4}\right) - \frac{2}{3} \\ &= \frac{2+3}{4} - \frac{2}{3} \\ &= \frac{3}{4} - \frac{2}{3} \\ &= \frac{9-8}{12} = \frac{1}{12} \end{aligned}$$

$$(iii) \left(1\frac{1}{6} - \frac{3}{4}\right) + 5 - \frac{3}{8}$$

Marka hore ka shaqee bilaha:

$$\begin{aligned} \left(1\frac{1}{6} - \frac{3}{4}\right) + 5 - \frac{3}{8} &= \frac{14-9}{12} + 5 - \frac{3}{8} \\ &= \frac{5}{12} + 5 - \frac{3}{8} \end{aligned}$$

(Horta isugee, ka dib kalagoo)

$$\begin{aligned} &= 5\frac{5}{12} - \frac{3}{8} \\ &= 5\frac{10-9}{24} \\ &= 5\frac{1}{24} \end{aligned}$$

$$(iv) \left(2\frac{2}{3} - \frac{1}{3}\right) - \left(\frac{3}{4} - \frac{1}{2}\right)$$

Marka hore ka shaqee waxa ku jira bilaha:

$$\begin{aligned} &= \left(2\frac{2}{3} - \frac{1}{3}\right) - \left(\frac{3}{4} - \frac{1}{2}\right) \\ &= \left(2\frac{2-1}{3}\right) - \left(\frac{3-2}{4}\right) \\ &= \left(2\frac{1}{3}\right) - \left(\frac{1}{4}\right) \\ &= \left(2\frac{4-3}{12}\right) = 2\frac{1}{12} \end{aligned}$$

(v) Marka hore ka shaqee isuqaybinta:

$$\frac{3}{4} \times \frac{1}{6} \div \frac{5}{8}$$

$$\begin{aligned} \text{Dib u habee: } &\frac{1}{6} \div \frac{5}{8} \times \frac{3}{4} \\ &= \frac{1}{6} \times \frac{8}{5} \times \frac{3}{4} \\ &= \frac{8}{30} \times \frac{3}{4} \\ &= \frac{1}{5} \end{aligned}$$

## Layli 2

Qiimee

$$1) \frac{3}{8} + \frac{3}{4} - \frac{4}{5} \quad 2) \frac{2}{5} - \frac{1}{2} + \frac{5}{6} \quad 3) \frac{5}{12} - \frac{5}{11} + \frac{5}{11}$$

$$4) \frac{3}{8} + \frac{7}{12} - \frac{7}{10} \quad 5) 1\frac{2}{3} + 3\frac{1}{5} - 2\frac{3}{4} \quad 6) 1\frac{2}{3} - 1\frac{3}{4} + 3\frac{1}{5}$$

$$7) 5\frac{4}{5} + 3\frac{7}{12} - 4\frac{23}{60} \quad 8) 1\frac{7}{15} - 8\frac{8}{10} + 11$$

- 9)  $\frac{1}{2} + \frac{3}{4} - 1$       10)  $2 - \frac{5}{8} + \frac{3}{5}$       11)  $6\frac{1}{3} - 2 - \frac{5}{6}$
- 12)  $10 + 7\frac{5}{12} - \frac{3}{20}$       13)  $(\frac{1}{2} + \frac{2}{3}) - (\frac{4}{5} + \frac{1}{6})$
- 14)  $(\frac{5}{7} - \frac{1}{5}) - (\frac{3}{4} - \frac{3}{8})$
- 15)  $(3\frac{1}{3} - \frac{3}{5}) - (1\frac{7}{10} - \frac{1}{12})$
- 16)  $(4\frac{5}{6} - 1\frac{7}{12}) - (\frac{3}{24} + \frac{5}{12})$
- 17)  $1\frac{4}{5} + (4\frac{5}{11} + \frac{5}{11})$       18)  $7\frac{5}{8} - (2\frac{1}{4} + 2\frac{7}{16})$
- 19)  $\frac{3}{5} \times \frac{2}{7} \div \frac{1}{3}$       20)  $5 \times \frac{1}{2} \div \frac{3}{10}$       21)  $1\frac{3}{8} \times 2\frac{1}{4} \div 1\frac{5}{6}$
- 22)  $4\frac{1}{2} \div 1\frac{1}{5} \times 3\frac{1}{3}$       23)  $(\frac{1}{2} \times \frac{3}{4}) + (1\frac{5}{6} \div 2\frac{5}{6})$
- 24)  $\frac{1}{10}$  of  $(2\frac{1}{2} \div 4)$       25)  $\frac{1}{2}$  of  $(\frac{5}{7} \div 4\frac{1}{3})$
- 26)  $5\frac{1}{3} - (\frac{3}{10}$  of  $1\frac{3}{4})$       27)  $1\frac{4}{5} \times 1\frac{3}{10} \div \frac{2}{15}$
- 28)  $7\frac{1}{7} \times 21 \div 1\frac{3}{11}$       29)  $2\frac{7}{10} \times \frac{5}{6} \div 3$       30)  $\frac{3}{5} \div \frac{1}{2} - \frac{1}{4}$

## Labajibbaarka jajabyada

Labajibbaarka jajabyo waxa loo xisaabiya iyada oo jajibka naftiisa labo jeer la iskudhufto.

### Tusaalooyin:

(i) Raadi labajibbaarka 12

$$\text{labajibbaarka } 12 = 12^2 = 12 \times 12 = 144$$

(ii) Raadi labajibbaarka  $\frac{3}{7}$

$$(\frac{3}{7})^2 = \frac{3}{7} \times \frac{3}{7} = \frac{9}{49}$$

(iii) Raadi labajibbaarka  $7\frac{2}{3}$

$$\text{Marka hore jajibka u beddel jajib ma qummane ah } 7\frac{2}{3} = \frac{7 \times 3 + 2}{3} = \frac{21 + 2}{3} = \frac{23}{3}$$

$$\text{Ka dib labajibbaar jawaabta } (7\frac{2}{3})^2 = (\frac{23}{3})^2 = \frac{23}{3} \times \frac{23}{3} = \frac{529}{9} = 58\frac{7}{9}$$

## Layli 3

1. Xisaabi labajibbaarrada jajabyada iyo tirooyinka isku dhafan:

b)  $\frac{1}{4}$     t)  $\frac{2}{5}$     j)  $\frac{3}{8}$     x)  $\frac{1}{5}$     kh)  $\frac{3}{5}$     d)  $\frac{7}{9}$   
 r)  $\frac{1}{8}$     s)  $\frac{2}{15}$     sh)  $\frac{11}{20}$     dh)  $\frac{17}{25}$     c)  $\frac{7}{19}$     g)  $\frac{8}{31}$   
 f)  $1 \frac{1}{4}$     q)  $2 \frac{2}{5}$     k)  $3 \frac{1}{3}$     l)  $4 \frac{2}{5}$     m)  $5 \frac{3}{7}$     n)  $7 \frac{1}{3}$   
 w)  $3 \frac{3}{15}$     h)  $6 \frac{1}{4}$     y)  $3 \frac{1}{10}$     a)  $15 \frac{7}{12}$     e)  $18 \frac{3}{20}$     i)  $9 \frac{4}{21}$

2. Qiimee

b)  $(1 \frac{2}{5})^2$     t)  $(2 \frac{3}{4})^2$     j)  $(3 \frac{4}{5})^2$   
 x)  $(2 \frac{1}{8})^2$     kh)  $(1 \frac{5}{6})^2$     d)  $(3 \frac{1}{7})^2$   
 r)  $(3 \frac{3}{8})^2$     s)  $(3 \frac{1}{4})^2$     sh)  $(2 \frac{5}{8})^2$   
 dh)  $(1 \frac{1}{10})^2$     c)  $(2 \frac{4}{7})^2$     g)  $(5 \frac{4}{11})^2$

3. Qol labajibbarane ah ayaa dhererka dhinaciiisu yahay  $2\frac{4}{7}$  m. Raadi bedkiisa.

4. Gobol dhul ayaa ah  $13\frac{1}{5}$ m iyo  $13\frac{1}{5}$ m. Waa maxay bedkiisu mitir labajibbaaran ahaan?

5. Dhul bixiye ayaa u qaybiyay gobol dhul ah laba qaybood oo labajibbaarane ah oo leh dhinacyada  $\frac{2}{5}$  km iyo  $\frac{7}{12}$  km. Waa maxay bedka gobol walba?

## Xidid labajibbaarka jajab

Si loo helo xidid labajibbaarka jajab waxa aan raadinayna xidid labajibbaarka sarreeyaha iyo xidid labajibbaarka hooseeyaha.

### Tusaalooyin:

(i) Xisaabi xidid labajibbaarka  $\frac{4}{25}$

$$\sqrt{\frac{4}{25}} = \frac{\sqrt{4}}{\sqrt{25}} = \frac{2}{5}$$

(ii) Qiimee  $\sqrt{3 \frac{1}{16}}$

$$3 \frac{1}{16} = \frac{16 \times 3 + 1}{16} = \frac{48 + 1}{16} = \frac{49}{16}$$

$$\text{Haddaba } \sqrt{3 \frac{1}{16}} = \frac{\sqrt{49}}{\sqrt{16}} = \frac{7}{4} = 1 \frac{3}{4}$$

(iii) Waa maxay dhererka dhinaca labajibbaarane bedkiisu yahay  $14 \frac{1}{16} \text{ m}^2$ ?

$$14 \frac{1}{16} = \frac{16 \times 14 + 1}{16} = \frac{224 + 1}{16} = \frac{225}{16}$$

si loo helo dhererka dhinaca waxa aan soo saareynaa xidid labajibbaarka  $\frac{225}{16}$

$$\sqrt{\frac{225}{16}} = \frac{\sqrt{225}}{\sqrt{16}} = \frac{\sqrt{3 \times 3 \times 5 \times 5}}{\sqrt{2 \times 2 \times 2 \times 2}} = \frac{3 \times 5}{2 \times 2} = \frac{15}{4} = 3 \frac{3}{4}$$

$$\text{dhererka dhinaca} = 3 \frac{3}{4}$$

### Layli 4

1. Xisaabi xidid labajibbaarka

b)  $\frac{9}{4}$       t)  $\frac{16}{25}$       j)  $\frac{4}{25}$       x)  $\frac{1}{25}$       kh)  $\frac{9}{10}$

d)  $\frac{25}{36}$       r)  $\frac{36}{49}$       s)  $\frac{40}{100}$       sh)  $\frac{81}{576}$       dh)  $\frac{169}{625}$

2. Qiimee

b)  $\sqrt{\frac{225}{16}}$       t)  $\sqrt{\frac{16}{25}}$       j)  $\sqrt{\frac{144}{169}}$       x)  $\sqrt{\frac{121}{625}}$

kh)  $\sqrt{\frac{225}{576}}$       d)  $\sqrt{\frac{169}{81}}$       r)  $\sqrt{\frac{225}{361}}$       s)  $\sqrt{\frac{441}{529}}$

sh)  $\sqrt{1 \frac{225}{576}}$       dh)  $\sqrt{13 \frac{4}{9}}$       c)  $\sqrt{11 \frac{1}{9}}$       g)  $\sqrt{2 \frac{14}{25}}$

3. Bedka qol labajibbaarane ah waa  $2 \frac{14}{25} \text{ m}^2$ . Raadi dhererka hal dhinac iyo wareegga qolka.

4. Bedka kadiifad labajibbaarane ah waa  $4 \frac{29}{49} \text{ m}^2$ . Raadi dhererka hal dhinac iyo wareeggeeda.

## Xisaabfallada iskudhafan ee tobanlayaasha

Xisaabfallada isku dhafan:

- Marka hore xisaabi waxa ku jira bilaha.
- Ka dib samee **isuqaybinta** oo raaci **iskudhufashada**.
- Ugu dambeyn samee isugeynta iyo kalagoynta.

**Bilo , ka, isuqaybin, iskudhufasho, isugeyn iyo kalagoynta .**



## Tusaalooyin:

(i) Waa maxay  $(4.2 + 3.85) \times 1.7$ ?

$$(4.2 + 3.85) \times 1.7$$

$$= 8.05 \times 1.7 \text{ (bilo)}$$

$$= 13.685 \text{ (iskudhufasho)}$$

$$\begin{array}{r} 4.2 \\ + 3.85 \\ \hline 8.05 \end{array}$$

$$\begin{array}{r} 8.05 \\ \times 1.7 \\ \hline 5635 \\ 8050 \\ \hline \end{array}$$

$$\underline{13.685}$$

(Marka aan tirino tirada rugaha tobanlayaasha ka dib)

(ii) Waa maxay  $3.95 \times 2.7 + 85.6 \div 0.2$ ?

$$1.95 \times 2.7 + 85.6 \div 0.2 = 3.95 \times 2.7 + \frac{85.6}{0.2} \quad (\text{marka hore isuqaybin})$$

$$= 3.95 \times 2.7 + \frac{856^{428} \times 10}{2 \times 10}$$

$$= 3.95 \times 2.7 + 428 \quad (\text{iskudhufasho})$$

$$= 10.665 + 428 \quad (\text{isugeyn})$$

$$= 438.665$$

## Layli 5

Qiimee

1)  $7.52 \div 0.2 - 11.8$

2)  $11.7 - 0.5 \times 0.5 \ 2 \ 1$

3)  $16.5 \div 0.5 + 96.84$

4)  $5.27 + 0.36 \div 0.3 \ 4 \ 3$

5)  $48.7 \times 92 + 36.4$

6)  $36.5 - 18 \times 0.7 \ 6 \ 5$

7)  $24.54 - (2.84 \times 1.03)$

8)  $142.3 \times 2.5 - 26.75 \ 8 \ 7$

9)  $(2.31 \div 0.77) \times (11.5 \div 2.94)$

10)  $16.04 + 79.03 - 12.94$

## Labajibbaarka tobanle

Labajibbaarka tobanle waxa loo xisaabiyaa iyada oo la iskudhufto tobanlaha iyo naftiisa.

Xusuuso: Tiri tirada rugaha tobanle ee tirada aad iskudhufanaysid ku jira; kaas ayaa noqonaya tirada rugaha tobanle ee jawaabta.

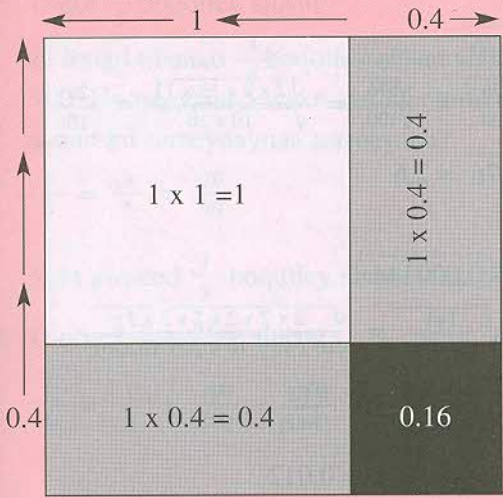
Tusaalooyin:

(i) Raadi labajibbaarka 1.4  
 labajibbaarka 1.4 = (1.4)<sup>2</sup>  
 = 1.4 x 1.4  
 Isugu dhufo sida tirooyin idil

$$\begin{array}{r} 1.4 \\ \times 1.4 \\ \hline 5.6 \\ 1.4 \\ \hline 1.96 \end{array}$$

Ka soo tiri labo rug tobanle dhinaca midig oo geli dhibicda tobanlaha.  
 Haddaba, labajibbaarka 1.4 = (1.4)<sup>2</sup> = 1.96

Sida oo kale:  
 Jaantuska waxa uu muujinaya bedka 1.4 x 1.4



$$1 + 0.4 + 0.4 + 0.16 = 1.96$$

$$(1.4)^2 = (1 + 0.4)^2 = (1 \times 1) + (0.4 \times 0.4) + 2(1 \times 0.4) = 1 + (0.16) + 2(0.4)$$

$$= 1 + 0.16 + 0.8 = 1.96$$

(ii) Raadi labajibbaarka 0.6  
 labajibbaarka 0.6 = (0.6)<sup>2</sup>  
 = 0.6 x 0.6  
 = 0.36

(iii) Raadi labajibbaarka 1.05  
 labajibbaarka 1.05 = (1.05)<sup>2</sup>  
 = 1.05 x 1.05

$$\begin{array}{r} 1.05 \\ \times 1.05 \\ \hline 5.25 \\ 10.50 \\ \hline 1.1025 \end{array}$$

Ka soo tiri 4 rug tobanle dhinaca midig oo geli dhibicda tobanlaha.  
 labajibbaarka 1.05 = 1.1025

## Xidid labajibbaarka tobanle

Si loo helo xidid labajibbaarka tobanle, u tibaax tobanlaha jajab leh hooseeyayaal 100, 10000, 1000000, ..... ku xiran tirada rugaha tobanle ee ku jira tobanlaha.

Ogow: Waa in ay jirta tiro dhaban oo eber ah. Markaa raadi xidid labajibbaarka jajabka.

### Tusaalooyin:

(i) Raadi xidid labajibbaarka 0.04

$$\begin{aligned} \text{xidid labajibbaarka } 0.04 &= \sqrt{0.04} \\ &= \sqrt{\frac{4}{100}} = \frac{\sqrt{4}}{\sqrt{100}} = \frac{2}{10} = 0.2 \\ \therefore \sqrt{0.04} &= 0.2 \end{aligned}$$

(ii) Raadi xidid labajibbaarka 6.76

$$\begin{aligned} \text{xidid labajibbaarka } 6.76 &= \sqrt{6.76} \\ &= \sqrt{\frac{676}{100}} = \frac{\sqrt{676}}{\sqrt{100}} = \frac{\sqrt{2 \times 2 \times 13 \times 13}}{\sqrt{10 \times 10}} = \frac{26}{10} \\ \therefore \sqrt{6.76} &= 2.6 \end{aligned}$$

(iii) Raadi xidid labajibbaarka 0.000144

$$\begin{aligned} \text{xidid labajibbaarka } 0.000144 &= \sqrt{0.000144} \\ &= \sqrt{\frac{144}{1000000}} = \frac{\sqrt{2 \times 2 \times 2 \times 2 \times 3 \times 3}}{\sqrt{10 \times 10 \times 10 \times 10 \times 10 \times 10}} \\ &= \frac{2 \times 2 \times 3}{10 \times 10 \times 10} = \frac{12}{1000} \\ \therefore \sqrt{0.000144} &= 0.012 \end{aligned}$$

### Layli 6

1. Xisaabi xidid labajibbaarka:

b) 0.81

t) 0.25

j) 0.49

x) 0.16

kh) 0.01

d) 0.04

r) 0.09

s) 0.01

sh) 1.96

dh) 2.89

c) 5.29

g) 7.29

2. Qiimee

b)  $\sqrt{0.0169}$

t)  $\sqrt{0.0196}$

j)  $\sqrt{0.0324}$

x)  $\sqrt{0.0961}$

kh)  $\sqrt{0.0081}$

d)  $\sqrt{0.0004}$

r)  $\sqrt{0.0009}$

s)  $\sqrt{0.0256}$

sh)  $\sqrt{20.25}$

dh)  $\sqrt{0.0121}$

c)  $\sqrt{0.3025}$

g)  $\sqrt{0.2304}$

## Boqolley

Summadda, %, micnaheedu waa 'boqolkiiba' laga saaray boqol, haddaba 60% waxa loo akhriyaa boqolkiiba 60 ama  $\frac{60}{100}$ . Boqolleyda waxa loo qori karaa jajab ahaan, tobanle ahaan, iyo saami ahaan.

### Boqolley iyo jajabyo

Marka aad jajab u beddelayso boqolley:

- Haddii hooseeyuhu yahay isir 100, raadi jajab u dhigma oo leh hooseeye 100 ah .
- Haddii hooseeyaha aan ahayn isir 100 ku dhufo sarreeyaha iyo hooseeyaha 100 ka dibna raadi jajabka u dhigma ee leh hooseeye 100 ah.

### Tusaalooyin:

(i) U qor  $\frac{3}{5}$ -boqolley ahaan:

Si loogu tibaaxo  $\frac{3}{5}$ -boqolley ahaan waxa aan u qoraynaa jajab hooseeyihiisu yahay 100. Hooseeyaha 5 waxa aan ku dhufanaynaa 20 si looga dhigo 100. sida oo kale ayaan ku sameynaynaa sarreeyaha?

$$\frac{3}{5} = \frac{3}{5} \times \frac{20}{20}$$

Sida awgeed  $\frac{3}{5}$  boqolley ahaan waa 60%

(ii) U qor  $\frac{1}{6}$  boqolley ahaan:

$$\frac{1}{6} = \frac{1}{6} \times \frac{100}{100} = \frac{100}{600} = \frac{100}{\frac{6}{\frac{600}{6}}} = \frac{16\frac{2}{3}}{100} = 16\frac{1}{3} \%$$

(iii) U qor  $\frac{4}{7}$  boqolley ahaan:

$$\frac{4}{7} = \frac{4}{7} \times \frac{100}{100} = \frac{400}{700} = \frac{400}{\frac{7}{\frac{700}{7}}} = \frac{57\frac{1}{7}}{100} = 57\frac{1}{7} \%$$

### Boqolley oo jajab ahaan loo tibaaxo

(iv) U tibaax boqolleydan jajab ahaan

b) 20%

t) 45%

j) 95%

$$b) 20\% = \frac{20}{100} = \frac{2}{10} = \frac{1}{5} \quad \therefore 20\% \text{ jajab ahaan waa } \frac{1}{5}$$

$$t) 45\% = \frac{45}{100} = \frac{9}{20} \quad \therefore 45\% \text{ jajab ahaan waa } \frac{9}{20}$$

$$j) 95\% = \frac{95}{100} = \frac{19}{20} \quad \therefore 95\% \text{ jajab ahaan waa } \frac{19}{20}$$

## Layli 7

1. U tibaax waxa soo socda boqolley ahaan:

- b)  $\frac{4}{5}$       t)  $\frac{19}{20}$       j)  $\frac{11}{20}$       x)  $\frac{3}{8}$       kh)  $\frac{17}{40}$   
 d)  $\frac{13}{25}$       r)  $\frac{23}{24}$       s)  $\frac{33}{50}$       sh)  $\frac{17}{4}$       dh)  $\frac{43}{80}$

2. U qor boqolleydan jajabyo ahaan:

- b) 50%      t) 40%      j) 30%      x) 26%      kh) 75%  
 d) 15%      r) 80%      s) 24%      sh) 55%      dh) 100%  
 c) 2%      g) 68%

## Boqolley iyo tobanlayaal

Marka tobanle loo beddelaayo boqolley:

- U qor tobanlaha jajab ahaan ka dibna
- Raadi jajab u dhigma oo leh hooseeye 100 ah.

### Tusaalooyin:

(i) U qor tobanleyaasha soo socda boqolley ahaan:

- b) 0.25      t) 0.7      j) 0.55      x) 0.0005  
 b)  $0.25 = \frac{25}{100} = 25\%$       t)  $0.7 = \frac{7}{10} = \frac{70}{100} = 70\%$   
 j)  $0.55 = \frac{55}{100} = \frac{55}{100} = 55\%$       x)  $0.0005 = \frac{5}{10000} = \frac{0.05}{100} = 0.05\%$

*Xusuus:* U qor boqolleyda laga saaray boqol (Jajab leh hooseeye 100)

(ii) U tibaax boqolleyda soo socda tobanle ahaan:

- b) 45%      t) 35%      j) 4%      x) 9.6%  
 b)  $45\% = \frac{45}{100} = 0.45$       t)  $35\% = \frac{35}{100} = 0.35$   
 j)  $4\% = \frac{4}{100} = 0.04$       x)  $9.6\% = \frac{9.6}{100} = 0.096$

## Layli 8

1. U beddel boqolley:

- a) 0.5      b) 0.1      c) 0.75      d) 0.35      e) 0.2      f) 0.05  
 g) 0.4      h) 0.16      i) 0.004      j) 0.15      k) 0.56      m) 0.003

2. U tibaax tobanleyaal:

- b) 24%      t) 54%      j) 67%      x) 6%      kh) 74%      d) 17%  
 r) 112%      s) 9%      sh) 20%      dh) 25%      c) 1%      g) 80%

## Horsanaanta iyo isbarbardhigidda boqolleyda

### Tusaalooyin:

- (i) Xabiiba waxa ay keentay imtixaankii xissabta 100kiiba 65, carabiga 50kii 30, oo taariikhdana waxa ay ka keentay 20kiiba 20, xabiiibo dhibcaheeda kee ugu wanaagsanaa?

$$\text{Xisaab: } \frac{65}{100} = 65\%$$

$$\text{Carabi: } \frac{30}{50} = \frac{30 \times 2}{50 \times 2} = \frac{60}{100}$$

$$\text{Taariikh: } \frac{10}{20} = \frac{10 \times 5}{20 \times 5} = \frac{50}{100}$$

Xabiiba waxa ay ugu wanaagsaneyd xisaabta

- (ii) kee weyn  $0.87, \frac{3}{5}$  ama 91%?

$$0.87 = \frac{87}{100} = 87\%$$

$$\frac{3}{5} = \frac{3 \times 20}{5 \times 20} = \frac{60}{100} = 60\%$$

Sida awgeed 91% ayaa ugu weyn.

### Layli 9

1. U qor sida ay u kala horreeyaan ka yar ha ugu horreeyo.

b) 50%, 0.6,  $\frac{3}{8}$       t) 75%,  $\frac{4}{5}$ , 0.7      j) 30%,  $\frac{1}{3}$ , 0.3,

x) 0.25,  $\frac{1}{5}$ , 26%      kh)  $\frac{4}{15}$ , 28%, 0.35

2. U habee sida ay u kala baaxad weyn yihiin, midka weyn ha ugu horreeyo.

20%, 30%, 0.3, 33%, 0.12, 0.05,  $\frac{37}{100}$

3. Sahra dhibcaheedu waa saynis 70%, taariikhda 60kii 44, xisaabtana waxa ay keentay 30kiiba 20 kuu ahaa:

b) midda ay ugu dhibco badnayd

t) midka ugu hooseysay

## Xisaabinta boqolleyda

### Tusaalooyin:

- (i) Xisaabi 16% ka 900 litir

$$16\% \text{ ka } 900 \text{ l} = \frac{16}{100} \times 900 \text{ l} = 144 \text{ litir}$$

- (ii) Raadi 20% ka 72 kg

$$20\% \text{ ka } 72 \text{ kg} = \frac{20}{100} \times 72 \text{ kg} = 14.4 \text{ kg}$$

## Layli 10

1. Xisaabi:

- b) 10% ka Sh 800                      t) 15% ka Sh 720              j) 75% ka 80 dhibcood  
 x)  $12 \frac{1}{2}$  % ka 80 maalmood              kh) 5% ka 120 km

2. Xasan waxa uu ku bixiyay 30% mushaarkiisa hurumarinta beertiisa. Mushaarkiisa waxa uu ahaa sh 28800.

- b) Immisa lacag ayaa uu ku bixiyay beerta?  
 t) Immisa lacag ayaa u hartay?

3. Dukaanle ayaa soo gatay 60 kg oo bariis ah, labo maalmood waxa uu iska iibiyay 15 %. Immisa bariis ayaa uu iska iibiyay?

4. Ri' qiimaheedu yahay sh 40 000 ayaa lagu iibiyay faa'iido 20% ah. Raadi faa'iida bollaleyda.

## U tibaaxidda boqolleyda mid kale

### Tusaalooyin:

(i) fasal 48 arday ayaa 32 wiilal ka ah . waa maxay boqolleyda wiilasha?

$$\text{saamiga wiilasha fasalka} = \frac{32}{48}$$

$$\begin{aligned} \text{boqolleyda wiilasha fasalka ku jira} &= \frac{32}{48} \times \frac{100}{100} \\ &= \frac{200}{3} \times \frac{1}{100} \\ &= 66.7\% \end{aligned}$$

(ii) Koox kubbada ayaa cayaartay 25 cayaar waxa ay ku guuleysteen 17 ka mid ah. Waa maxay boqolleyda cayaaraha ay cayaareen kooxda oo ay ku guuleysteen?

$$\text{Saamiga cayaaraha ay guuleysten} = \frac{17}{25}$$

$$\begin{aligned} \text{Boqolleyda cayaaraha ay guuleysteen} &= \frac{17}{25} \times \frac{100}{100} \\ &= \frac{17 \times 4}{100} \\ &= 68\% \end{aligned}$$

## Layli 11

- Sallad 80 ukun ku jirta ayaa waxa jajabay 12 xabbo. Waa maxay bogolleyda jajabay?
- Casiiso waxa ay ingiriiska ka haysataa 68 ka 85.

U qor dhibcaheeda boqolley ahaan

3. Tartan kubbada cagta ayaa xiddigaha mariino waxa ay cayaareen 20 cayaar waxa ayna ka guuldaraysteen 20.
  - b) waa maxay boqolleyda cayaaraha ay ku guul daraysteen?
  - t) waa maxay boqolleyda cayaaraha ay ku guuldaraysteen?
4. Waxa taangi ku jiray 72000 litir oo biyo saafi ah. Biyaha qaar ayaa la isticmaalay, waxaana ku haray 45000 liitr.
  - b) Immisa litir ayaa la isticmaalay?
  - t) Waa maxay boqolleyda biyaha taangiga ee la isticmaalay?
  - j) Waa maxay boqolleyda biyaha haray?
5. Fasal ayaa waxa ku jiray 40 arday. Haddii 25 arday ay maqan yihiin.
  - b) Waa maxay boqolleyda ardayda maqan?
  - t) Waa maxay boqolleyda ardayda fasalka ee Jooga?

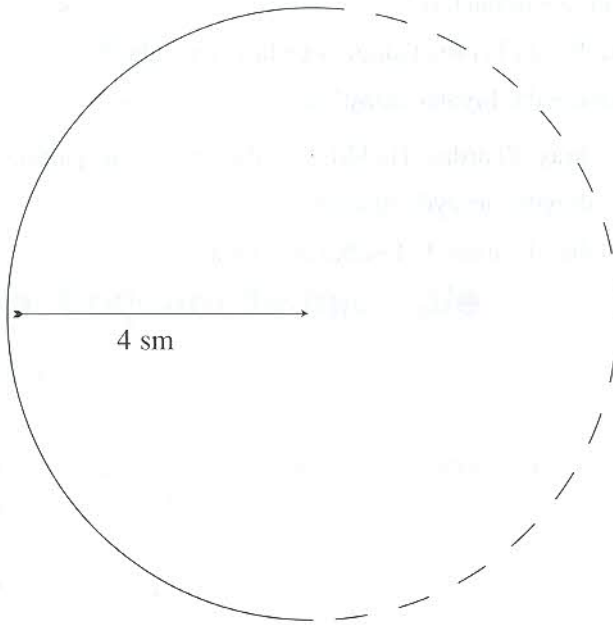


# 6 JOOMETERI

## Goobo

Si loo sawiro goobo gacankeedu yahay 4 sm:

- Fur goobeeyaha oo ka cabbir 4sm mastarada.
- Ku Sawir goobada xuddin kasta.

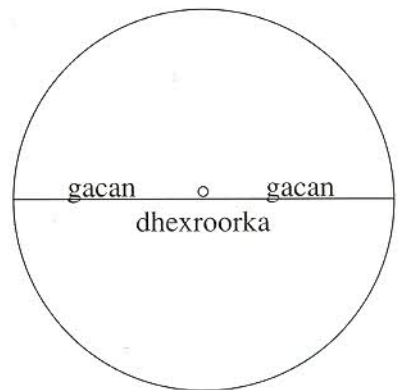


Sida oo kale si loo sawiro qaanso (qayb goobo) waxa la adeegsadaa goobeeye.

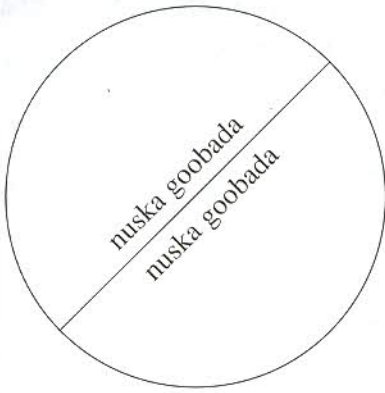
Bartamaha goobo waa **xuddun**, O.

Fogaanta ku xeeran goobada waa **meeris**.

Bar kasta ee ku taal meeriska waxa ay fogaan isle'eg u jirtaa xuddunta. Fogaantan waxa la yiraahdaa **gacan**.



Fogaanta isku xirta laba barood ee meeriska goobada ee dhex marta xuddunta, waa **dhexroorka**. Dhexroorku waa labalaabka goobada. Gacanka waa nuska dhexroorka.



Dhexroorka waxa lagu sawiri karaa meel kasta oo ah gudubka goobada madaama uu marayo xuddunta. Goobada ayaa uu u qaybiyaa labo nus. Nus walba waa nuska goobada.

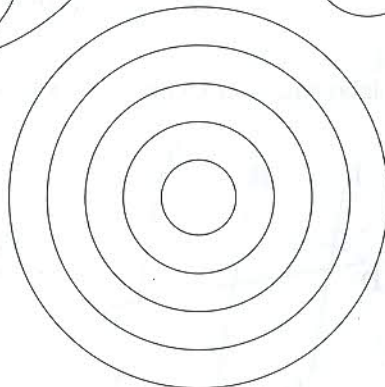
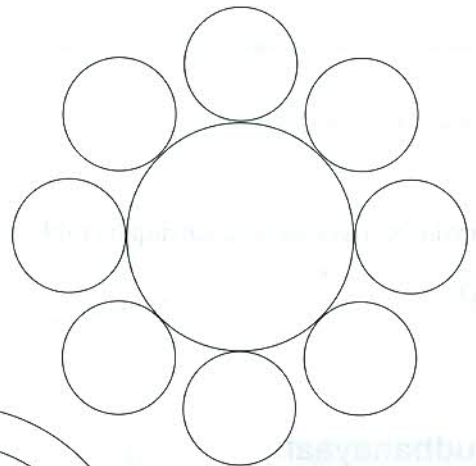
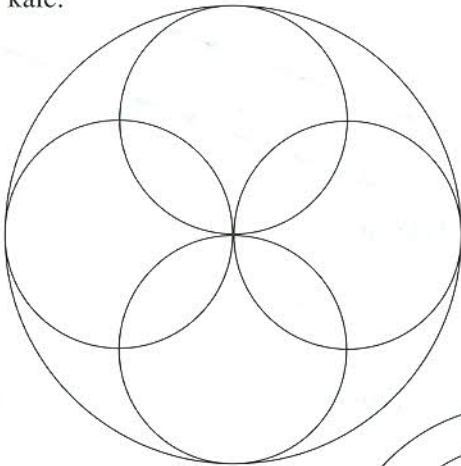
**Layli 1**

1. Sawir goobo leh gacanka :
 

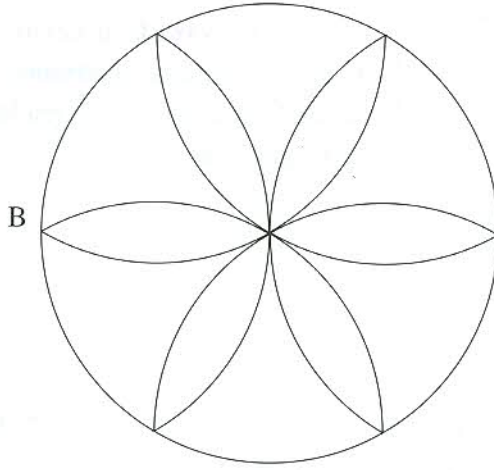
b) 6 sm	t) 4.5 sm	j) 3 sm	x) 3.5 sm	kh) 5 sm
---------	-----------	---------	-----------	----------
2. Waa maxay dhexroorka goobo leh gacanka :
 

b) 9 sm	t) 21 sm	j) 12 sm	x) 6 sm	kh) 8 sm
---------	----------	----------	---------	----------
3. Waa maxay gacanka goobada leh dhexroorka:
 

b) 16 sm	t) 20 sm	j) 32 sm	d) 9 sm	kh) 14 sm
----------	----------	----------	---------	-----------
4. Sawir naqshado leh goobooyin baaxad kala duwan. Min guuri Kuwan ama sameyso kuwo kale.



5. Sawir goobo gacankeedu yahay 4sm oo ka calaamadi barta B meeriska. Saar cirbadda goobeeyahaaga calaamadda oo sawir qaanso, ka jar meeriska labo barood oo kale . ku celceli oo wad ilaa ay naqshaddu ka dhammeystiranto.



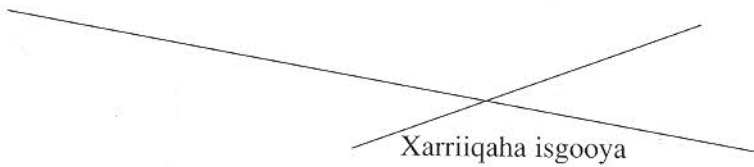
## Xarriiqyo barbarro ah iyo gudbanayaal

**Xarriiqyo barbarro ah:**

- Ma kulmaan ama ma isgooyaan .
- Waxa ay kala fogyhiin qotomayaal isku fogaan ah.
- Waxa lagu muujiyaa hal ama labo fallaar

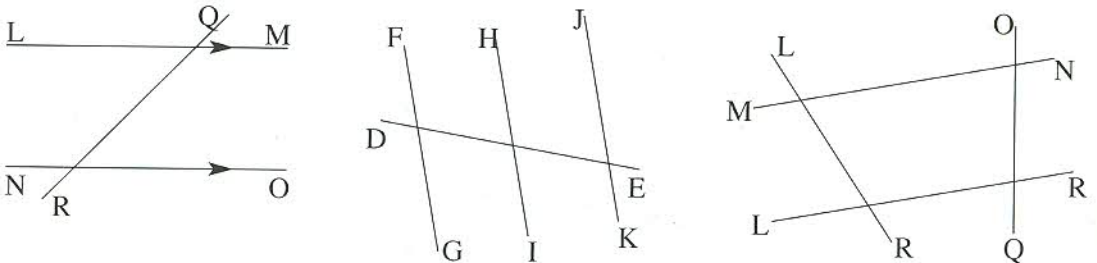


Xarriiqaha isgooya waa xarriiqaha mid walba midda kale jarto.



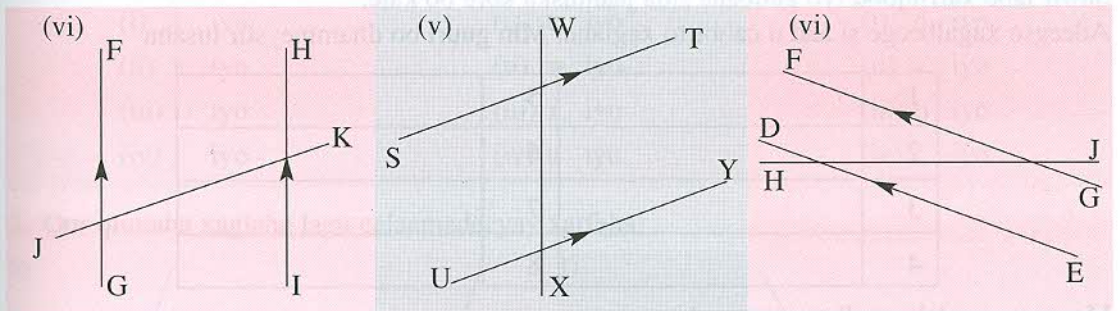
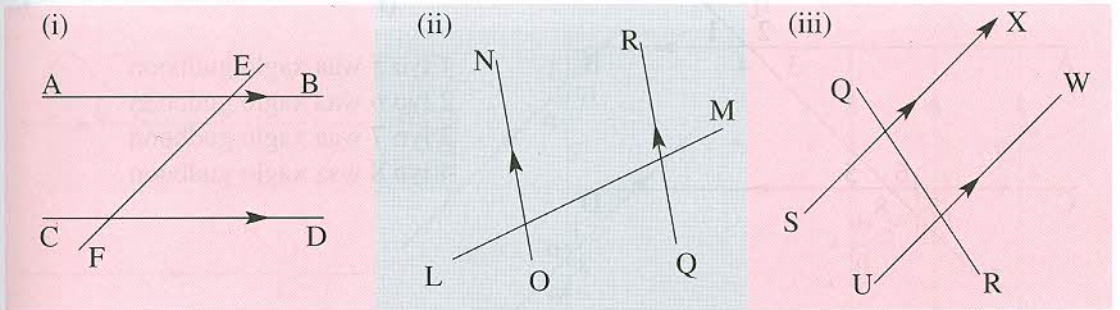
**Gudbanayaal:**

Xarriiqda lagu sawiro gudubka labo ama wax ka badan oo xarriiqyo barbarro ah ayaa waxa la yiraahdda **gudbane**.

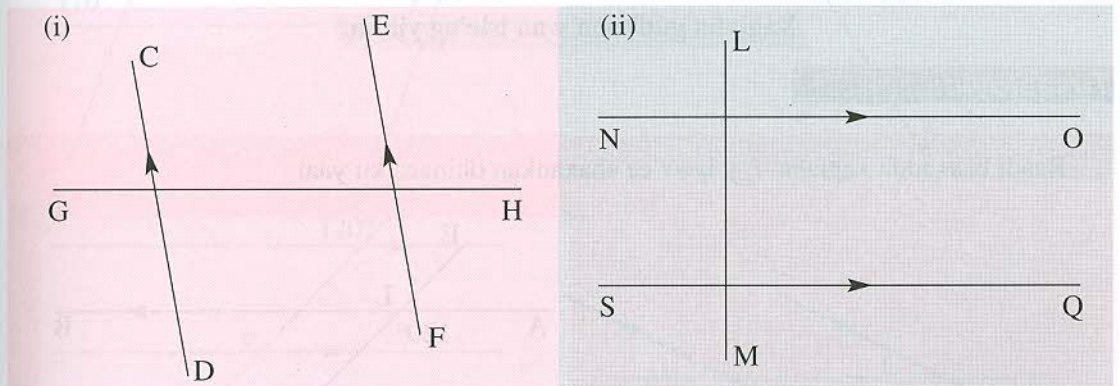


Layli 2

1. Magacaw gudbanayaasha shaxannada (i) ilaa (vi)

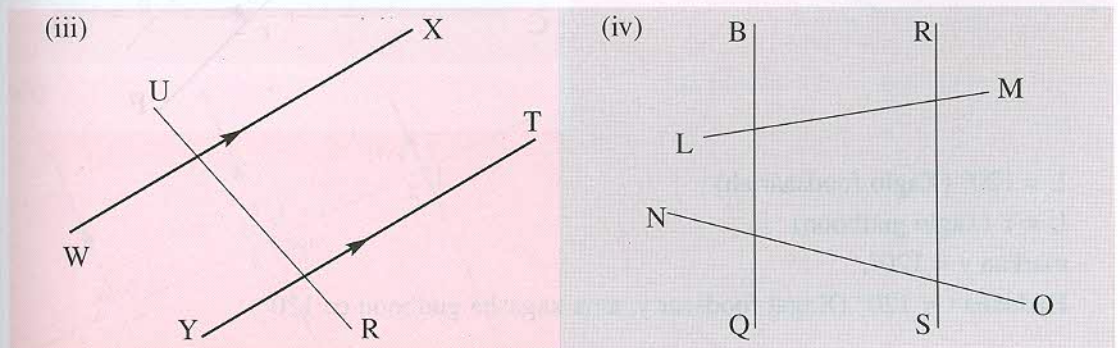


2. Weedhahan soo socda ee shaxannada (i) ilaa (iv) kuwee run ah kuweese been ah?



(i) CD waa gudbane

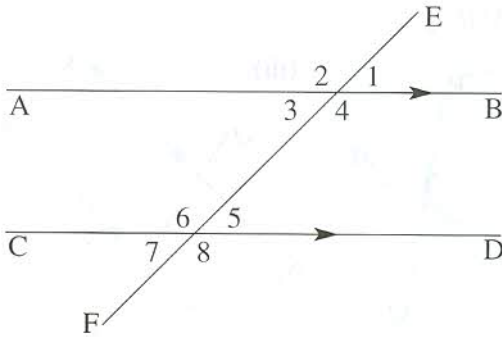
(ii) LM waa gudbane



(iii) UR waa gudbane

(iv) RS waa gudbane

# Xaglo gudboon



- 1 iyo 5 waa xaglo gudboon
- 2 iyo 6 waa xaglo gudboon
- 3 iyo 7 waa xaglo gudboon
- 4 iyo 8 waa xaglo gudboon

Sawir labo xarriiqood iyo gudbane sida jaantuska kore oo kale. Adeegso xagalbeege si aad u cabbirto xaglaha. Min guuri oo dhammeystir tusaha

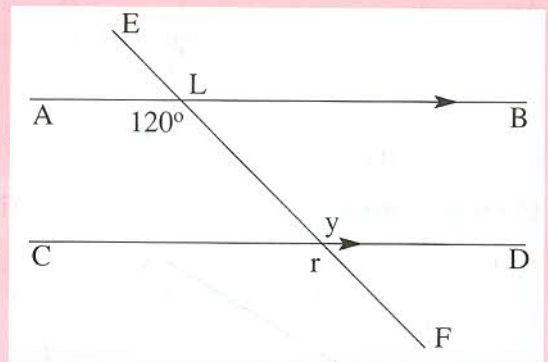
1		5	
2		6	
3		7	
4		8	

Magacaw xaglaha gudboon ee tusaha. Maxa aa ka ogaatay qiimaha xaglaha gudboon

## Xaglaha gudboon waa isle'eg yihiin.

### Tusaaloyin:

Raadi baaxadda xaglaha  $l$ ,  $y$  iyo  $r$  ee shaxankan dhinaca ku yaal



$L = 120^\circ$  (Xaglo foodsaar ah)

$L = Y$  (xaglo gudboon)

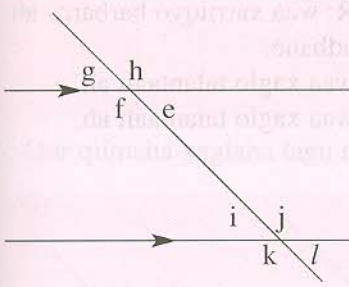
markaa  $y = 120^\circ$ ,

Haddaba  $r = 120^\circ$  (Xaglo foodsaar  $y$ , ama xagasha gudboon ee  $120^\circ$ )

Layli 3

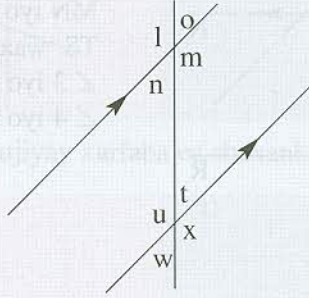
1. Sheeg oo magacaw xaglaha gudboon adiga oo dhammaystiraya hawraarahan:

b)



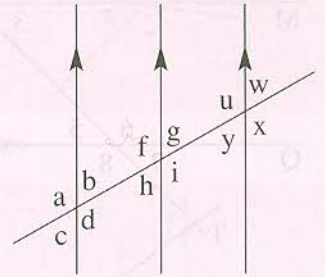
- (i) i iyo
- (ii) k iyo
- (iii) l iyo
- (iv) j iyo

t)



- (i) t iyo
- (ii) w iyo
- (iii) x iyo
- (iv) u iyo

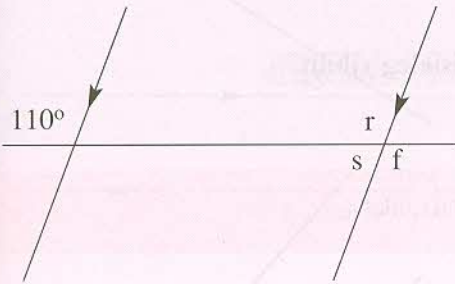
j)



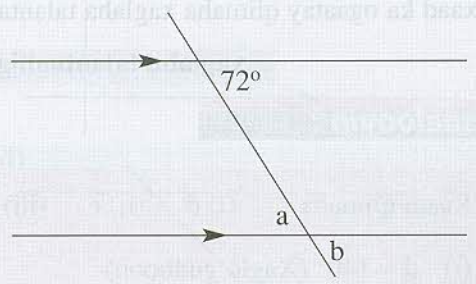
- (i) d iyo
- (ii) a iyo
- (iii) b iyo
- (iv) c iyo

2. Qor qiimaha xaglaha lagu calaamadeeyay xarfaha:

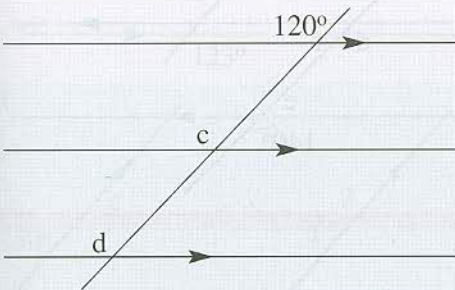
b)



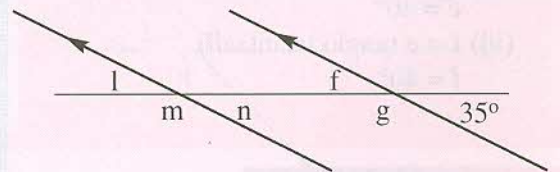
t)



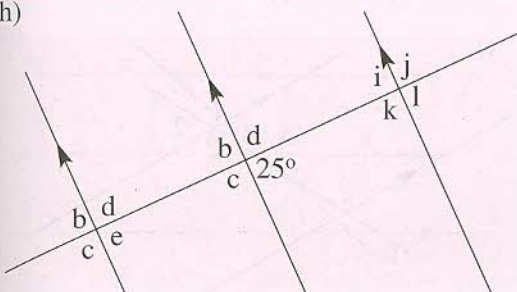
j)



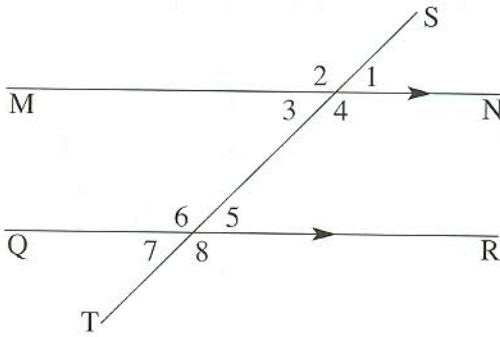
x)



kh)



# Xaglo talantaali ah



MN iyo QR waa xarriiqyo barbarro ah.  
 TS waa gudbane.  
 $\angle 3$  iyo  $5$  waa xaglo talantaali ah.  
 $\angle 4$  iyo  $6$  waa xaglo talantaali ah.

Sawir jaantus ballaaran sida kan kore oo kale. Min guuri oo dhammeystir tusaha. Adeegso xagalbeege si aad u cabbirto xaglaha.

3		7	
4		8	

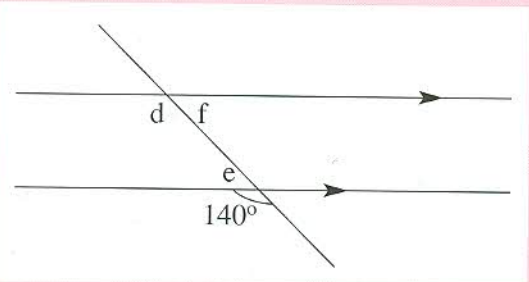
Magacaw xaglaha talantaaliga ah ee tusaha.  
 Maxaad ka ogaatay qiimaha xaglaha talantaaliga.

**xaglaha talantaalliga waa isle'eg yihiin.**

## Tusaalooyin :

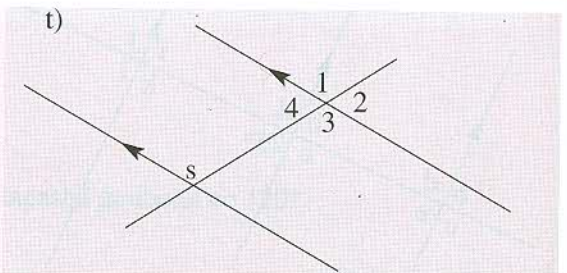
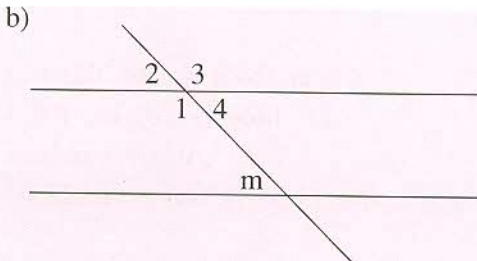
Raadi qiimaha (i) d (ii) e (iii) f ee shaxanka.

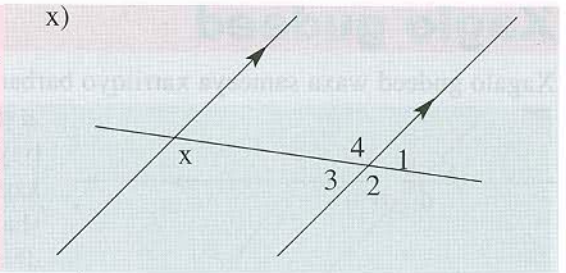
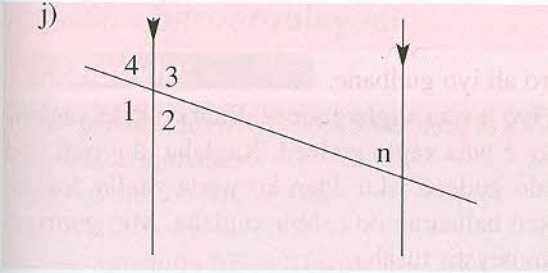
- (i)  $d = 140^\circ$  (Xaglo gudboon)
- (ii)  $e + 140^\circ = 180^\circ$  (xaglo isdhammeystara)  
 $e + 140^\circ - 140^\circ = 180^\circ - 140^\circ$   
 $e = 40^\circ$
- (iii)  $f = e$  (xaglo talantaali)  
 $f = 40^\circ$



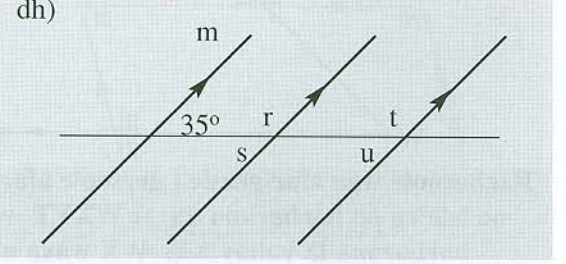
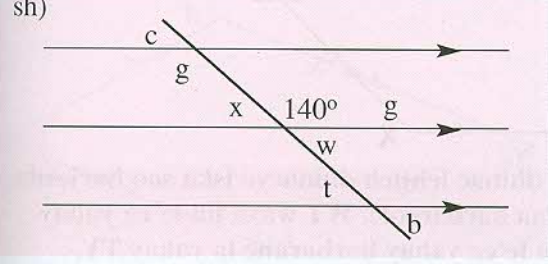
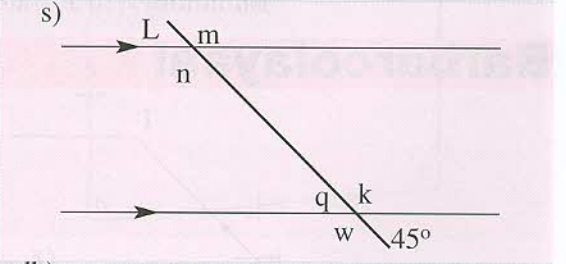
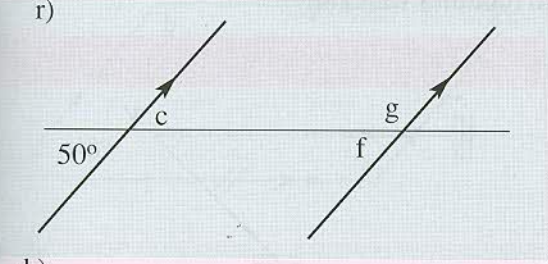
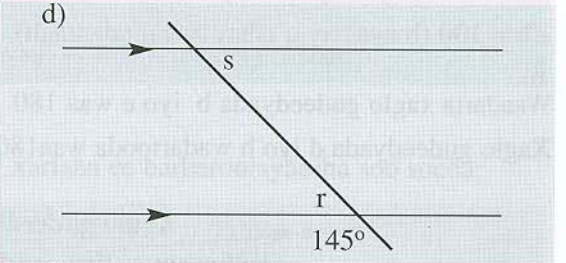
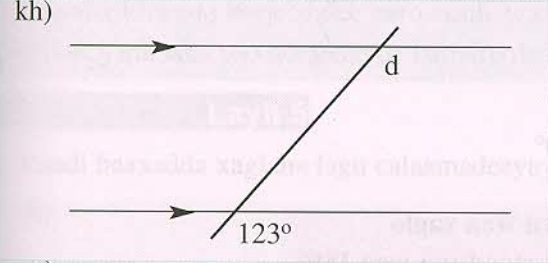
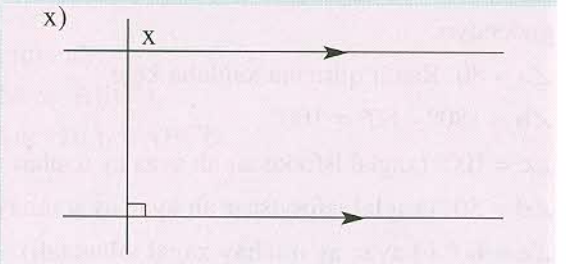
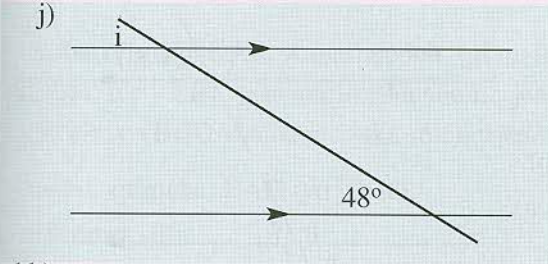
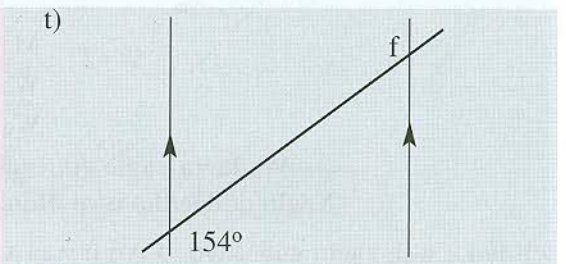
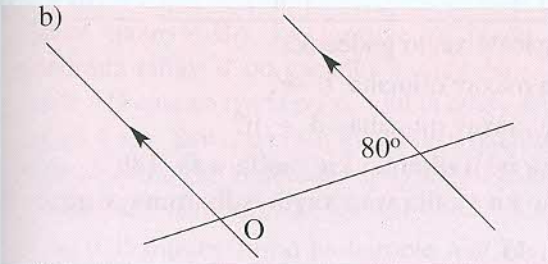
## Layli 4

1. Qor tirada xaglaha talantaaliga ah:





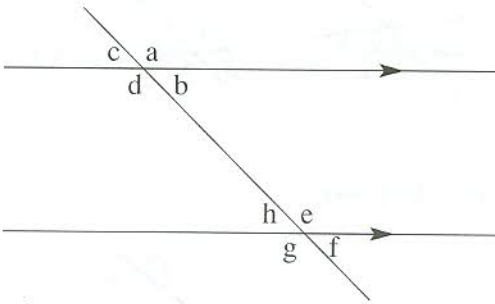
2. Qor qiimaha xaglaha lagu muujiyay xarfaha ee shaxanka hoose:





# Xaglo gudeed

Xagalo gudeed waxa sameeya xarriiqyo barbarro ah iyo gudbane.



$\angle d$  iyo  $h$  waa xaglo gudeed. Sida oo kale xaglaha  $b$  iyo  $e$  waa xaglo gudeed. Xaglaha  $d$  iyo  $h$  waa xagalo gudeed isku dhan ku wada yaalla. Samee shaxan ballaaran oo cabbir xaglaha. Min guuri oo dhammeystir tusaha.

b		e	
d		h	

Magacaw xaglo gudeedka .

Waa maxay qiimaha  $b + e$ ?

Waa maxay qiimaha  $d + h$ ?

**Wadarta xaglo gudeedka isku dhanka ku yaalla waa  $180^\circ$ .  
Xaglo gudeedka isku dhinac ku yaalla waa xaglo isdhammeystira.**

$\angle b$  iyo  $e$  waa xaglo gudeedyo,  $d$  iyo  $h$  waa xaglo gudeedyo.

$\angle a = 80$ . Raadi qiimaha xaglaha kale.

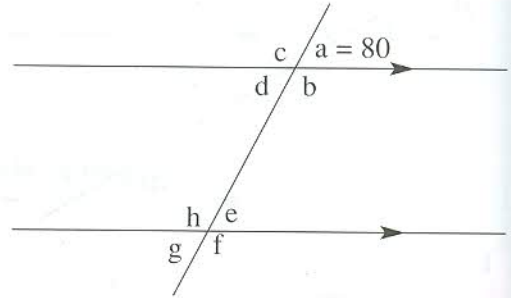
$\angle b = 180^\circ - 80^\circ = 100^\circ$ .

$\angle c = 100^\circ$  (xaglal isfoodsaar ah ayaa ay u tahay  $b$ ).

$\angle d = 80^\circ$  (xaglal isfoodsaar ah ayaa ay u tahay  $a$ ).

$\angle e = 80^\circ$  ( $d$  ayaa ay u tahay xagal talantaali).

$\angle h = 100$  ( $b$  ayaa ay u tahay xagal talantaali).

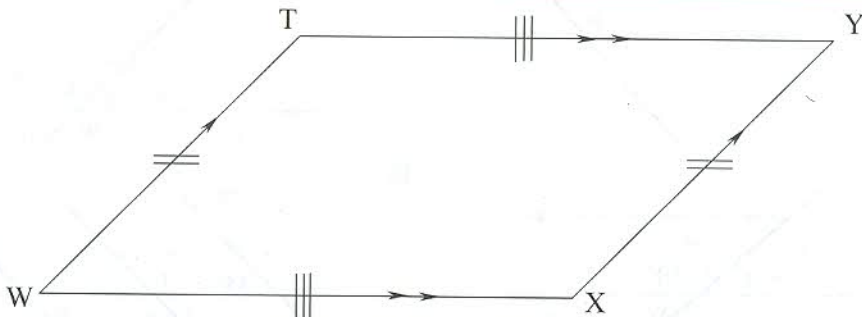


Waadarta xaglo gudeedyada  $b$  iyo  $e$  waa  $180$

Xaglo gudeedyada  $d$  iyo  $h$  wadartooda waa  $180^\circ$

**Xaglo gudeedka waa xaglo isdhammeystira, wadartooduna waa  $180^\circ$**

# Barbaroolayaal



**Barbaroole waa afar-geesle ( geesoole afar dhinac leh)leh dhinacyo iska soo horjeeda oo isle'eg oo barbarana ah .. WXYT waa barbaroole. WT waxa uu le'eg yahay barbarana la yahay XY. WX waxa uu le'eg yahay barbarane la yahay TY.**

### Dhisidda barbaroolayaal

#### Tusaalooyin:

Dhis barbaroole ABCD oo AB barbarro la ah DC.

Sawir xarriijimaha:

AB = 3 sm, oo BC = 4 sm

oo  $\angle ABC = 55^\circ$

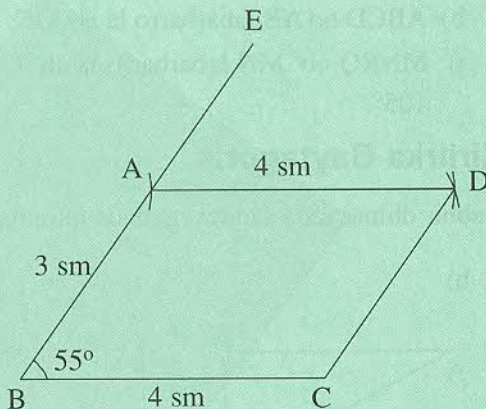
Sawir xarriiqda BE = 10 sm.

Iyada oo la adeegsanayo xagal-beege, sawir

$\angle CBE = 55^\circ$

Sawir qaanso BA ka jareysa A iyada oo xuddunta tahay B oo gacanka t ahay 3sm. Ku sawir AD qaanso iyada oo xuddubta tahay A iyo gacan 4 sm. Sawir qaanso ka jaraysa qaansadii hore D iyada oo xuddunta tahay C gacankuna yahay 3 sm isku xir CD iyo AD

Si uu u dhammeystirmo barbaroole ABCD.



Cabbir qiimaha DAE. Xagashee leh qiime la mid ah?

$\angle ABC$  iyo  $\angle ADC$  waa xaglo iska soo horjeeda ee ABCD.

$\angle BAD$  iyo  $\angle BCD$  waa xaglo iska soo horjeeda ee ku jira ABCD.

Cabbir qiimaha  $\angle BAD$  iyo  $\angle BCD$ .

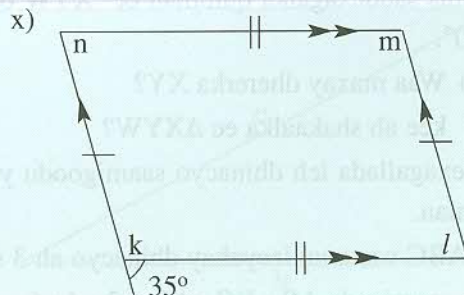
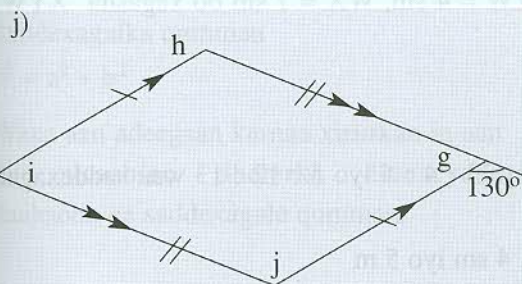
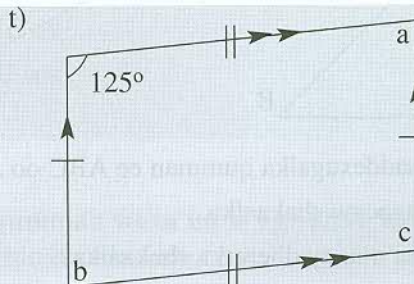
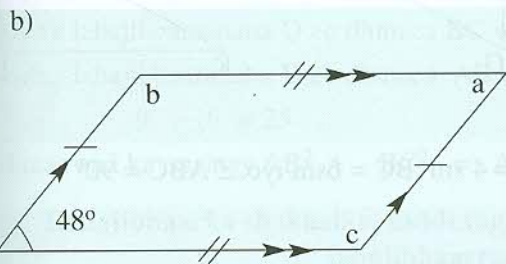
Dhammeystir:

Xaglaha iska soo horjeeda ee barbaroole waa ----- .

Dhinacyada iska soo horjeeda ee barbaroole waa ----- waana barbarro.

#### Layli 5

1. Raadi baaxadda xaglaha lagu calaamadeeyay xarfaha ee barbaroolayaasha soo socda:

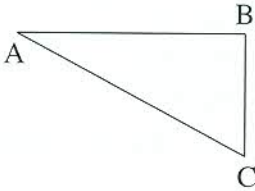


2. Dhis barbaroolaha BQRS oo BQ la barbaro ah SR;  $BQ = 4$  sm,  $QR = 5.5$  sm. Adeegso xagal-beege si loo sameeyo  $\angle BQR = 45^\circ$ .
3. Adiga oo adeegsanaya mastaro iyo goobeeye oo keliya dhis .
  - b) ABCD oo AB labarbarro la ah DC; xarriiqda  $AB = 5$  sm,  $BC = 6$  sm iyo  $\angle ABC = 60^\circ$ .
  - t) MNRQ oo MN labarbarro la ah QR; xarriiqda  $MN = 3$  sm,  $NR = 5$  sm iyo  $\angle NRQ = 105^\circ$ .

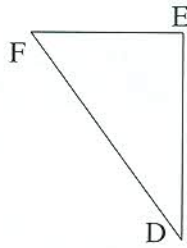
### Xiriirka Baytagoris

Cabbir dhinacyada saddexagallada qumman ee hoose. Dhinacee ugu dheer saddexagal kasta?

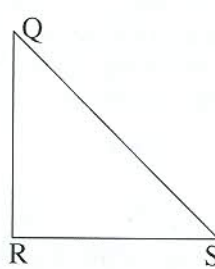
b)



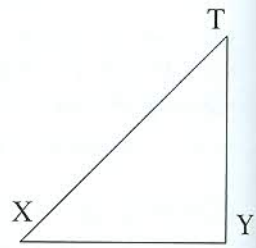
t)



j)



x)

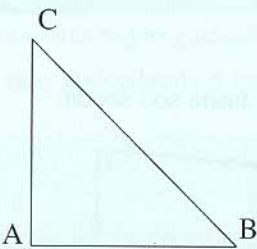


Dhinaca ugu dheer ee saddexagale qumman waxa lagu magacaabaa shakaal. Shakaalka had iyo jeer waxa uu ka soo horjeedaa xagasha qumman.

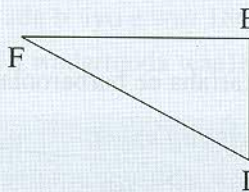
### Layli 6

1. Magacaw shakaalka shaxannada soo socda.

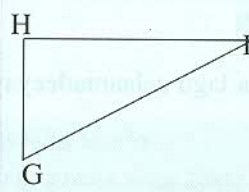
b)



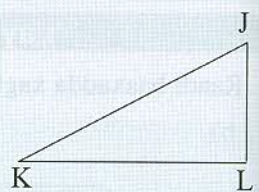
t)



j)



x)

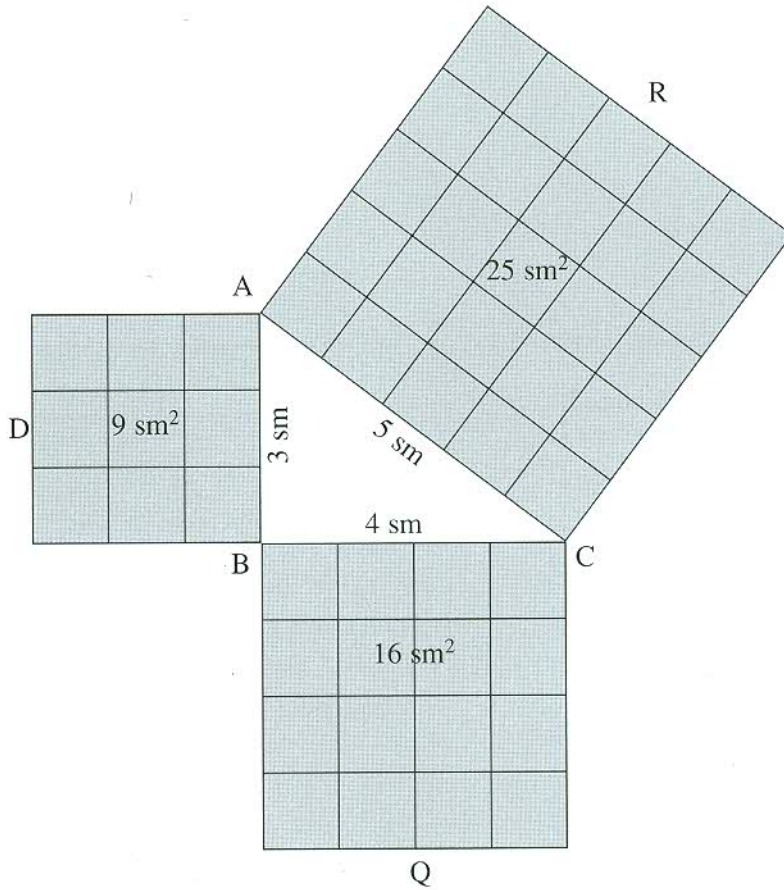


2. Dhis saddexagalka qumman ee ABC oo  $AB = 4$  sm,  $BC = 6$  sm iyo  $\angle ABC = 90^\circ$ 
  - b) Magacaw shakaalka.
  - t) Waa maxay dhererka shakaalka?
3. Dhis saddexagalka qumman ee XYW oo  $YW = 4$  sm,  $WX = 7$  sm oo xagasha  $\angle XYW = 90^\circ$ .
  - b) Waa maxay dhererka XY?
  - t) kee ah shakaalka ee  $\triangle XYW$ ?

Saddexagallada leh dhinacyo saamigoodu yahay  $3 : 4 : 5$  iyo  $5 : 12 : 13$  waa saddexagal qumman.

$\triangle ABC$  waxa uu leeyahay dhinacyo ah 3 sm, 4 sm iyo 5 m ee saamiyada  $AB : BC : AC = 3 : 4 : 5$

Saddexagal leh dhinacyo saamigooda yahay 3 : 4 : 5 waa saddexagale qumman.



Bedka labajibbaaranaha R ee shakaalka AC waa  $25 \text{ sm}^2$

Bedka labajibbaaranaha Q ee dhinaca BC waa  $16 \text{ sm}^2$

Bedka labajibbaaranaha D ee dhinaca AB waa  $9 \text{ sm}^2$

$$9 + 16 = 25$$

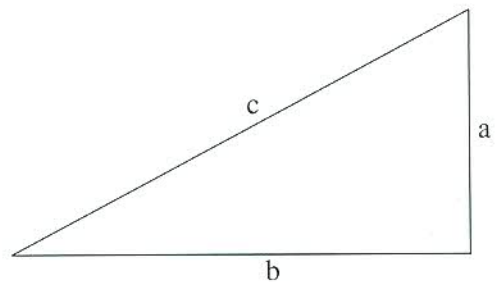
Maxaa aad ka ogaatay  $AB^2 + BC^2 = AC^2$ ?

**Labajibbaarka shakaalka, saddexagale qumman waxa uu le'eg yahay wadarta labajibbaarrada dhinacyada kale.**

Saddexagalka qumman

$$c^2 = a^2 + b^2$$

Waxa aan adeegsan karnaa xiriirkan in aan ku xisaabino dhererka dhinacyada daahsoon ee saddexagale qumman.

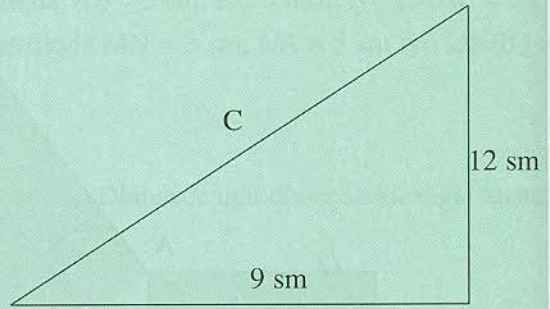


Tusaalooyin:

- (i) Xisaabi dhererka shakaalka saddexagalka hoos ku muujisan.

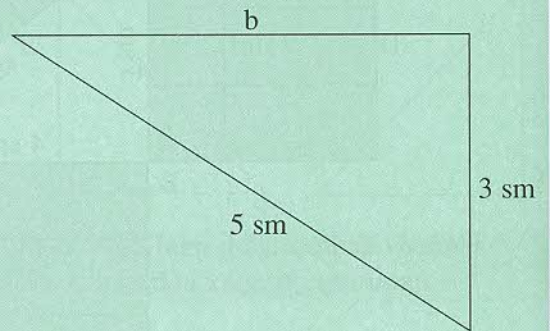
$$\begin{aligned}
 c^2 &= a^2 + b^2 \\
 &= 9^2 + 12^2 \\
 &= 81 + 144 \\
 &= 225 \\
 c &= \sqrt{225} \\
 c &= 15 \text{ sm.}
 \end{aligned}$$

Dhererka shakaalka waa 15 sm



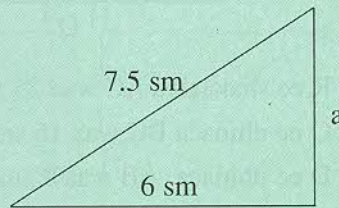
- (ii) Xisaabi dhererka dhinaca b

$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 3^2 + b^2 &= 5^2 \\
 9 + b^2 &= 25 \\
 9 \text{ ka goo labada dhinac} \\
 b^2 &= 25 - 9 = 16 \\
 b &= \sqrt{16} = 4
 \end{aligned}$$



- (iii) Xisaabi dhererka dhinaca a

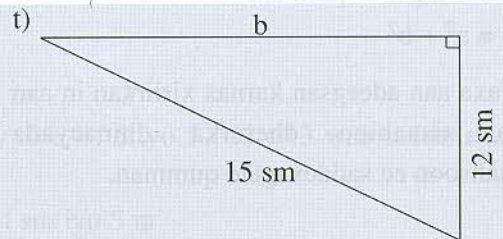
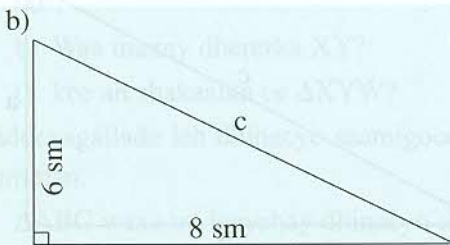
$$\begin{aligned}
 a^2 + b^2 &= c^2 \\
 a^2 + 6^2 &= 7.5^2 \\
 a^2 + 36 &= 56.25 \\
 36 \text{ ka goo labada dhinac} \\
 a^2 &= 56.25 - 36 = 20.25 \\
 a^2 &= 20.25 \\
 a^2 &= \sqrt{3 \times 3 \times 3 \times 3 \times 0.5 \times 0.5} \\
 a &= 3 \times 3 \times 0.5 \\
 a &= 4.5 \text{ sm}
 \end{aligned}$$

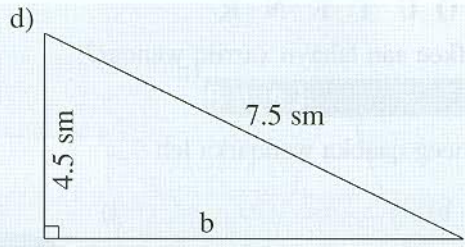
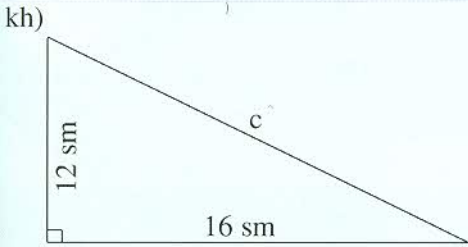
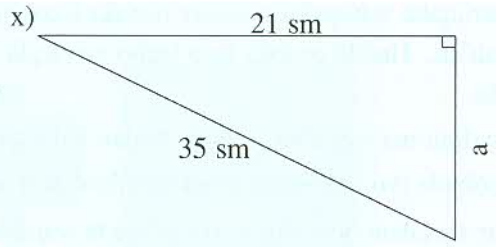
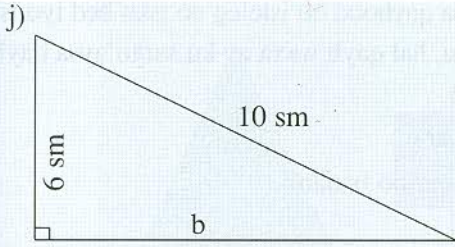


3	20.25
3	6.75
3	2.25
3	0.75
0.5	0.25
0.5	0.5

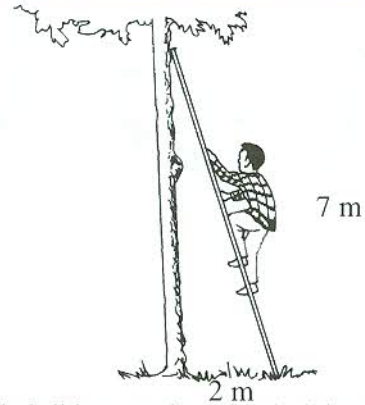
Layli 7

1. Raadi dhererka dhinacyada lagu calaamadeeyay xarafka





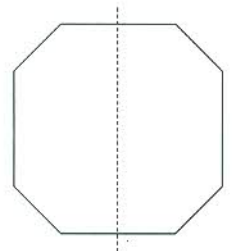
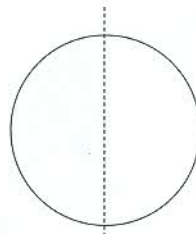
2. Xuseen si uu u koro geed waxa uu adeegsaday sallaan. Sallaanka xagiisa hoose waxa uu geedka ka fog yahay 2 m. Sallaanka waxa uu geedka ka taabanaya joog ah 7 m. Waa immisa dhererka sallaanka?



3. Xaglo gooyayaasha laydi waa 35 sm midkii. Haddii hal dhinac oo ka mid ah dhinacyadu yahay 21 sm, waa maxay dhererka dhinaca kale.
4. Si loo dayactiro dusha sare ee dhisme bakhaar ah ayaa waxa loo baahday sallaan 16 m ah. Sallaanku waxa uu dhulka ka sarreeyaa 15 m. Immisa ayaa cag dhigga sallaanku ka fog yahay derbiga?

## Wanqar

Xariiqaha dhibcaha ah waa xarriiqaha wanqarka ee qaababkan



Xarriiqaha wanqarku waxa ay qaabka u qaybiyaan laba qaybood oo isle'eg oo isku bed iyo isku qaab ah. Haddii qaabka laga laabo xarriiqda wanqarka, hal qayb waxa ay ku sargo'aysa qaybta kale.

Laydigu ma leeyahay wax ka badan hal xarriiq wanqar?

Goobada iyo lixgeesluhu ma leeyihiin xarriiqyo wanqar oo badan?

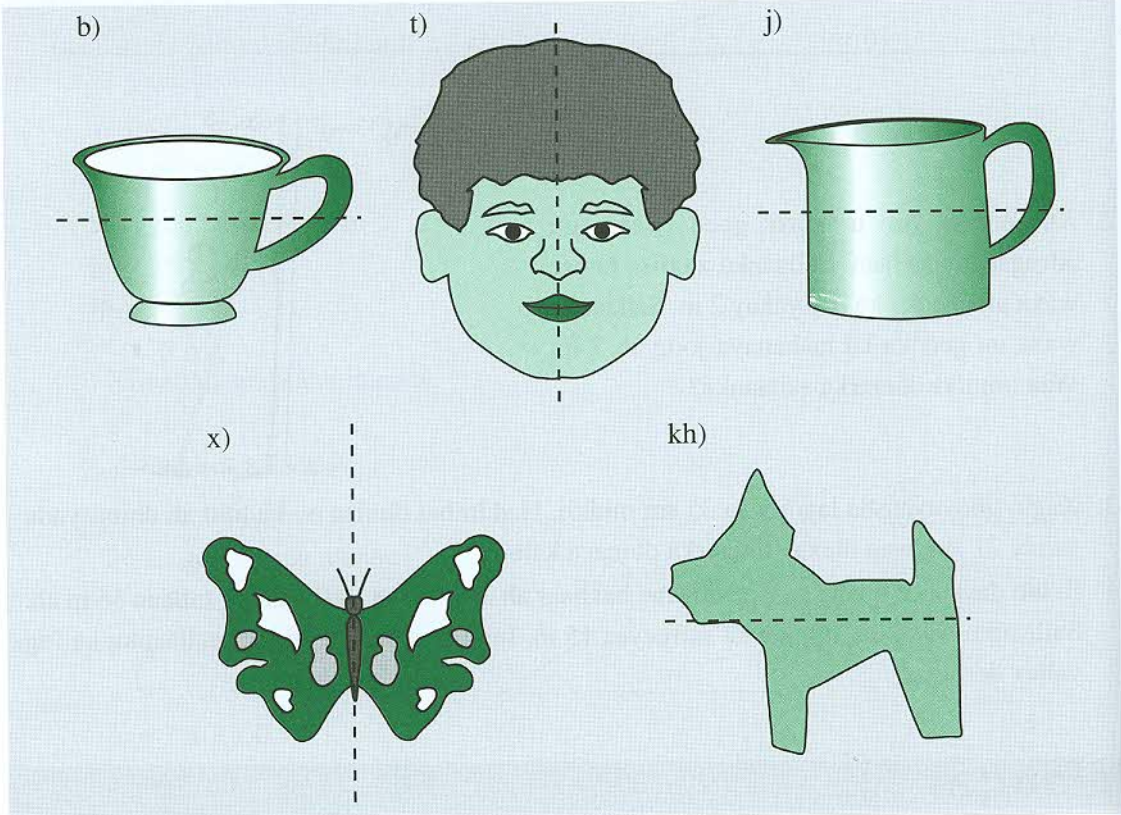
Qor xarfahan oo sawir xarriiqahooda wanqarka.

## AVOUTENR

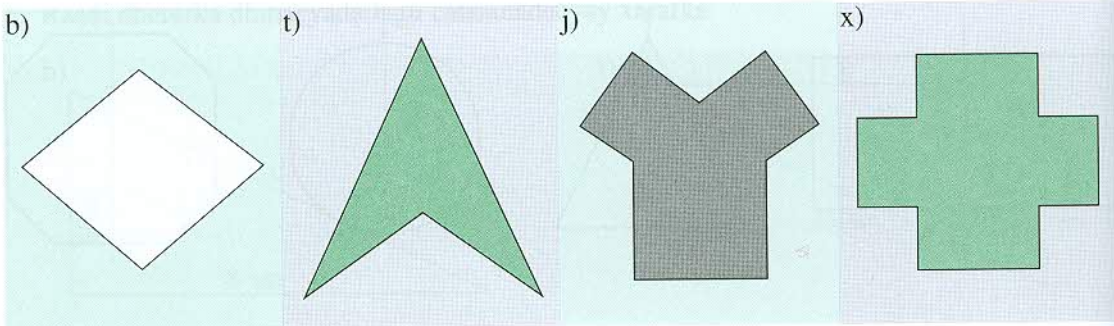
Xarafkee aan lahayn xarriiq wanqar?

### Layli 8

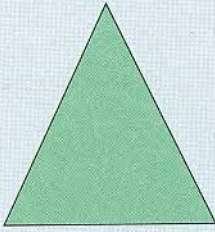
1. Sheeg qaabka wanqarka leh



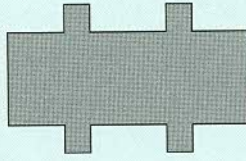
2. Min guuri shaxannadan. Sawir xarriiqaha wanqarka ee qaab kasta.



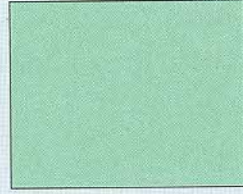
kh)



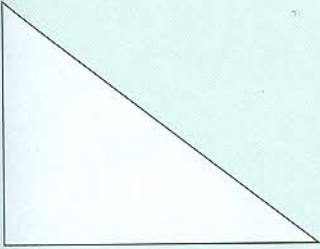
d)



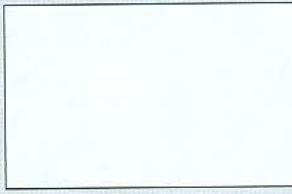
r)



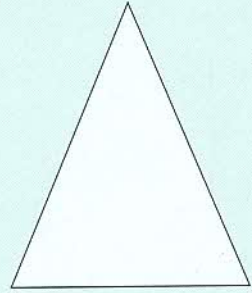
s)



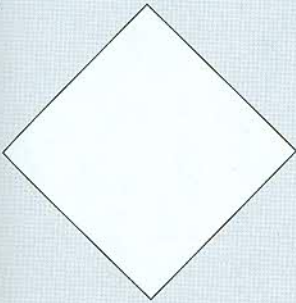
sh)



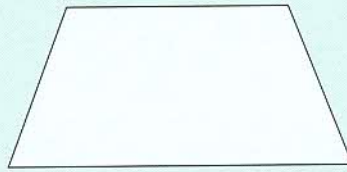
dh)



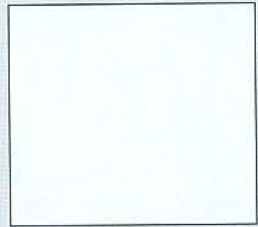
c)



g)



f)



**Tusaalooyin:**

(i)  $A(1,1)$ ,  $B(5,1)$  iyo  $C(3,7)$

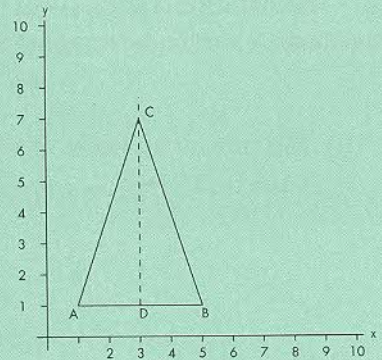
Bardhig baraha adiga oo adeegsanaya kullannada-  
 $x - y$ .

Isku xir baraha oo sawir xarriiqada  $CD$  oo dhibco  
ah. Ka dibna ka jawaab su'aalaha soo socda.

b) qaabkee aad heshay?

t) Haddii aad isku laabto xarriiqda dhibcaysan,  
Maxa aad ogaanaysa?

j)  $CD$  waa xarriiqda wanqarka ee  $\Delta ABC$ .



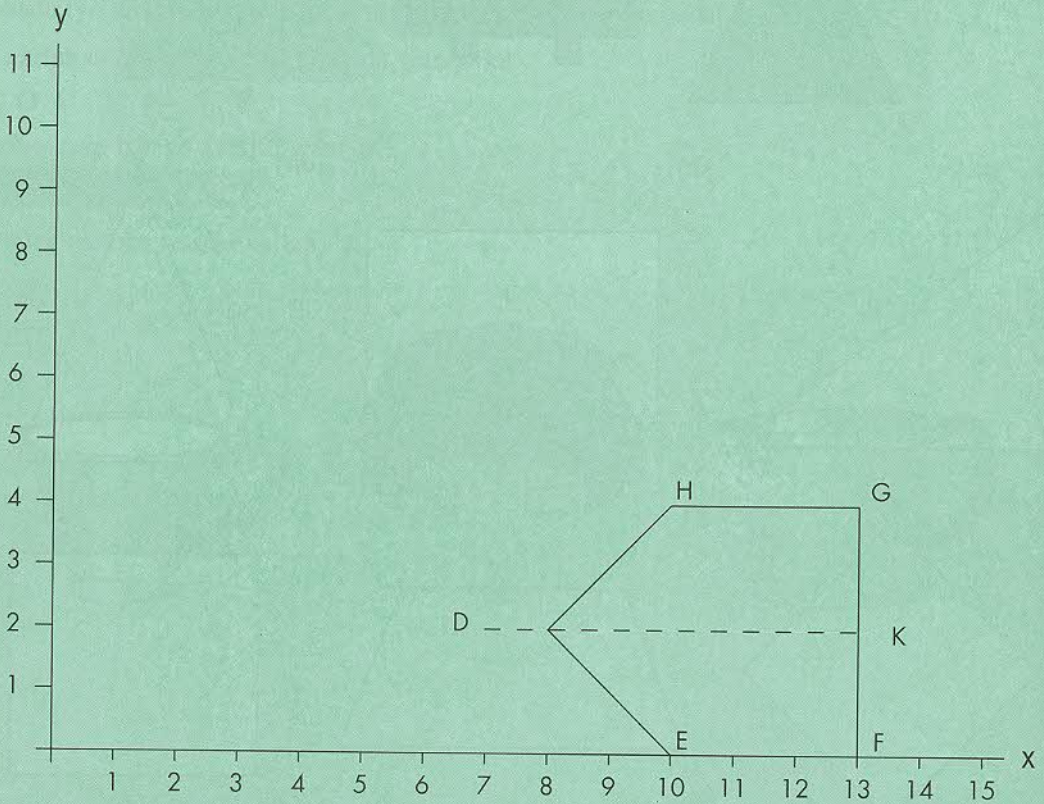
Marka aan isku xirno baraha, waxa aan helaynaa saddexagal. Haddii aad qaabka ka  
laabto xarriiqda, waxa aad arkaysa in barta B ay dul fuulayso barta A. Xarriiqda  
dhibcaysan waxa gobolka saddexagalka u qaybinaysa labo gobol oo saddexagal ah oo  
isku sargo'an.



Bardhig barahan adiga oo adeegsanaya kullannada-  $x - y$  .

$D(8,2)$ ,  $E(10,0)$ ,  $F(13,0)$ ,  $G(13,4)$  iyo  $H(10,4)$

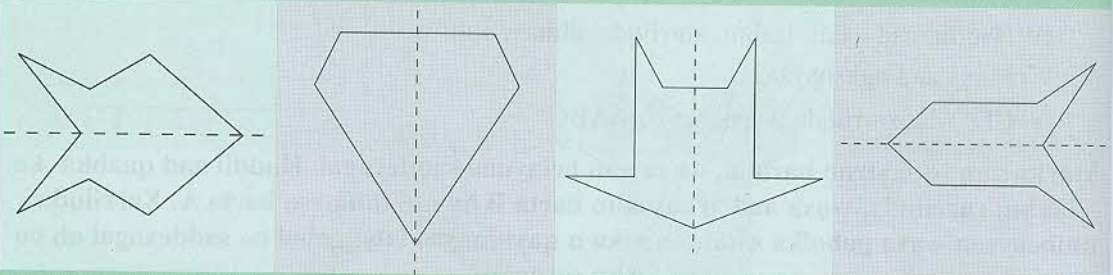
Isku xir baraha. Ka laab qaabka xarriiqda dhibcahsan. Maxa aad ka ogaaneysa?



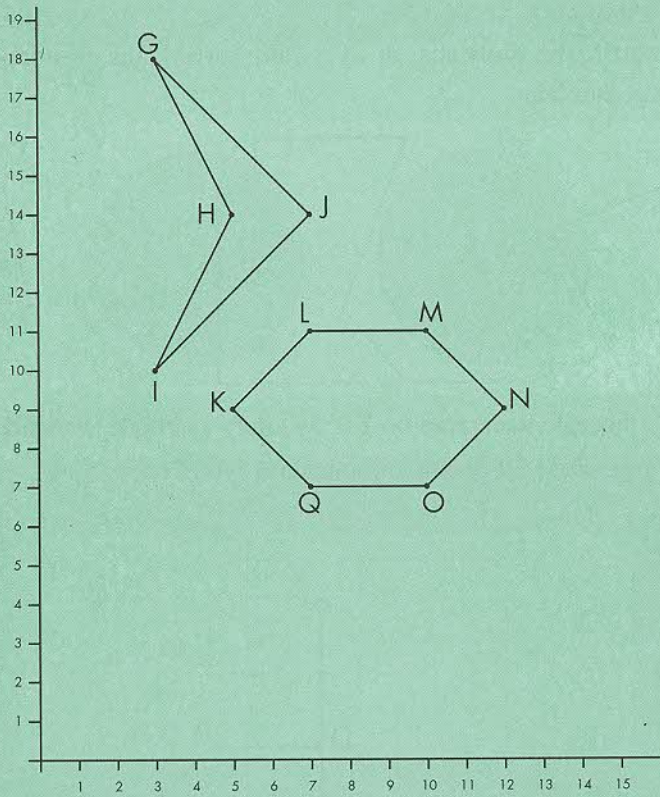
Waxa aad ogaaneysaa in xarriiqda dhibcaha ah ay qaabka u qaybinayso laba qaab oo isku sargo'an.

**Haddaba, xarriiqda u qaybinaysa qaab labo qaab oo isku sargo'an waxa lagu magacaabaa xarriiqda wanqarka. Qaabkana waxa la yiraahdaa waa uu wanqaran yahay.**

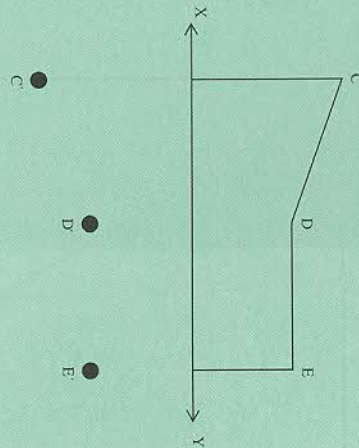
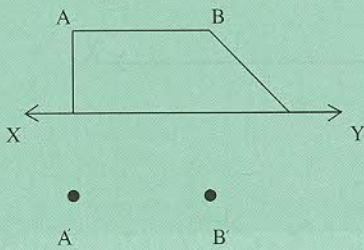
(ii) Ma wanqaran yihiin qaababkan? Haddii aad ka laabto xarriiqda dhibcaha ah, mid kasta oo ka mid ah waxa aad helaysa qaabab isku sargo'an.



- (iii) (b) sheeg geesaha labada geesoole ee soo socda.
- (t) Sawir xarriiqda wanqarka ee geesoole kasta.



- (iv) Ka soo qaad in  $xy$  ay tahay xarriiqda wanqarka. Dhammeystir mid kasta oo ka mid ah qaababka soo socda.

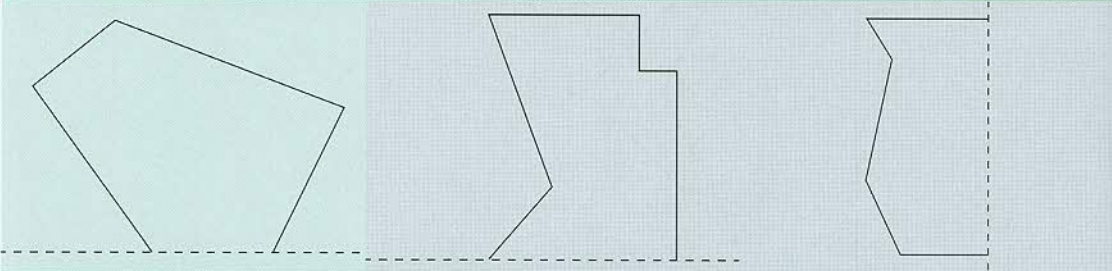


Shaxanka (b)  $xy$  waa xarriiqda wanqarka. Haddii aad qaabka ka laabto  $xy$ , barta A waxa ay ku dul dhacaysa A, barta B -na waxa ay ku dul dhacaysa B ee dhinaca kale ee  $xy$

Barta A iyo  $\bar{A}$  waxa ay in isle'eg u jiraan  $xy$ , sida oo kale B iyo  $\bar{B}$  waxa ay in isle'eg u jiraan  $xy$ . Hadda, Dhammeystir qaabka (b), kaas oo ah  $ABY B \bar{A} X$ .

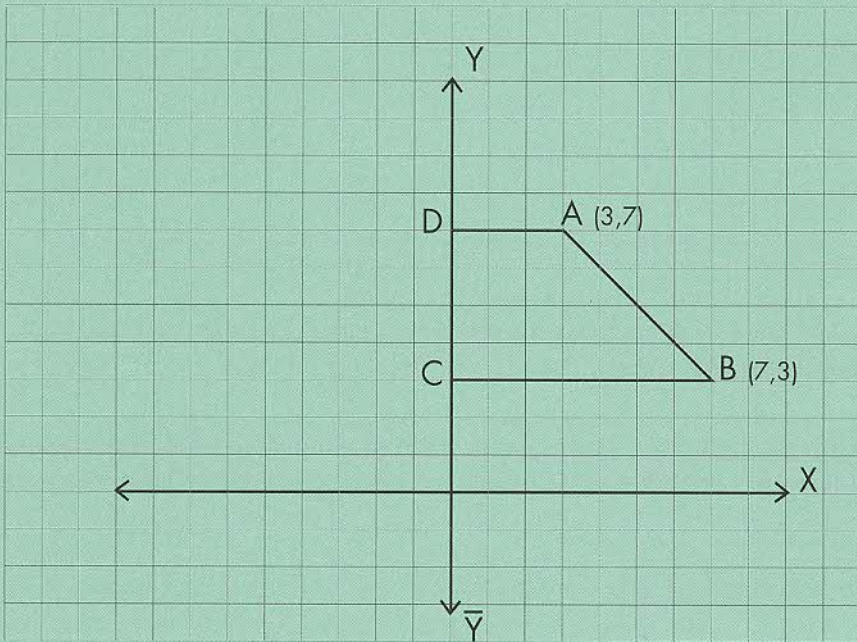
Sida kale sheeg barta  $\bar{C}$ ,  $\bar{D}$  iyo  $\bar{E}$  ka dibna dhammaystir qaabka (b) adiga oo raacaya isla tallaabooyinka qaabka (a).

(v) U qaado in xarriiqaha dhibcaha ah ay yihiin xarriiqdaha wanqarka, min guuri oo dhammeystir geesoolaha.



vi)  $AB \bar{A} \bar{B}$  waa afageesle wanqaran oo  $Y \bar{Y}$  ay tahay xarriiqda wanqarka.

Haddii  $A(3,7)$  iyo  $B(7,3)$ : Sheeg kullannada  $\bar{A}$  iyo  $\bar{B}$ .

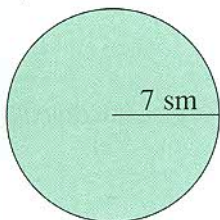


# 7 DHERER IYO BED

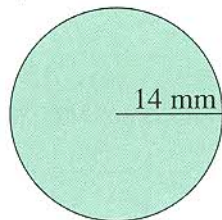
## Naqtiin

1. Xisaabi meeriska goobooyinkan.

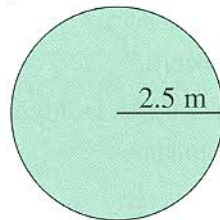
b)



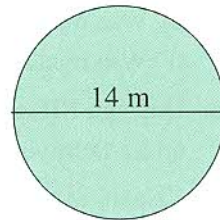
t)



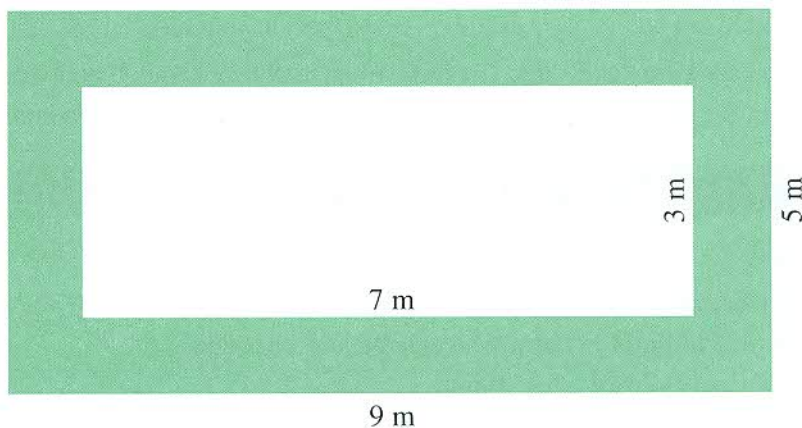
j)



x)

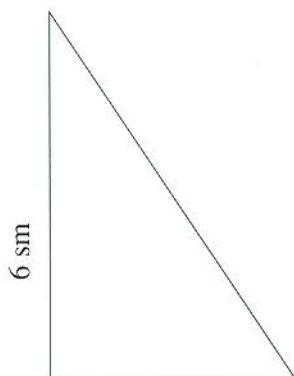


2. Xisaabi bedka gobolka xardhan.

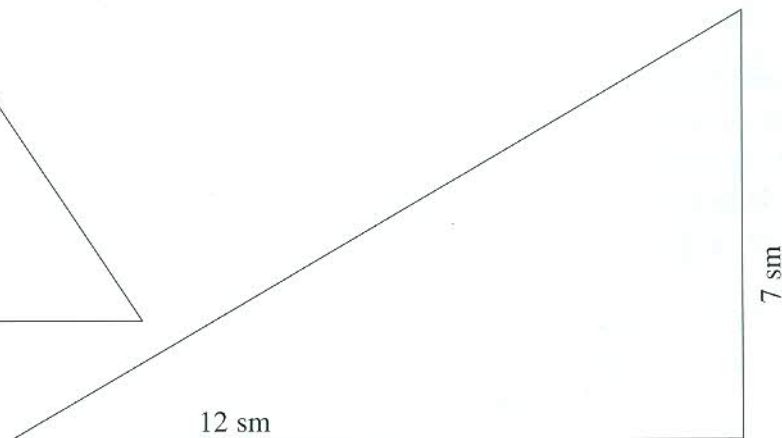


3. Xisaabi bedka saddexagalladan.

b)



t)



4. Xisaabi bedka saddexagallada leh cabbiraadaha soo socda.

b) sal 5 sm, joog ku qotoma 8sm	t) sal 16sm, joog ku qotoma 12 sm
j) sal 17sm, joog ku qotoma 14 sm	x) sal 24sm, joog ku qotoma 18sm

5. Beer laydi ah ayaa cabbirkeedu yahay 20m iyo 16m.

b) Waa maxay wareegga beertu?

t) Waa maxay bedka beertu?

6. Dugsiga Bilaal cabbirka uu ku fadhiyo waa 600m iyo 900m. Waa maxay bedka dugsiga uu ku fadhiyo hiktaar ahaan?

7. Xisaabi meeriska goobada leh

b) Dhexroor 35 sm ah?

t) gacan 42 sm ah?

8. Waa maxay bedka goobada leh

b) Dhexroor 28 sm ah?

t) gacan 7 sm ah?

9. Qol jiif ayaa cabirkiisu yahay 20m iyo 18m. Waxa la dhigay kadiifad oo waxa la baneeyay 1m wareegga saxxadda dhulka. Waa maxay bedka qaybta aan la saarin kadiifadda?

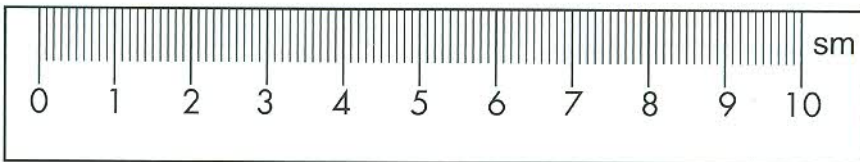
## Halbeegyada cabbiraadaha mitirka

### Dherer

Habka mitirka caalamiga ah ee cabbiraadaha dhererka waxa uu leeyahay afar halbeeyo.

Midka ugu yar waa millimitir (mm). Waa sida ballaca cirbadda.

Sentimitir (sm) waxa ay le'eg tahay 10mm



Mitirka(m) waxa uu le'eg yahay 100 sm.

Mitirrada iyo sentimitirrada waxa loo adeegsan

karaa in lagu cabbirro joogagga

Xuseen dherarkiisu waa 1m 72 sm.

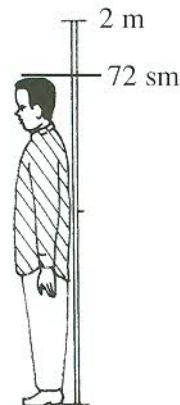
Halbeegga dhererka ee ugu weyn waa kiilomitir (km).

kiilomitirka (km) waxa uu le'eg yahay 1 000m.

Tusahan waxa uu muujinayaa xiriirka ka

dhexeeya halbeegyada habka caalamiga ah.

Waxa loo adeegsan karaa isku beddelka halbeegyada.



	km			m		sm	mm
10 mm = 1 sm						1	0
100 sm = 1 m				1	0	0	
1000 m = 1 km	1	0	0	0			

**Tusaalooyin:**

(i) U beddel mm

b) 5 sm

t) 3 sm

j) 8 sm

km			m		sm	mm
					5	0
					3	0
					8	0

b) 5 sm = 50 mm

t) 3 sm = 30 mm

j) 8 sm = 80 mm

(ii) U beddel sm

b) 45 mm

t) 68 mm

j) 93 mm

km			m		sm	mm
					4	5
					6	8
					9	3

b) 45 mm = 4.5 sm

t) 68 mm = 6.8 sm

j) 93 mm = 9.3 sm

(iii) U beddel m:

b) 238 sm

t) 465 sm

j) 609 sm

km			m		sm	mm
			2	3	8	
			4	6	5	
			6	0	9	

b) 238 sm = 2.38 m

t) 465 sm = 4.65 m

j) 609 sm = 6.09 m

(iv) U beddel km:

b) 2536 m

t) 5308 m

j) 7430 m

km			m		sm	mm
	5	3	6			
5	3	0	8			
7	4	3	0			

b) 536 m = 0.536 km

t) 5308 m = 5.308 km

j) 7430 m = 7.430 km

(v) U beddel m:

b) 6 km

t) 8.436 km

j) 14.504 km

km			m		sm	mm
6	0	0	0			
8	4	3	6			
14	5	0	4			

b) 6 km = 6000 m

t) 8.436 km = 8436 m

j) 14.504 km = 14.504 m

Ogow: Inta aan la soo saarin Habka mititka caalamiga ee cabbiraadaha dhererka, tusaha halbeegyada dhererka waxa uu u ekaa sidan oo kale:

km	Hm	Dm	m	dm	sm	mm
					5	0
					3	0
					8	0

Hm, Dm, iyo dm lama adeegsado laakiin tusaha waa isla midkii qaab ahaan. Weli meelhooda waa ay ku jiraan.

### Layli 1

Sawir tuse halbeegyada mitirka si loo beddelo halbeegyada su'aalahan:

1. U beddel sm

b) 84 mm

t) 37 mm

j) 50 mm

2. U beddel mm

b) 6 sm

t) 4 cm

j) 9 sm

3. U beddel km

b) 4382 m

t) 6084 m

j) 5608 m

4. U beddel m

b) 265 sm

t) 4632 mm

j) 3806 sm

x) 7 km

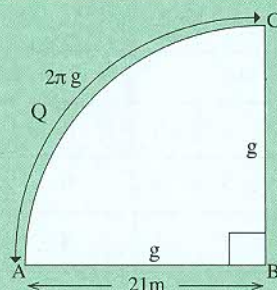
kh) 7.365 km

d) 38.6 5 km

## Wareegga shaxannada isku dhafan

### Tusaalooyin:

Wareegga shaxan waa fogaanta ku xeeran shaxanka. Marka aan xisaabinayno wareegga shaxan, marka hore waa in la calaamadiyaa xuddudaha shaxanka.



i) Xisaabi wareegga shaxanka.

Ku magacaw qaybta ABCQ

Shaxanka waa qaab  $\frac{1}{4}$  goobo

$$\angle ABC = 90^\circ$$

Sida awgeed wareegga  $ABCQ = AQC + CB + BA$

$$\begin{aligned} \text{wareegga qaybta } ABC &= \frac{1}{4} \text{ meeris} \\ &= \frac{1}{4} (2\pi r) + r + r \\ &= \frac{1}{4} (2 \times \frac{22}{7} \times 21) + 21 + 21 \\ &= \frac{1}{4} (132) + 21 + 21 \\ &= 33 + 42 \\ &= 75 \text{ m} \end{aligned}$$

(ii) Xisaabi wareegga shaxanka la isa siiyay

$$(\pi \text{ u qaado } \frac{22}{7})$$

Ku magacaw shaxanka ABCDE

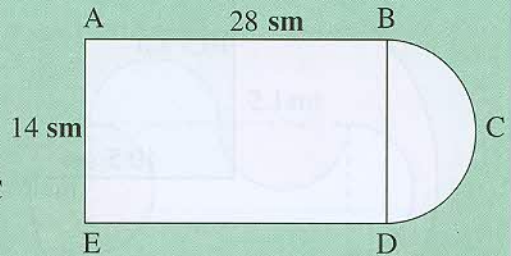
wareegga shaxanka

= laydiga ABDE + nus goobada ku taal BC

$$= (AB + AE + ED) + \frac{1}{2} \pi \times 14$$

$$= (28 + 28 + 14) + \frac{1}{2} \times \frac{22}{7} \times 14$$

$$= 70 + 22 = 92 \text{ sm}$$



$$\text{Meeriska badhr-goobo} = \frac{1}{2} \pi \times d$$

(iii) Xisaabi wareegga shaxanka la isa siiyay. ( $\pi$  u qaado 3.14)

wareegga = nus goobada ku taal AD + AO + OD

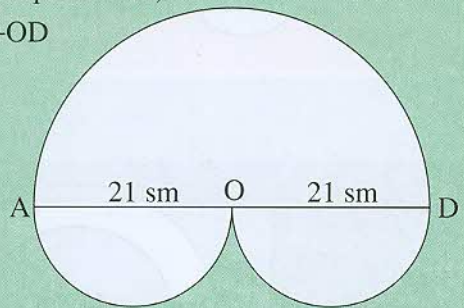
$$= (\frac{1}{2} \pi \times 42) + (\frac{1}{2} \pi \times 21) + (\frac{1}{2} \pi \times 21)$$

$$= \frac{1}{2} (42 + 21 + 21)$$

$$= \frac{1}{2} \times \frac{22}{7} \times 84$$

$$= 11 \times 12$$

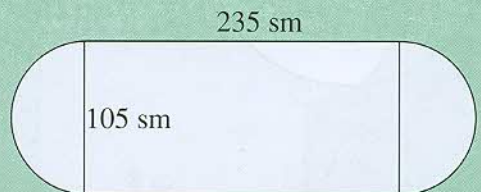
$$= 132 \text{ sm}$$



(iv) Xisaabi wareegga shaxanka ku muujisan

dhinaca. ( $\pi$  u qaado =  $\frac{22}{7}$ )

Wareegga shaxanka waxa uu ka sameysan yahay 2 nus goobo iyo 2 xarriiq toosan



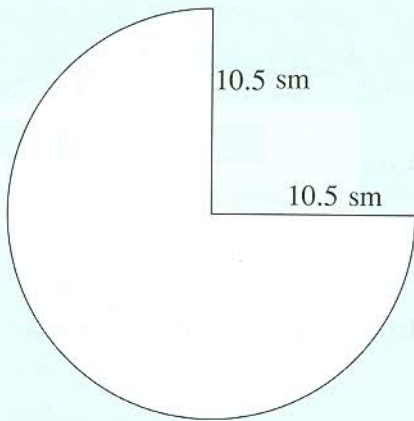


Dhererka 2 nus-goobo waa	$= \frac{1}{2} \pi dh \times 2$
	$= \frac{1}{2} \times \frac{22}{7} \times 105 \times 2$
	$= 330 \text{ m}$
Dhererka dhinacyada	$= 235 \times 2$
	$= 470 \text{ m}$
Wareegga shaxanka	$= 330 \text{ m} + 470 \text{ m}$
	$= 800 \text{ m}$

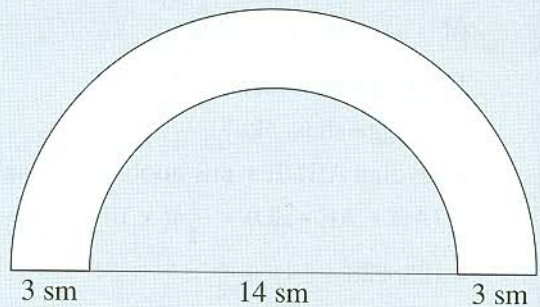
**Layli 2**

1. Xisaabi wareegga shaxannada. ( $\pi$  u qaado  $= \frac{22}{7}$ )

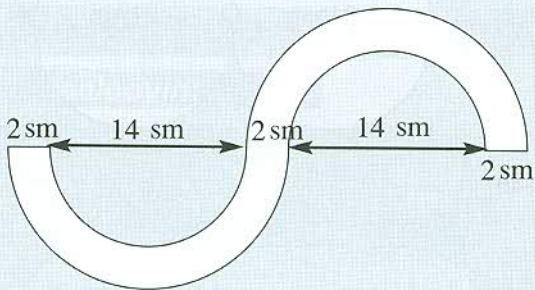
b)



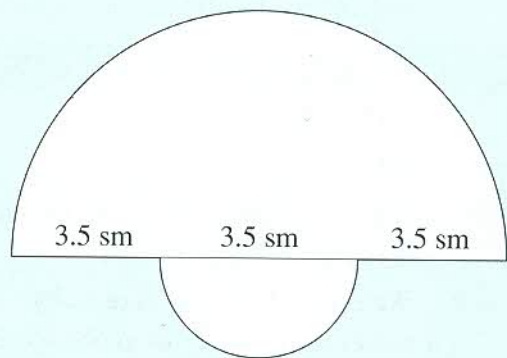
t)



j)

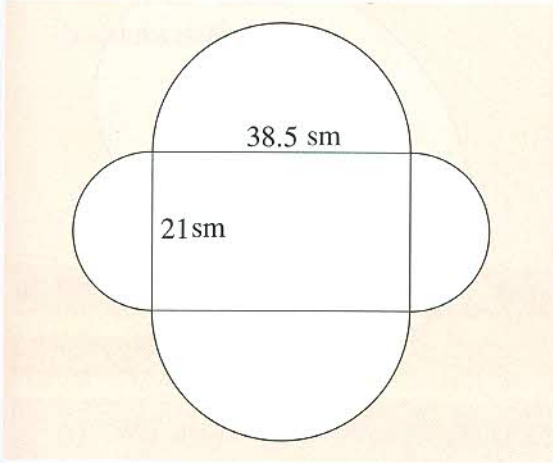


x)

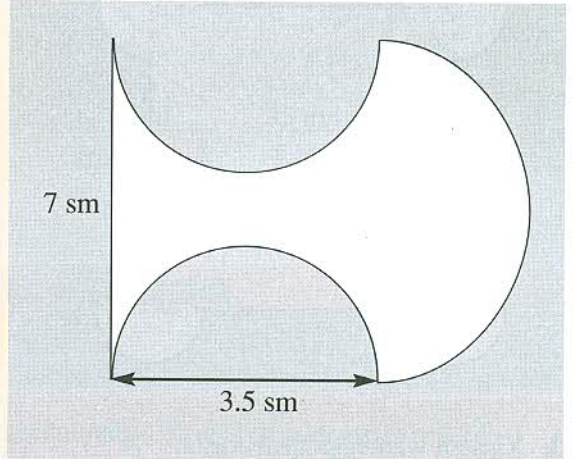


2. Xisaabi wareegga shaxannada. ( $\pi$  u qaado =  $\frac{22}{7}$ )

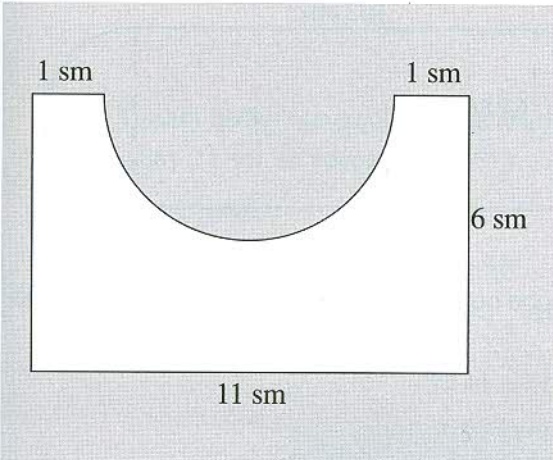
b)



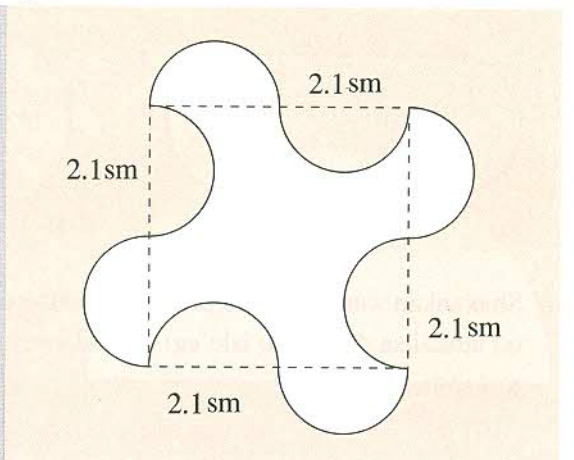
t)



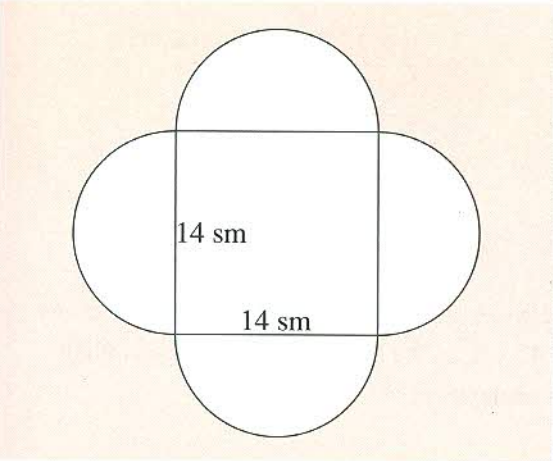
j)



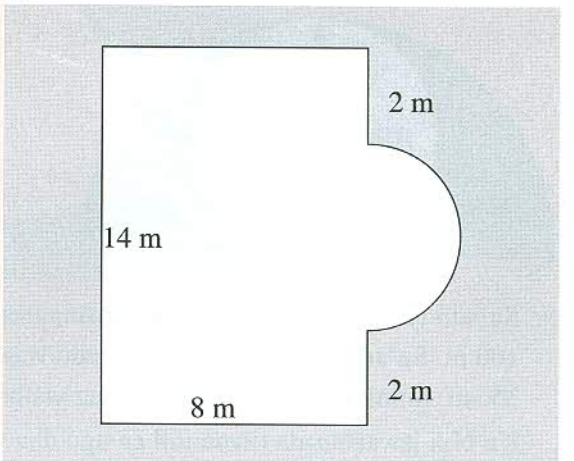
x)



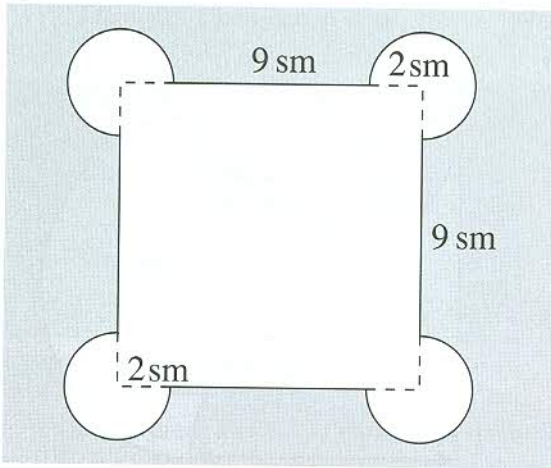
kh)



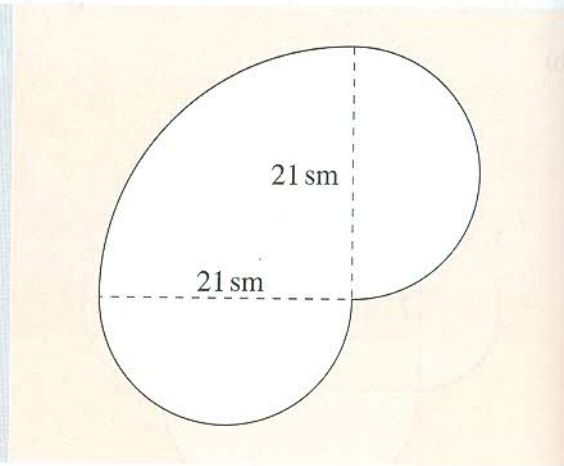
d)



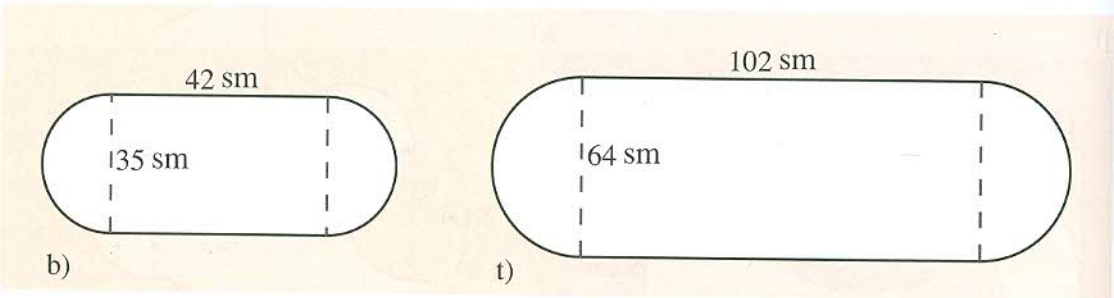
r)



s)

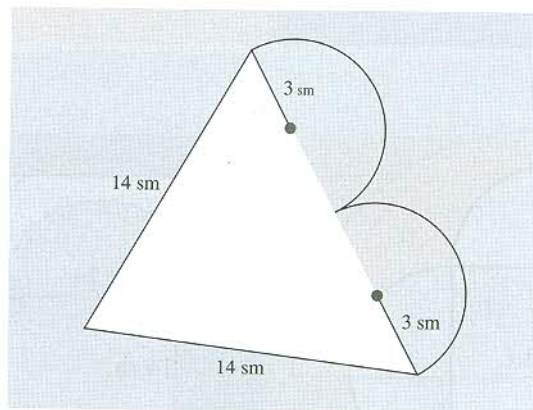


3. Xisaabi wareegga qaab kasta.



4. Shaxankan waa qaab isku jira ee labo nus-goobo oo leh gacan 3 sm iyo saddexagalo labaale oo labadiisa dhinac ee isle'egi yihiin 14 sm.

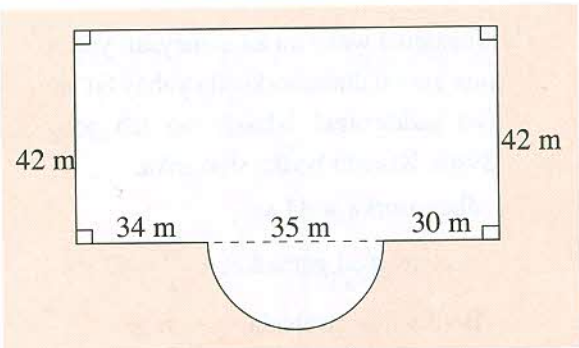
Xisaabi wareeggiisa.



5. Su'ado iyo Shariif waxa ay ku garaangarinaayeen shaagaggooda jid dhererkiisu yahay 100 m. Su'ado dhexroorka shaaggeedu waa 42 sm, halka kan shariif gacankiisu ahaa 35 sm. Immisa wareeg ayaa uu shaag walba sameynaya.

Ku bixi jawaabtaada tirada idil ee ugu dhaw.

6. Jaantuskan waxa uu muujinayaa beer daaqsineed. Dhexroorka nuska goobo waa 35m. Waa maxay wareegga beerta daaqsinka mitir ahaan?



## Bedka qaababka isku dhafan

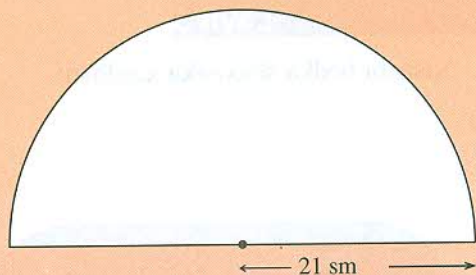
### Tusaalooyin:

(i) Waa maxay bedka goobada dhexroorkedu yahay 21 sm? (u adeegso  $\pi = 3.14$ )

$$\begin{aligned} \text{Gacanka goobada waa } 21 \div 2 &= 10.5 \text{ sm} \\ \text{Bedka goobada} &= \pi r^2 \\ &= 3.14 \times 10.5 \times 10.5 \\ &= 346.2 \text{ sm}^2 \end{aligned}$$

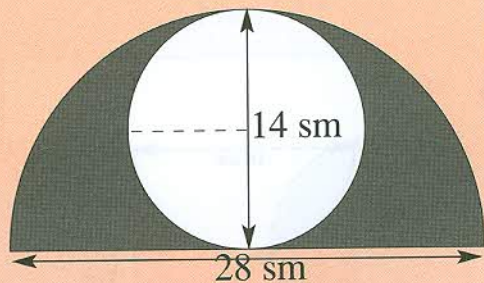
(ii) Xisaabi bedka nus goobo ee gacankeedu yahay 21 sm. (u adeegso  $\pi = \frac{22}{7}$ )

$$\begin{aligned} \text{Bedka goobo} &= \pi r^2 \\ \text{Bedka nus-goobo} &= \frac{\pi r^2}{2} \\ &= \frac{22}{7} \times \frac{21 \times 21}{2} \\ &= 11 \times 21 \times 3 \\ &= 693 \text{ sm}^2 \end{aligned}$$



(iii) Waa maxay bedka gobolka xardhan ee shaxankan? (u adeegso  $\pi = \frac{22}{7}$ )

$$\begin{aligned} \text{Bedka nus-goobo} &= \frac{1}{2} \pi r^2 \\ &= \frac{1}{2} \times \frac{22}{7} \times \frac{28}{2} \times \frac{28}{2} \\ &= 308 \text{ sm}^2 \\ \text{Bedka goobo gudeedka} &= \pi r^2 \\ &= \frac{22}{7} \times 7 \times 7 \\ &= 154 \text{ sm}^2 \\ \text{Bedka gobolka xardhan} &= (308 - 154) \\ &= 154 \text{ sm}^2 \end{aligned}$$



(iv) Shaxanka waxa uu ka sameysan yahay nus-goobo dhexroorkedu yahay 84 sm iyo saddexagal labaale oo leh joog 39sm. Xisaabi bedka shaxanka.

dhexroorka = 84 sm

sida awgeed gacanka =  $\frac{84}{2} = 42$  sm

Bedka nus-goobada =  $\frac{1}{2} \pi r^2$

=  $\frac{1}{2} \times \frac{22}{7} \times 42 \times 42$

= 11 x 6 x 42

= 2 772 sm<sup>2</sup>

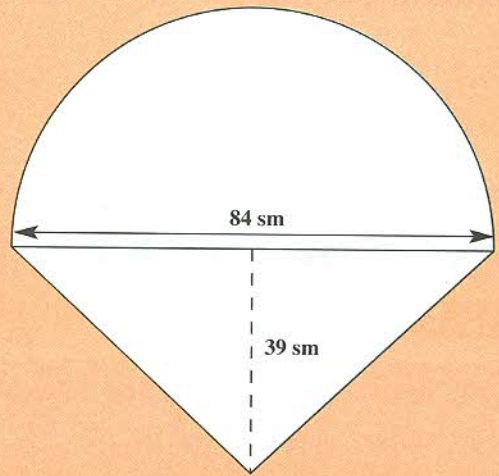
Bedka  $\Delta = \frac{1}{2}$  sal x jooga qotoma

=  $\frac{1}{2} \times 84 \times 39$

= 1638 sm<sup>2</sup>

Bedka shaxanka = 2772 + 1638

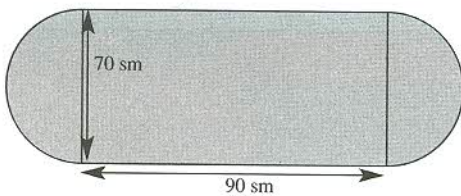
= 4410 sm<sup>2</sup>



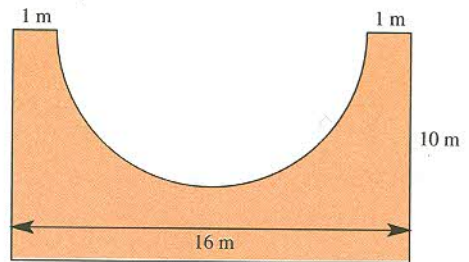
**Layli 3**

1. Xisaabi bedka shaxanka xardhan:

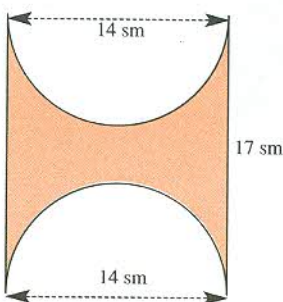
b)



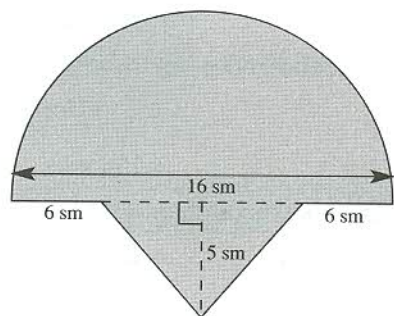
t)



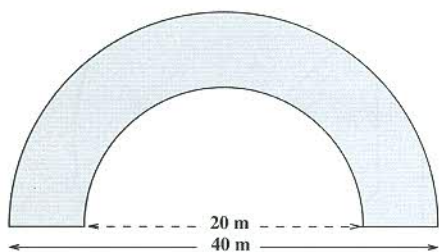
j)



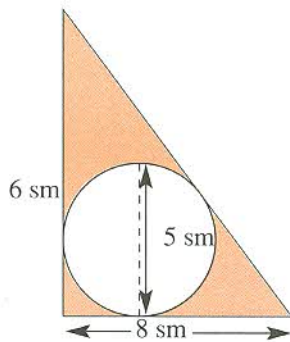
x)



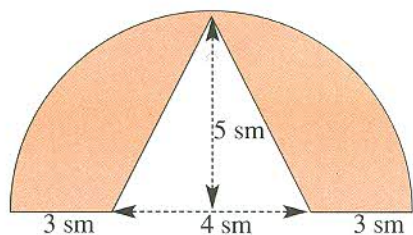
kh)



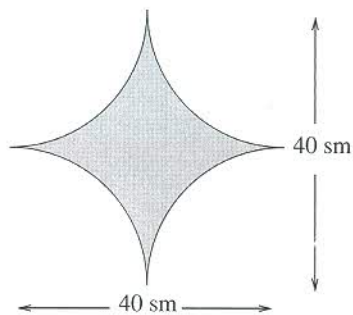
d)



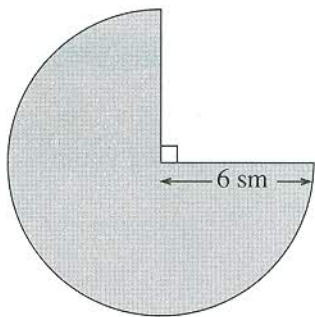
r)



s)



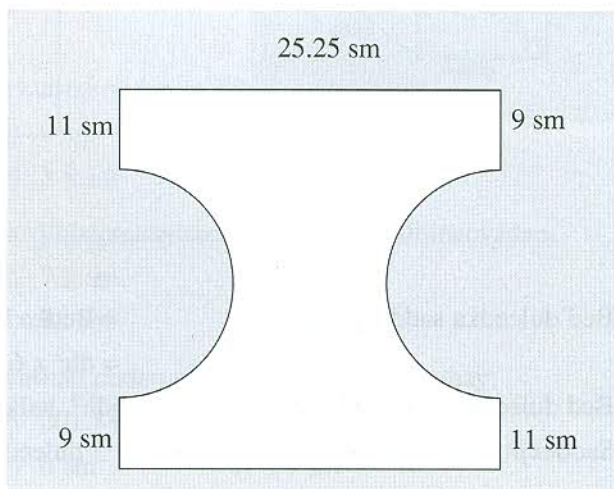
sh)



2. Gacanka Nus goobo kasta ee shaxanka waa 5.25 sm. Xisaabi:

b) Bedka shaxanka

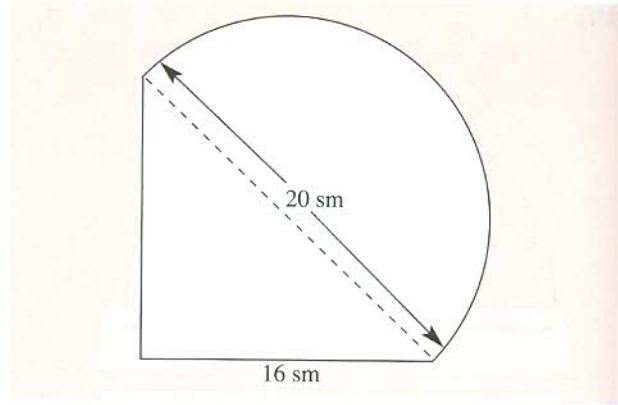
t) Wareegga shaxanka



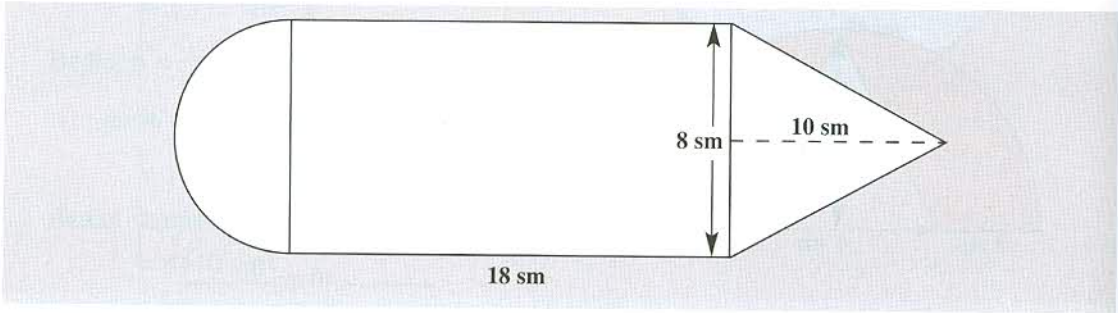
3. Qaybta xoodan ee shaxanka waa nus-goobo leh dhexroor 28 m.

Xisaabi:

- b) Dhererka g
- t) Bedka shaxanka
- j) Wareegga shaxanka



4. Xisaabi bedka qaabkan.

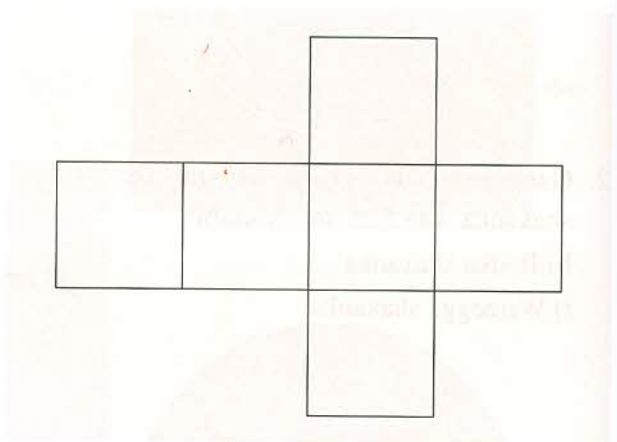
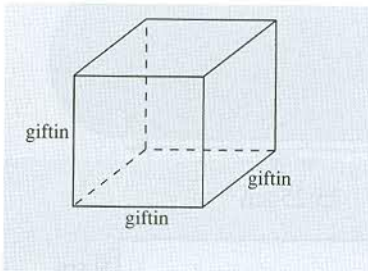


## Bed duleed

Bed duleed waa wadarta dhammaan beded duleedyada ama wejiyada.

### Saddexjibbaarane

Saddexjibbaarane oodan waxa uu leeyahay 6 weji. Giftinnadu waa isle'eg yihiin.



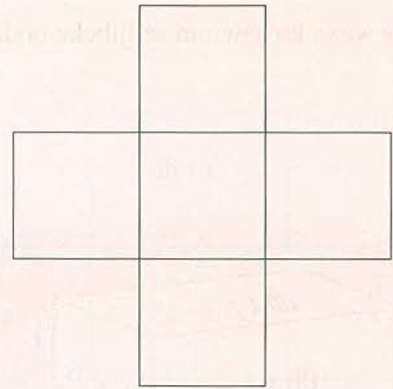
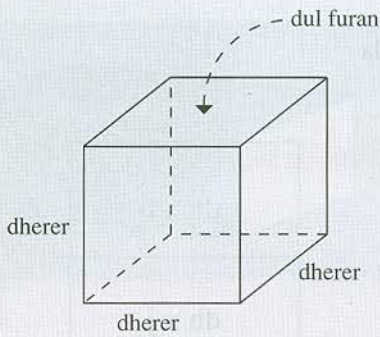
Bed duleedka saddexjibbaarane

$$= \text{Bedka hal weji} \times \text{tirada wejiyada}$$

$$= dh^2 \times 6 = 6dh^2$$

Bed duleedka saddexjibbaarane oodan =  $6dh^2$ , halka dh ay tahay dhererka hal giftin.

Saddexjibbaarane furan waxa uu leeyahay 5 duleed dibadeed ama weji.



sida awgeed bedka dul dibadeedyada ee saddexjibbaarane furan =  $5dh^2$

### Tusaalooyin:

(i) Xisaabi bed duleedka saddexjibbaarane furan oo leh dhinac 5 sm. Bed duleedka saddexjibbaarane furan

$$\begin{aligned}
 &= 5dh \\
 &= 5(5)^2 \\
 &= 5 \times 25 \\
 &= 125 \text{ sm}^2
 \end{aligned}$$

(ii) Xisaabi dhinaca saddexjibbaarane oodan oo bed duleedkiisu yahay  $253.5 \text{ m}^2$  bed duleedka saddexjibbaarane oodan =  $6dh^2$

$$L^2 = \frac{\text{bed duleedka saddexjibbaarane oodan}}{6}$$

$$L^2 = 253.5 \div 6$$

$$L^2 = 42.25$$

$$L = \sqrt{42.25}$$

$$L = 6.5 \text{ m}$$

### Layli 4

1. Xisaabi bed duleedka saddexjibbaaranyaasha oodan ee leh dhinacyadan:

- |            |           |           |           |
|------------|-----------|-----------|-----------|
| b) 7 sm    | t) 2.4 sm | j) 5 sm   | x) 6.7 sm |
| kh) 9.6 sm | d) 8 sm   | r) 3.8 sm | s) 4 sm   |

2. Xisaabi bed duleed dibadeedka ee saddexjibbaaranyaasha furan ee leh dhinacyadan:

- |           |           |           |           |
|-----------|-----------|-----------|-----------|
| b) 4.5 sm | t) 6 sm   | j) 7.9 sm | x) 1.5 sm |
| kh) 9 sm  | d) 2.9 sm | r) 15 sm  | s) 3 sm   |

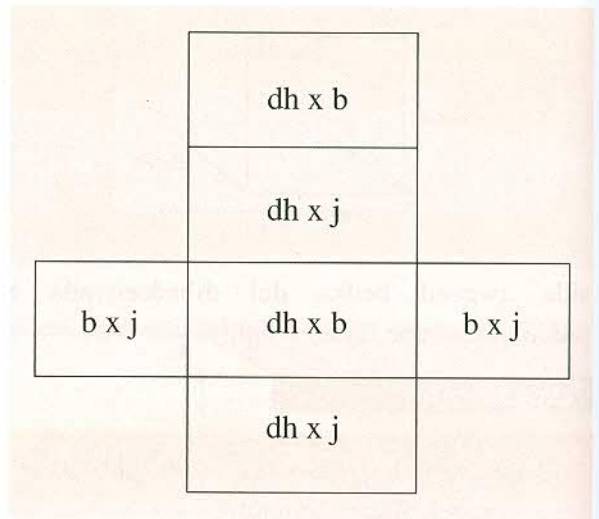
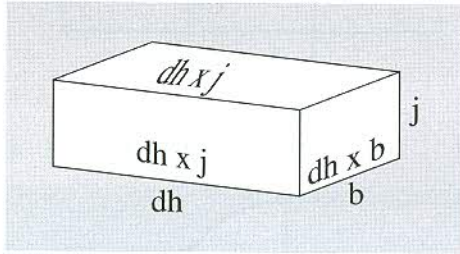
3. Xisaabi dhinacyada saddexjibbaaranyaashan oodan ee bed duleedkoodu yahay:

- |            |             |              |          |
|------------|-------------|--------------|----------|
| b) 384 sm  | t) 121.5 sm | j) 201.84 sm | x) 54 sm |
| kh) 150 sm | d) 216 sm   | r) 6 sm      | s) 24 sm |



### Sedjibeke

Hoos waxa ku sawiran sedjibeke oodan iyo dhiskeeda



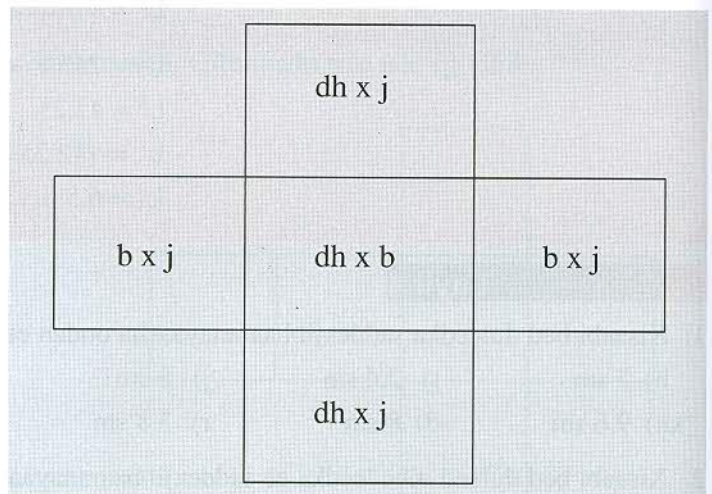
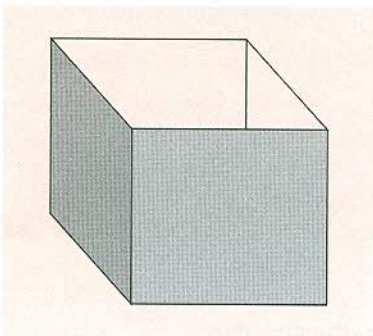
Bed duleed

$$= d h b + d h b + d h j + d h j + b j + b j$$

$$= 2 d h b + 2 d h j + 2 b j$$

$$= 2(d h b + d h j + b j)$$

Hoos waxa ku sawiran sedjibeke furan iyo dhiskeeda. Hoos ama kor ayaa furnaan kara.

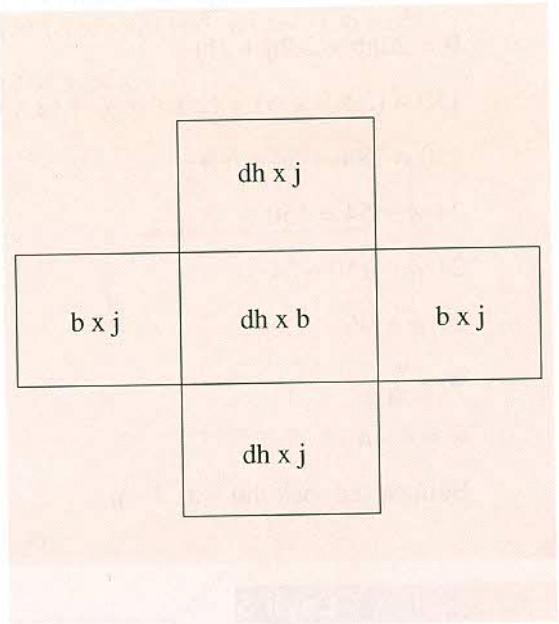
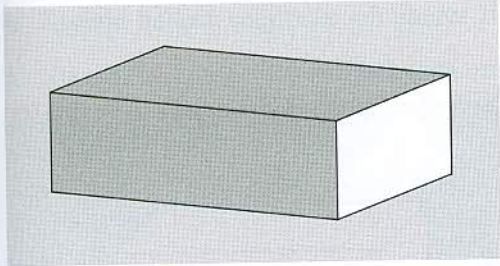


Bed duleed

$$= d h b + d h j + d h j + b j + b j$$

$$= d h b + 2 d h j + 2 b j$$

Sedjibeke u furan gudaha iyo dibadda



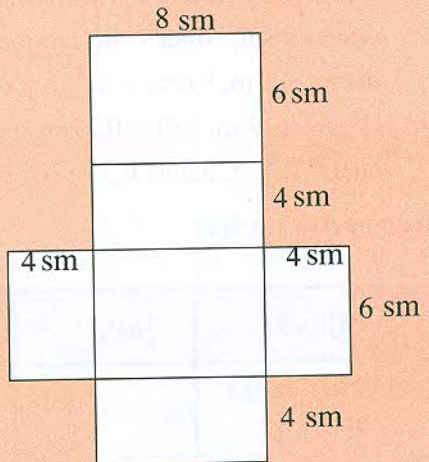
$$\text{Bed duleed} = 2 \text{ dhb} + 2 \text{ dhj} + \text{bj}$$

**Tusaalooyin:**

(i) Xisaabi bed duleedka sedjibeke xiran oo leh dherer 8sm, ballac 6sm iyo joog 4 sm.

Sawir dhiska sedjibeke

$$\begin{aligned} A &= 2\text{dhb} + 2\text{dhj} + 2\text{bj} \\ &= (2 \times 8 \times 6) + (2 \times 8 \times 4) + (2 \times 6 \times 4) \\ &= 96 + 64 + 48 \\ &= 208 \text{ sm}^2 \end{aligned}$$



(ii) Xisaabi bed duleedka sedjibeke furan oo leh dherer 8 sm, ballac 4 sm, joog 7 sm.

$$\begin{aligned} A &= \text{dhb} + 2\text{dhj} + 2\text{bj} \\ &= (8 \times 4) + (2 \times 8 \times 7) + (2 \times 4 \times 7) \\ &= 32 + 112 + 56 \\ &= 200 \text{ sm} \end{aligned}$$

(iii) Xisaabi ballaca sedjibeke oodan oo leh dherer 9 sm, joog 3 sm iyo bed duleed 105 sm<sup>2</sup>.

$$B = 2d_{hb} + 2d_{hj} + 2b_j$$

$$150 = (2 \times 9 \times w) + (2 \times 9 \times 3) + (2 \times w \times 3)$$

$$150 = 18b + 54 + 6b$$

$$24w + 54 = 150$$

$$24w = 150 - 54$$

$$24w = 96$$

$$w = \frac{96}{24}$$

$$w = 4 \text{ sm}$$

Ballaca sedjibekuhu waa 4 sm.

### Layli 5

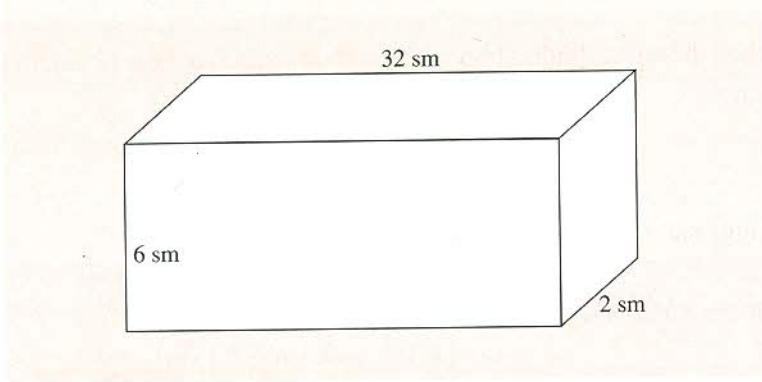
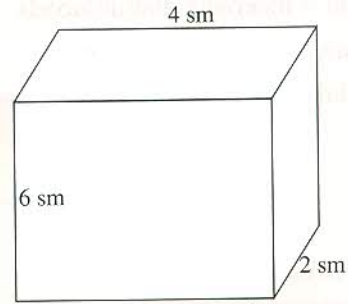
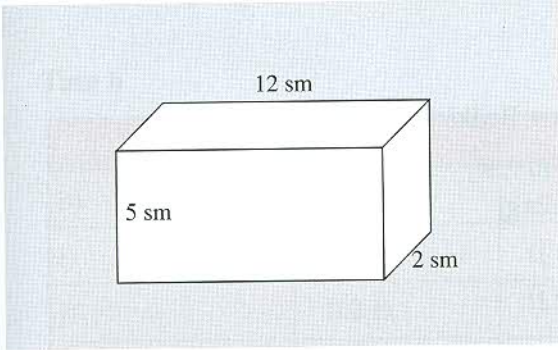
1. Xisaabi bed duleedka sedjibeke leh

- b) dherer 5 sm, ballac 3 sm iyo joog 2 sm
- t) dherer 6.8 sm, ballac 4 sm iyo joog 5 sm
- j) dherer 9 sm, ballac 6 sm iyo joog 4 sm
- x) dherer 1.1 m, ballac 1 m iyo joog 0.8 m
- kh) dherer 0.17 m, ballac 0.12 m iyo joog 0.08 m
- d) dherer 0.4 m, ballac 0.3 m iyo joog 0.2 m

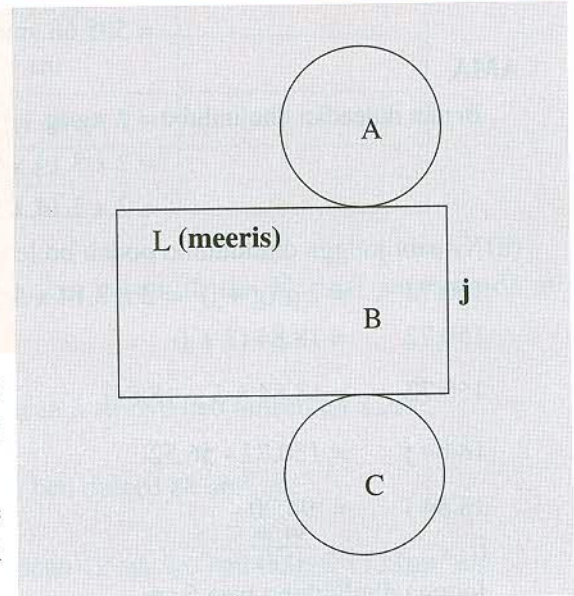
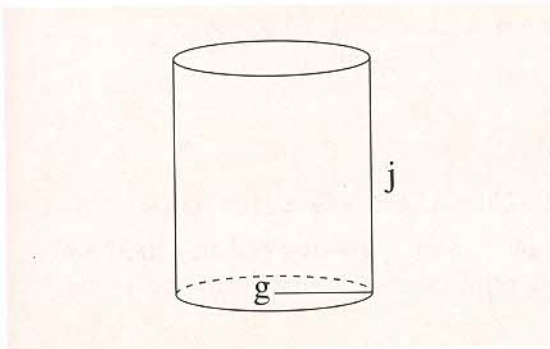
2. Dhammaystir tusahan

Sedjibeke	joog	dherer	ballac	bed duleed
(b) Furan xagga sare	3 sm	5 sm	4 sm	
	6 sm	9 sm	7 sm	
	4.5 sm	5.44 sm	8 sm	
	$8\frac{3}{2}$ m	$6\frac{1}{2}$ m	15 m	
(b) Furan gudaha	3 sm	5 sm	4 sm	
	6 sm	5 sm	7 sm	
	$5\frac{1}{2}$ m	$10\frac{1}{2}$ m	12 m	
	9.33 m	11.24 m	15 m	

3. Xisaabi joogga sedjibeke leh dherer 5 sm, ballac 6 sm iyo bed duleed  $214 \text{ sm}^2$ .
4. Xisaabi ballaca sedjibeke leh dherer 10 sm, joog 4 sm iyo bed duleed  $136 \text{ sm}^2$ .
5. Xisaabi bed duleedka sedjibekyada oodan ee soo socda.



### Dhuluulubooyin



Marka la kala jaro oo la kala fidiyo dhuluulubo waxa la helayaa saddex qayb oo kala duwan A, B iyo C.

A iyo C waa xagga sare iyo xagga hoose ee dhuluulubada ( labo goobo oo leh gacan isku mid ah (g).

$$\text{Bedka A} = \pi g^2 \quad \text{Bedka C} = \pi g^2$$

B waa bedka duleedka xoodan ee dhuluulubada. Waxa ay yeelanaysa qaab laydi ah marka loo dhigo si fidsan .

$$\text{Bedka laydiga} = dh \times j \quad (j \text{ waa joogga dhuluulubada})$$

$$\text{Halkan dh} = \text{meeriska dhuluulubada} = 2\pi g$$

$$\text{Sida awgeed bedka B} = 2\pi g j$$

$$\text{Bed duleedka dhuluulubo} = \text{Bedka A} + \text{Bedka B} + \text{Bedka C}$$

$$= \pi g^2 + 2\pi g j + g^2$$

$$= 2\pi g^2 + 2\pi g j$$

$$= 2\pi g (g + j)$$

$$\text{Bed duleedka dhuluulubo} = 2\pi g (g + j)$$

### Tusaalooyin:

- (i) Xisaabi bed duleedka dhuluulubo leh dhexroor 18sm iyo joog 12 sm. (adeegso  $\pi = 3.14$ )

$$d = 18 \text{ sm}$$

$$g = 12 \text{ sm}$$

$$g = \frac{d}{2} = \frac{18}{2} = 9 \text{ sm}$$

$$\text{Bedkaxagga sare/hoose} = 2\pi g^2$$

$$= 2 \times 3.14 \times 9^2 \text{ sm}^2 = 6.28 \times 81 \text{ sm}^2$$

$$\text{Bedka duleedka xoodan} = 2\pi g j = 2 \times 3.14 \times 9 \times 12 \text{ sm}^2$$

$$= 6.28 \times 108 \text{ sm}^2 = 678.24 \text{ sm}^2$$

$$\text{Bedka duleedka dhuluulubo} = \text{Bedka xagga sare iyo xagga hoose}$$

$$+ \text{Bedka duleedka xoodan}$$

$$= 508.68 \text{ sm}^2 + 678.24 \text{ sm}^2 = 1186.92 \text{ sm}^2$$

### AMA

$$\text{Bedka duleedka dhuluulubo} = 2\pi g (g + j)$$

$$= 2 \times 3.14 \times 9 (9 + 12)$$

$$= 2 \times 3.14 \times 9 (21) = 6.28 \times 189 = 1186.92 \text{ sm}^2$$

- (ii) Xisaabi joogga dhuluulubo oodan oo leh gacan 3 sm iyo wadar bed ah 150.72  $\text{sm}^2$ .

$$150.72 = 2g(g + j) = 2 \times 3.14 \times 3 (3 + j)$$

$$150.72 = 18.84 (3 + j)$$

$$150.72 = 18.84 \times 3 + 18.84j$$

$$18.84j = 150.72 - 56.52$$

$$18.84j = 94.20$$

$$j = \frac{94.20}{18.84}$$

Joogga dhuluulubo waa 5 sm.

## Layli 6

1. Dhammeystir tusayaasha. U qaado  $\frac{22}{7}$  ama 3.14.

Ogow: In dhuluulubo furan ay leedahay hal dhammaad oo goobo ah.

## Tuse b

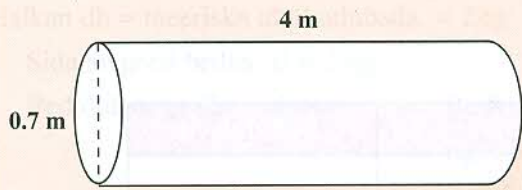
Dhuluulubo oodan	Gacan	Joog	Bed duleed
b)	6 sm	14 sm	
t)	21 sm	8 sm	
j)	0.2 m	1 m	
x)	9.8 sm	6 sm	
kh)	5 sm	3.5 sm	
d)	12 sm	10.5 sm	

## Tuse t

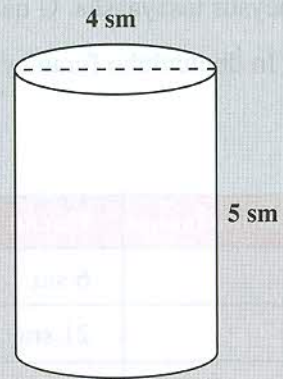
Dhuluulubo turan	Gacan	Joog	Bed duleed
b)	7 sm	4 sm	
t)	15 sm	3.5 sm	
j)	100 mm	40 mm	
x)	10.5 sm	9 sm	
kh)	16 sm	21 sm	
d)	1.2 m	3.5 m	

- Xisaabi bed duleedka tuubo leh dherer 3 m iyo gacan 28 sm. Ku bixi jawaabtaada  $m^2$  ahaan.
- U xisaabi mitir ahaan dhererka tuubo leh gacan 5 sm iyo bed duleed ah  $2.2m^2$ .
- Xisaabi gacanka tuubo leh dherer 10 sm iyo bed duleed  $88 sm^2$  ah.
- Xisaabi dhererka dhuluulubo xiran oo leh gacan 12 sm iyo bed duleed  $1733sm^2$  ah.
- Xisaabi bed duleedka dhuluulubooyinkan.

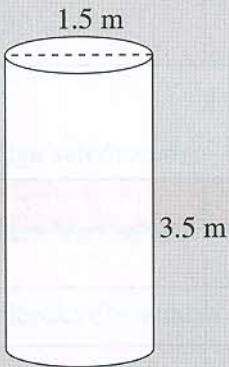
b)



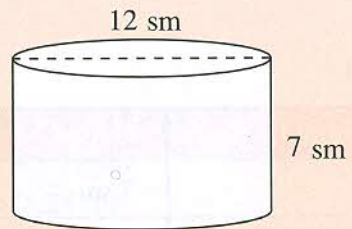
t)



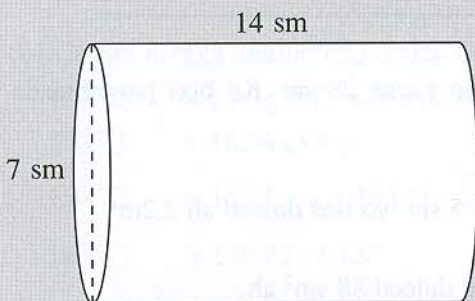
j)



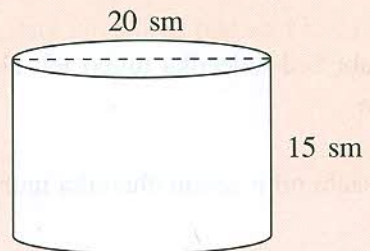
x)



kh)



d)



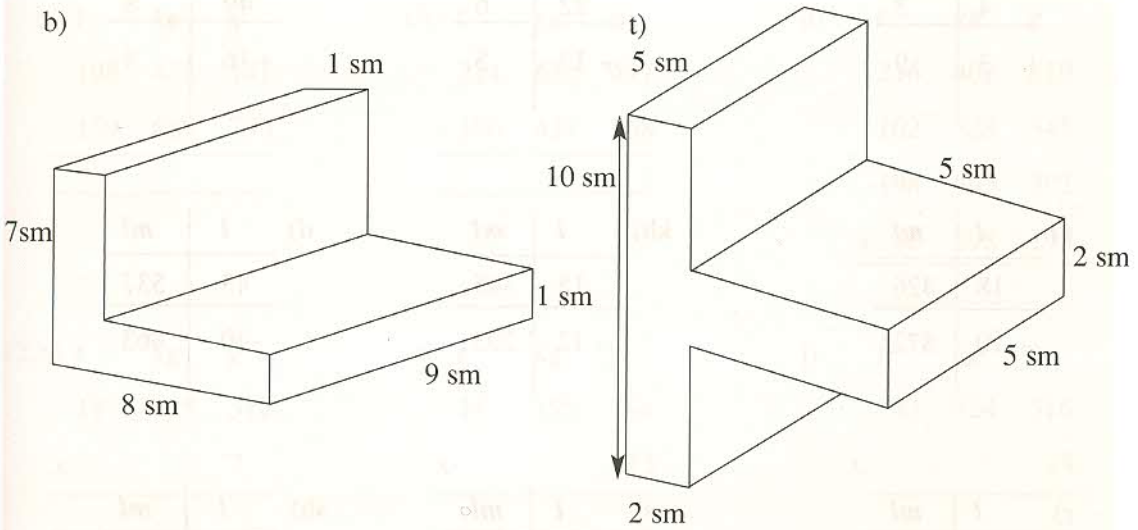
# 8 MUG, QAAD IYO CULAYS



## Naqtiin

### Layli 1

1. Xisaabi mugga:



2. U beddel waxa soo socda  $\text{sm}^3$  ( xusuuso  $1 \text{ m}^3 = 1\,000\,000 \text{ sm}^3$  )

- b)  $5 \text{ m}^3$       t)  $8 \text{ m}^3$       j)  $12 \text{ m}^3$       x)  $15 \text{ m}^3$       kh)  $20 \text{ m}^3$

3. U beddel waxa soo socda  $\text{m}^3$ .

- b)  $4\,000\,000 \text{ sm}^3$       t)  $2\,500\,000 \text{ sm}^3$       j)  $9\,754\,368 \text{ sm}^3$

4. Dhererka taangi laydi ah waa 6.5 m oo ballaciisuna waa 5 m. Haddii jooggiisu yahay 4 m, xisaabi (  $1 \text{ m}^3 = 1\,000\text{l}$  )

- b) Mugga taangiga biyaha.  
t) Qaadka taangiga litir ahaan.

5. Dugsi hoy ah ayaa leh wheel dhuluulubo oo leh gacan 50 sm iyo joog 1 m si loogu keydiyo biyo.

Waa maxay mugga wheelka (b)  $\text{m}^3$  ahaan? (t)  $\text{sm}^3$  ahaan?

Waa maxay mugga walaxda wheelka haddii uu dhumuca dhinac walba ee ku xeeran uu yahay 0.5 sm



6. U beddel litirro

b) 200 ml

t) 2674 ml

j) 5070 ml

x) 12 465 ml

7. U beddel millilitiro.

b) 2.5 l

t) 4.5 l

j) 9.248 l

x) 4.375 l

kh) 24.608 l

8. b) 

	<i>l</i>	<i>ml</i>
	4	3
+	3	9

t) 

	<i>l</i>	<i>ml</i>
	22	6
+	12	5

j) 

	<i>l</i>	<i>ml</i>
	49	8
+	16	4

x) 

	<i>l</i>	<i>ml</i>
	18	426
-	10	872

kh) 

	<i>l</i>	<i>ml</i>
	15	345
-	12	793

d) 

	<i>l</i>	<i>ml</i>
	43	537
-	40	863

r) 

	<i>l</i>	<i>ml</i>
	2	424
x	6	

s) 

	<i>l</i>	<i>ml</i>
	15	612
x	5	

sh) 

	<i>l</i>	<i>ml</i>
	20	32
x	7	7

9. Faadumo waxa ay sameysay casiir liin ah waxa ayna ku iibisay weel 100 ml qaad ah. 100 ml kasta waxa ay ku iibisay sh 500. Haddii guud ahaan ay iibisay 280 weel, Xisaabi

b) Immisa lacag ayaa ay heshay?

t) inta casiir ay iibisay litir ahaan

10. U tibaax tan iyo kiilogaraamyo. (xusuus: 1000 g = 1 kg, 1000 kg = 1 t)

b) 8624 kg

t) 97160 kg

j) 3.25 t

x) 4.75 t

kh)  $2\frac{3}{4}$  t

d)  $4\frac{3}{4}$  t

r)  $5\frac{1}{8}$  t

s)  $7\frac{2}{5}$  t

$$\begin{array}{r}
 11.b) \quad t \quad kg \quad g \\
 4 \quad 260 \quad 430 \\
 3 \quad 934 \quad 167 \\
 5 \quad 678 \quad 475 \\
 + 1 \quad 345 \quad 198 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 t) \quad t \quad kg \quad g \\
 12 \quad 140 \quad 360 \\
 9 \quad 593 \quad 485 \\
 8 \quad 349 \quad 268 \\
 + 1 \quad 293 \quad 867 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 j) \quad t \quad kg \quad g \\
 47 \quad 925 \quad 375 \\
 - 38 \quad 865 \quad 792 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 x) \quad t \quad kg \quad g \\
 198 \quad 472 \quad 141 \\
 - 159 \quad 869 \quad 759 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 kh) \quad t \quad kg \quad g \\
 274 \quad 630 \quad 497 \\
 - 186 \quad 438 \quad 968 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 d) \quad t \quad kg \quad g \\
 216 \quad 402 \quad 319 \\
 102 \quad 328 \quad 545 \\
 198 \quad 595 \quad 392 \\
 + 86 \quad 398 \quad 193 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 12.b) \quad t \quad kg \quad g \\
 18 \quad 425 \quad 312 \\
 x \quad \quad \quad 7 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 t) \quad t \quad kg \quad g \\
 15 \quad 195 \quad 248 \\
 x \quad \quad \quad 15 \\
 \hline
 \hline
 \end{array}$$

$$\begin{array}{r}
 j) \quad t \quad kg \quad g \\
 143 \quad 324 \quad 516 \\
 x \quad \quad \quad 24 \\
 \hline
 \hline
 \end{array}$$

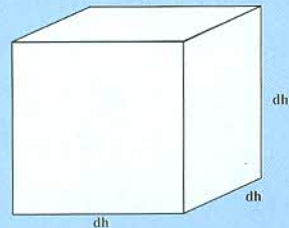
13. Baabuur ayaa la saaray xamuul 168 kiish oo bariis ah oo culayska midkiiba yahay 90kg. Waa immisa tan iyo kiilogaraam wadarta culayska kiishashka bariiska?

## Mugga saddexjibbaarane

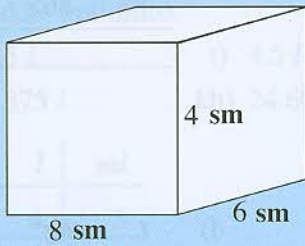
### Tusaalooyin:

(i) Xisaabi mugga saddexjibbaarane oodan oo leh dhinacyo 7 sm ah.

$$\begin{aligned}
 \text{mugga saddexjibbaarane} &= dh \times dh \times dh \\
 &= dh^3 \\
 &= (7)^3 \\
 &= 7 \times 7 \times 7 \text{ sm}^3 \\
 &= 343 \text{ sm}^3
 \end{aligned}$$



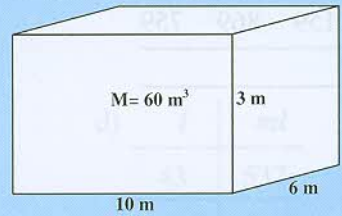
(ii) Xisaabi mugga sedjibeke leh dherer 8 sm, ballac 6 sm iyo joog 4 sm.



$$\begin{aligned} \text{mugga sedjibeke} &= dh \times b \times j \\ M &= 8 \times 6 \times 4 \\ &= 192 \text{ sm}^3 \end{aligned}$$

(iii) Xisaabi ballaca sedjibeke leh mug  $60 \text{ m}^3$ , joog 3 m iyo dherer 10m.

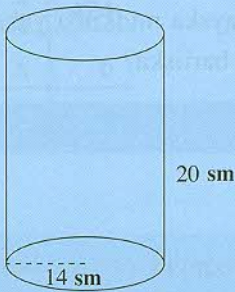
$$\begin{aligned} \text{Mugga sedjibeke} &= dh \times b \times j \\ 60 &= 10 \times b \times 3 \\ \frac{60}{3 \times 10} &= b \\ b &= 2 \text{ m} \end{aligned}$$



## Mugga dhuluulubo

### Tusaalooyin:

(i) Xisaabi mugga dhuluulubada leh gacan 14 sm iyo joog 20 sm.



$$\begin{aligned} \text{mugga dhuluulubo} &= \pi g^2 j \\ M &= \frac{22}{7} \times 14 \times 14 \times 20 \\ &= 22 \times 2 \times 14 \times 20 \\ &= 12\,320 \text{ sm}^3 \end{aligned}$$

(ii) Xisaabi gacanka dhuluulubo oo leh mug  $616 \text{ sm}^3$  iyo joog 4 sm

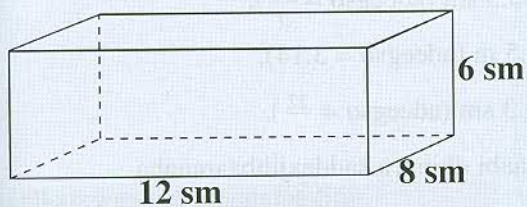
$$\begin{aligned} \text{mugga dhuluulubo} &= \pi g^2 j \\ 616 &= \pi g^2 j \\ 616 &= \frac{22}{7} \times g^2 \times 4 \\ 616 \times 7 &= 88 g^2 \\ \frac{4312}{88} &= \frac{88}{88} g^2 \\ g^2 &= 49 \\ g &= \sqrt{49} = 7 \end{aligned}$$

Gacanka dhuluulubo waa 7 sm

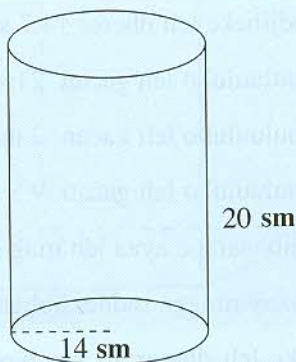
Layli 2

1. Xisaabi mugga shaxannada oodan ee soo socda:

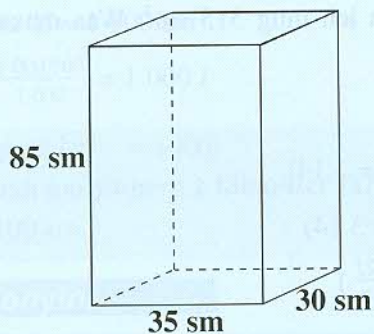
b)



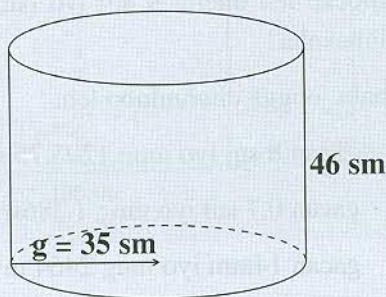
t)



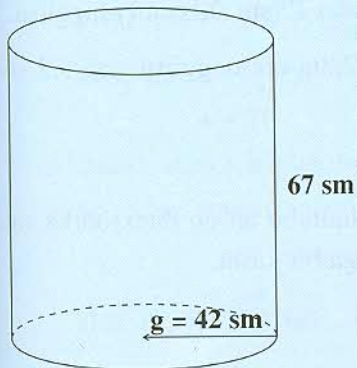
j)



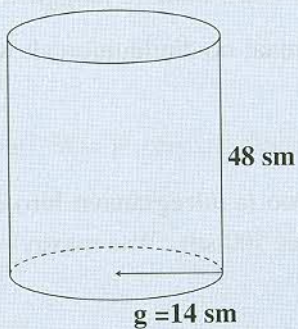
x)



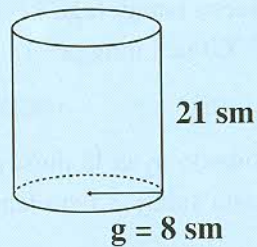
kh)



d)



r)



2. Xisaabi mugga:

- b) Sedjibeke leh dherer 8 sm, ballaca 7 sm iyo joog 5 sm.
- t) Saddexjibbaarane leh dhinacyo 13 sm.
- j) Sedjibeke leh dherer 14.7 sm, ballac 11 sm iyo joog 5 sm.
- x) Dhuluulubo leh gacan 21sm iyo joog 3.5 sm (adeegso =  $\frac{22}{7}$ ).
- kh) Dhuluulubo leh gacan 2 m iyo joog 1.5 m (adeegso = 3.14).
- d) Dhuluulubo leh gacan 9.8 sm iyo joog 3 sm (adeegso =  $\frac{22}{7}$ ).

3. Saddexjibbaarane ayaa leh mug  $64 \text{ sm}^3$ . Xisaabi dhinaca saddexjibbaaranaha

4. Waa maxay mugga saddexjibbaarane leh dhinac  $0.11\text{m}^3$ ?

5. Sedjibeke leh dherer 12 sm iyo joog 12 sm ayaa muggiisu yahay  $480 \text{ sm}^3$  waa maxay ballaca sedjibekaha?

6. Sedjibeke leh ballaac 6 sm iyo joog 4 sm ayaa leh mug  $216 \text{ sm}^3$ . waa maxay dheererka sedjibekaha?

7. Sedjibeke leh dherer 9 sm iyo ballac 5 sm ayaa leh mug  $315 \text{ sm}^3$ . Waa maxay joogga sedjibekaha?

8. Xisaabi joogga dhuluulubo leh:

- b) gacan 8 sm iyo mug  $1205.76 \text{ sm}^3$  (Adeegso = 3.14)
- t) gacan 0.7 sm iyo mug  $1.386\text{sm}^3$  (Adeegso = 3.14)
- j) gacan 14mm iyo mug  $2464 \text{ m}^3$  (Adeegso =  $\frac{22}{7}$ )

9. Xisaabi gacanka dhuluulubo leh:

- b) joog 5 sm iyo mug  $0.077\text{m}^3$  (Adeegso =  $\frac{22}{7}$ )
- t) joog 1.6 sm iyo mug  $22.176 \text{ sm}^3$  (Adeegso =  $\frac{22}{7}$ )
- j) joog 0.8 m iyo mug  $3.04 \text{ m}^3$  (Adeegso = 3.14)

10. Gacanka taangi dhuluulubo ah waa 14 sm oo jooggiisuna waa 12 sm. Xisaabi muggiisa.

11. Gacan taangi lagu keydiyo shidaal oo dhuluulubo ah waa 2,8m oo jooggiisu waa  $9.2 \text{ sm}$ . U Xisaabi mugga

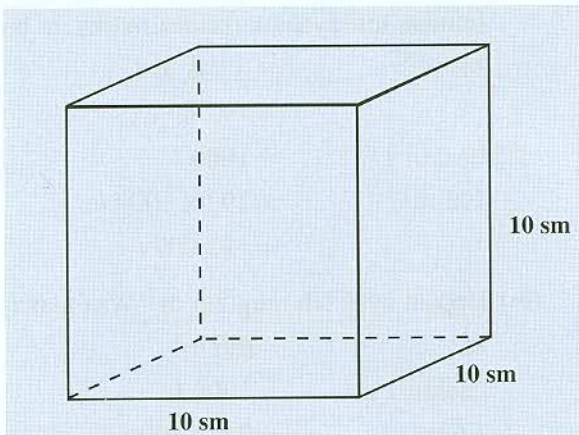
- b)  $\text{sm}^3$
- t)  $\text{m}^3$

12. Buundo ayaa la dhisay iyada oo la adeegsanayo biro dhuluulubo ah oo dhexroorka mid kasta yahay 2.1 sm lehna dherer 500 sm. Waa maxay mugga bir kasta.

# Litir saddexjibbaaran

Saddexjibbaarane cabbirkiisu yahay 10 sm iyo 10 sm iyo 10 sm. Waxa uu leeyahay mug = 10 x 10 x 10 = 1000 sm<sup>3</sup>

1000 sm<sup>3</sup> = 1 litre



weelkan waxa la yiraahdaa litir saddexjibbaaran

## Mitir saddexjibbeeran

1 m = 100 sm

1 m<sup>3</sup> = 100 x 100 x 100

haddaba 1 m<sup>3</sup> = 1 000 000 sm<sup>3</sup>

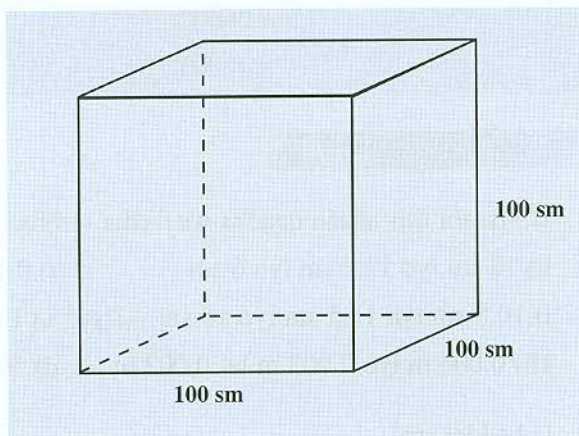
maadaama 1l = 1 000 sm<sup>3</sup>

1 m<sup>3</sup> =  $\frac{1\,000\,000}{1\,000}$  = 1 000 l

Sida awgeed 1m<sup>3</sup> = 1000l

1000l waxa loo yaqaan 1 kilooliter (kl)

1 m = 100 sm



## Tusaalooyin:

(i) Immisa litir ayaa ku jira weel cabbirkiisu yahay 24 sm iyo 17 sm iyo 20 sm?

M = 24 sm x 17 sm x 20 sm = 8160 sm<sup>3</sup>

1000 sm<sup>3</sup> = 1 l

1 sm<sup>3</sup> =  $\frac{1}{1000}$  l

8160 sm<sup>3</sup> = 8160 x  $\frac{1}{1000}$  l

8160 sm<sup>3</sup> =  $\frac{816}{100}$  l  
= 8.16 l

(ii) Baaldi ayaa leh mug 968 sm<sup>3</sup>. Waa maxay qaadkiisu litir ahaan?

waxa aan naqaan in

1 sm<sup>3</sup> =  $\frac{1}{1000}$  l

sida awgeed 968 sm<sup>3</sup> =  $\frac{968}{1000}$  l

= 0.968 l

(iii) Taangi ayaa cabbirkiisu yahay 8m iyo 6 m iyo 4 m.

Immisa litir ayaa uu qaadaa marka uu buuxo?

$$\begin{aligned} M &= 8 \times 6 \times 4 \\ &= 192 \text{ m}^3 \end{aligned}$$

$$\text{Laakin } 1 \text{ m}^3 = 1000 \text{ l}$$

$$\begin{aligned} 192 \text{ m}^3 &= 192 \times 1000 \text{ l} \\ &= 192\,000 \text{ l} \end{aligned}$$

(iv) Berked ayaa leh mug  $2.6 \text{ m}^3$ . Waa maxay qaadkeedu litir ahaan.

$$M = 2.6 \text{ m}^3$$

$$\text{Laakin } 1 \text{ m}^3 = 1000 \text{ l}$$

$$\begin{aligned} 2.6 \text{ m}^3 &= 2.6 \times 1000 \text{ l} \\ &= 2600.0 \text{ l} \\ &= 2600 \text{ l} \end{aligned}$$

### Layli 3

- U xisaabi litir ahaan qaadka weelasha sadjibekaha ah ee leh cabbirraadaha soo socda.
 

b) 16 sm iyo 12.2 sm iyo 6 sm	t) 0.45 m iyo 0.27 m iyo 0.3 m
j) 10.5 sm iyo 11.5 sm iyo 16 sm	x) 19.6 sm iyo 5 sm iyo 2 sm
kh) 0.004 m iyo 0.003 m by 0.002 m	d) 500 mm iyo 350 mm iyo 200 mm
- U beddel  $\text{sm}^3$ .
 

b) 0.54 l	t) 5 000 l	j) 24.6 l	x) 3 952 ml
-----------	------------	-----------	-------------
- U beddel  $\text{m}^3$ .
 

b) 745 000 l	t) 620 l	j) 24.6 l	x) 250 l
--------------	----------	-----------	----------
- Taangi laydi ah ayaa waxa ku jiray 8 000 litir oo biyo ah. Waa maxay mugga taangiga:
 

b) $\text{sm}^3$	t) $\text{m}^3$
------------------	-----------------
- Tuubo biyo ayaa waxa ay taangi ku shubaysa biyo daqiiqadii 150 litir. Intee ayaa ay ku qaadanaysa in ay buuxiso taangi muggiisu yahay  $12\text{m}^3$
- Taangi ayaa leh mug  $80\,000 \text{ sm}^3$ . Immisa litir oo biyo ayaa uu qaadaa marka uu buuxo?
- Weel ayaa cabbirkiisu yahay 50 sm iyo 60 sm iyo 38 sm. U xisaabi qaadka weelka litir ahaan.

## Millilitir (ml)

$$1000 \text{ sm}^3 = 1 \text{ l}$$

$$1000 \text{ sm}^3 = 1000 \text{ ml}$$

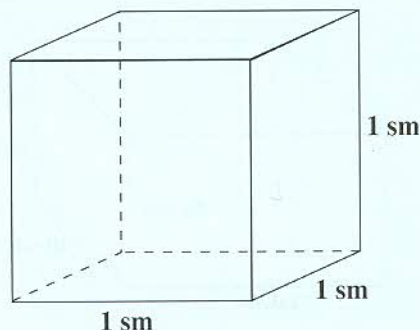
$$\text{Sidaa awgeed } 1 \text{ sm}^3 = 1 \text{ ml}$$

Weel cabbirkiisu yahay 1sm iyo 1sm iyo 1sm

Waxa uu leeyahay mug =

$$1 \text{ sm} \times 1 \text{ sm} \times 1 \text{ sm} = 1 \text{ sm}^3$$

weelkan waxa uu qaada 1ml oo hoor ah.



### Tusaalooyin:

(i) Immisa ml ayaa ku jira:

b)  $5 \text{ sm}^3$                       t)  $8.9 \text{ sm}^3$                       j)  $45.7 \text{ sm}^3$

b)  $5 \text{ sm}^3 = 5 \times 1 \text{ ml} = 5 \text{ ml}$

t)  $8.9 \text{ sm}^3 = 8.9 \times 1 \text{ ml} = 8.9 \text{ ml}$

j)  $45.7 \text{ sm}^3 = 45.7 \times 1 \text{ ml} = 45.7 \text{ ml}$

(ii) Immisa  $\text{sm}^3$  ayaa ku jira:

b)  $120 \text{ ml}$                       t)  $1.98 \text{ ml}$                       j)  $260 \text{ ml}$

b)  $120 \text{ ml} = 120 \times 1 \text{ sm}^3 = 120 \text{ sm}^3$

t)  $1.98 \text{ ml} = 1.98 \times 1 \text{ sm}^3 = 1.98 \text{ sm}^3$

j)  $260 \text{ ml} = 260 \times 1 \text{ sm}^3 = 260 \text{ sm}^3$

### Layli 4

1. Immisa millilitir ayaa ku jira:

b)  $98.2 \text{ sm}^3$                       t)  $1 \text{ sm}^3$                       j)  $2658 \text{ sm}^3$                       x)  $198.57 \text{ cm}^3$

2. Immisa  $\text{sm}^3$  ayaa ku jira:

b)  $7.5 \text{ ml}$                       t)  $120 \text{ ml}$                       j)  $519.6 \text{ ml}$                       x)  $690 \text{ ml}$

3. Taangi laydi ah ayaa qaada 120 l oo hoor ah marka uu buuxo

b) Immisa  $\text{sm}^3$  oo biyo ayaa ku jira?

t) Waa maxay joogga taangiga leh ballac 50 sm iyo dheerer 60 sm.

4. Taangi dhuluulubo ah oo xiran ayaa leh gacan 14 sm iyo joog 25 sm. U xisaabi:

b) Mugga  $\text{m}^3$  ahaan iyo  $\text{sm}^3$  ahaan

t) Qaadka taangiga litir ahaan iyo millilitir ahaan.

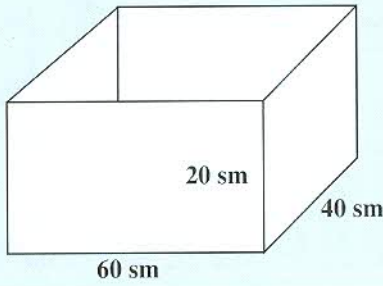
5. Taangi dhuluulubo ah ayaa waxa ku jira 4600 litir oo biyo ah.

Haddii gacanka taangigu yahay 10 m, waa maxay joogga biyaha ku jira taangiga.

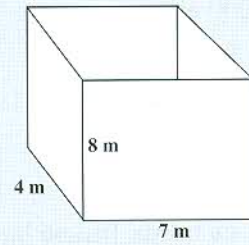


6. U xisaabi qaadka weelashan litir ahaan.

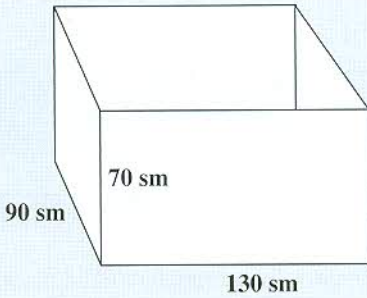
b)



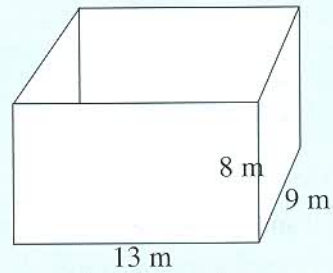
t)



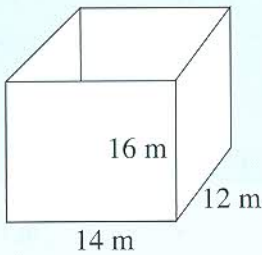
j)



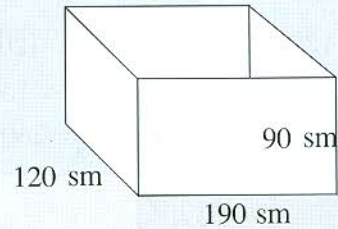
x)



kh)



d)



7. Taangi laydi ah oo uu jooggiisu yahay 2,5 m ayaa leh sal labajibbaarane dhiniciisu yahay 1.5 m. Taangiga waxa ka buuxa biyo. Immisa litir biyo ayaa taagiga ku jira?

8. Dhuluulubo ayaa leh joog 12 sm iyo mug  $1848 \text{ sm}^3$ .

Xisaabi:

b) qaadka dhuluulubada litir ahaan

t) gacan dhuluulubada .

**Tan**

$$1 \text{ ta (t)} = 1\,000 \text{ kg}$$

$$1 \text{ kg} = 1\,000 \text{ g}$$

$$1 \text{ t} = 1\,000 \text{ kg} = 1\,000 \times 1\,000 \text{ g} = 1\,000\,000 \text{ g}$$



7. Tahliil culayskiisu waa 62.3 kg. Waxa uu xiran yahay kabo miisaankoodu yahay 750 g. Waxa uu sidaa boorsada dugsiga oo culayskeedu yahay 10.5 kg. Haddii uu koro miisaan asiga oo gashan kabiiisa isla markaasna xambaarsan boorsada dugsiga. Maxa uu noqonaya akhrinta miisaanka
8. Warsame waxa uu beertiisa uga soo go'day gallay 2.69 tan, waxa uuna ku iibiyay jawaano 50kg qaad ah. Immisa jawaan oo gallay ah ayaa uu iibiyay?
9. Sanduuq ay ku jiraan 24 buug ayaa culayskiisu yahay 9.6 kg. Haddii sanduuqa oo maran culayskiisu yahay 1.2 kg. Waa maxay culayska buug kasta garaam ahaan. Haddii dhamman buugta ay isku culays yihiin?
10. Haddii Kaltuun u xir- xirto 180 kg oo bur ah  $\frac{1}{2}$  kg iyo  $\frac{1}{4}$  kg oo isla tiro le'eg, immisa xirmo oo  $\frac{1}{2}$  kg iyo  $\frac{1}{4}$  kg oo bur ah ayaa ay xir-xirtay?

# 9 WAQTI, XAWAARE IYO HEERKUL



## Naqtiin

1. 5 nin ayaa waxa ay ku qaadatay in ay guri daboolaan inta u dhexaysa 8.00 (g.h) ilaa 4.00(g.d) oo ay ku jirto 2 saac oo fasax ah. Immisa saac ayaa ay nimanka ku qaadatay in ay daboolaan guriga?

2. Immisa saac iyo daqiiqado ayaa ku jira

- b) 150 daq      t) 250 daq      j) 400 daq      x) 500 daq

3. Xisaabi

b)

saac	daq
4	45
+2	30

t)

saac	daq
6	15
+7	55

j)

saac	daq
12	29
+15	59

x)

saac	daq
7	36
+9	48

kh)

saac	daq
7	25
-4	30

d)

saac	daq
16	16
-12	50

r)

saac	daq
24	48
-19	55

s)

saac	daq
19	16
-14	58

sh)

saac	daq
2	16
x	5

dh)

saac	daq
5	42
x	16

c)

saac	daq
12	16
x	80

g)

saac	daq
9	18
x	123

5. Tareen ayaa ka kicitimay astaanka A ilaa astaanka B markii ay ahayd 0645 oo saac. Waxa uu tegay astaan B marka ay saacaddu ahayd 2015 oo saac. Immisa ayaa ay ku qaadatay tareenka in uu u socdo astaan A ilaa astaan B?

6. U tibaax waxa soo socda habka 24 saacadeedka:

- b) 2:16 g.d      t) 5:45 g.d      j) 11:24 g.d      x) 12:00 duhur

- kh) 3:48 g.h      d) 6:20 g.h      r) 7:30 g.h      s) 10:00 g.h

7. U tibaax waxa soo socda g.h iyo g.d

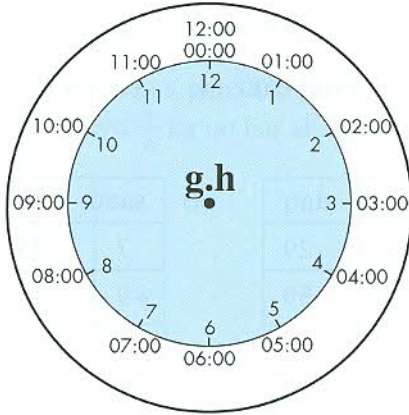
- b) 0118      t) 1245      j) 1306      x) 2108      kh) 2348

- d) 0259      r) 0615      s) 0930      sh) 1416      dh) 1800

8. Baabuur ayaa waxa ay ku qaadatay 3 saac min Hargeysa ilaa Berbara oo isu jira 175 km. waa maxay xawaaraha uu gaariga uu ku socday?
9. Bas ayaa ku socday 75km/saac fogaan ah 300 km. Immisa ayaa ay ku qaadatay baska safarka?

## Waqti

### saacadda 24 saac

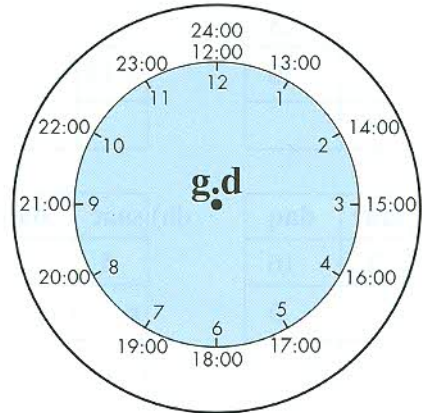


Xusuusin:

Saacaddan waxa ay muujinaysa habka 12 saac iyada oo la adeegsanaayo (g.h) iyo (g.d). (g.h) iyo (g.d) waxa ay muujinaayaan in tirinta saacaddu laga soo bilaabaayo saqda dhexe ilaa duhurkii ama duhurkii ilaa saqda dhexe.

Xusuusin

Darriiqo kale oo loo tiriyo saacadda min saqda dhexe soconaysa duhurka ka dib sida 13, 14 iyo waxa la mid ah. Tan ayaa lagu magacaabaa habka 24 saac . Waqtiga waxa loo qoraa 11:00, 12:00,13:00 iyo wax la mid ah. Saacadda ka soo jeeda midigta waxa ay muujinaysa habka 24 saac.



### Tusaalooyin:

Habka 12 - saac	Habka 24 - saac
1:30 (g.d)	13:30 saac
11:15 (g.d)	23:15 saac
8:45 (g.h)	08:45 saac
9:10 (g.h)	09:10 saac
3:20 (g.d)	15:20 saac

## Layli 1

- Qor waqtigan adiga oo adeegsanaya saacadda 12 saac:
 

b) 0700 saac      t) 1710 saac      j) 1300 saac      x) 2115 saac  
 kh) 2300 saac      d) 2030 saac      r) 1610 saac      s) 1930 saac
- Qor waqtigan adiga oo adeegsanaya saacadda 24 saac:
 

b) 10:05(g.h)      t) 4:08 (g.d)      j) 9:25 (g.d)      x) 11:30 (g.h)  
 kh)5:08 (g.d)      d) 3:34 (g.h)      r) Tobankii iyo nus (subaxnimo)  
 s) saqda dhexe      sh)labadii oo rubuc dhimman (subaxnimo) dh) Duhur
- Xisaabi saacadaha iyo daqiiqadaha u dhexeeya waqtigan:
 

b) 04 13 saac iyo 16 09 saac      t) 14 27 saac iyo 22 03 saac  
 j) 01 10 saac iyo 11 14 saac      x) 07 50 saac iyo 23 30 saac  
 kh) 03 14 saac iyo 11 04 saac      d) 09 16 saac iyo 16 04 saac
- Adeegso tusahan si aad uga jawaabto su'aa lahan.

	Sabti	Axad	Isniin	Talaado	Arbaco	Khamiis	
Muqdishu	09:15	12:15	08 15	11:00	10:15	18:30	Ambabax
Marka	11:30	14:30	10 30	13:15	12:15	20:45	Imaansho
Muqdishu	14:00	16:30	12 15	17:00	14:25		Ambabax
Wanlaweyn	15:00	17:30	13 15	18:00	15:25		Imaansho

- Goormuu baska marka ka taga Muqdishu maalinta isniinta?
  - Goormuu baska Wanlawey ka taga Muqdishu maalmaha sabtiga?
  - Goormuu baska Marka ka taga Muqdishu maalmaha khamiista?
  - Goormuu ayaa uu baska Wanlaweyn ka tegaa Muqdishu maamaha talaadadu?
  - Cumar waxa ay ku qaadataa 45 daqiiqo in uu u socdo astaanka baska, haddii uu rabo in uu gaaro baska wanlaweyn maalinta Axada, Goorma ayaa ay tahay in uu ka ambabaxo guriga?
  - Immisa ayaa ay qaadanaaya safarka Muqdishu ilaa Marka?
  - Sacdiyo waxa ay ku qaadata 15 daqiiqo in ay u socoto astaanka baska, haddii ay rabto inay gaarto baska Marka maalinta khamiista, Goormo aya ay tahay in ay ka ambabaxdo guriga?
- Jadwalka hoose waxa uu muujinayaa waqtiga tegida iyo immaansha min Jidda ilaa Muqdishu oo sii mara Jabuuti iyo Hargeysa.

Gegada dayuuradaha	Immaansho	Tegid
Jidda	10:15	
Jabuuti	13:30	14:00
Hargeysa	15:30	16:00
Muqdishu	19:15	

Intee ayaa ay dayaaraddu ku qaadanaysa inta u dhexaysa:

b) Jidda iyo Jabuuti

t) Jabuuti iyo Hargeysa

j) Hargeysa iyo Muqdishu

6. Axmed oo ku nool Marka ayaa qorsheeyay in uu ka soo gaaro dayaaradda Muqdishu ilaa jidda. Waxa ay qaadanaysa 2 saac iyo 15 daqiiqo in uu gaari ugu socdo min Muqdishu ilaa Marka. Waa maxay waqtiga u dambeeya oo ay tahay in uu ka soo ambabaxo si uu u soo gaaro dayaaradda?

## Xawaare

$$\text{Xawaare} = \frac{\text{fogaanta la socday}}{\text{waqti uu qaatay}}$$

Sida oo kale fogaanta = Xawaare x waqtiga

$$\text{Waqtiga} = \frac{\text{fogaanta la socday}}{\text{xawaaraha}}$$

Xawaare u adeegso X, W u adeegso waqti oo F u adeegso fogaanta, jidka waxa loo soo gaabin karaa :

$$X = \frac{F}{W} \quad \text{ama} \quad F = X \times W \quad \text{ama} \quad W = \frac{F}{X}$$

Halbeegyada xawaare waa

Kiloomiitr saacaddiiba (Km/sac)

Mitir ilbiriqsiyiiba (m/ilb)

Halbeegyada waqtiga waa

Kiloomitir (km) iyo Mitir (m)

### Tusaalooyin:

- (i) Nuur waxa uu gaari u soo kaxeeyay min Muqdishu ilaa Baydhabo oo isu jira 250 km . Haddii socdaalkiisa qaatay  $2\frac{1}{2}$  saac, maxa uu ahaa celcelinta xawaarihiisa?

$$\text{Siin: } F = 250\text{km} \quad W = 2\frac{1}{2} \text{ saac} \quad X = ?$$

$$X = \frac{F}{W} = 250 \div 2\frac{1}{2} = 250 \div \frac{5}{2}$$

$$X = 250 \times \frac{2}{5}$$

$$X = 100 \text{ km/saac}$$

- (ii) Cali waxa ay ku qaadatay 5 saac in uu dhammeystiro socdaalkiisa. Haddii uu ku socday 75 km/s. Immisa ayaa uu ahaa fogaanta safarkiisa.

$$X = 75 \text{ km/h} \quad W = 5 \text{ h} \quad F = ?$$

$$F = X \times W$$

$$F = 75 \times 5 = 375 \text{ km}$$

iii) Gaari tartan oo ku socda xawaare 180km/sac ayaa jaray fogaan 3600km. Immisa saacadood ayaa ay ku qaadatay in uu jaro fogaantan?

$$F = 3600 \text{ km} \quad X = 180 \text{ km/h} \quad W = ?$$

$$W = \frac{F}{X}$$

$$W = \frac{3600}{180}$$

$$W = 20 \text{saac}$$

### Layli 2

1. Caasho waxa ay ku qaadatay 6 saacadood in ay socoto fogaan 360 km. Maxaa uu ahaa xawaaraha ay ku waday gaariga km /sac ahaan?
2. Mahad waxa uu gaari ku waday 65 km / saac. Waxa gaari waday 9 saac. Immisa ayaa uu ahaa dhererka safarka?
3. Shimbir ayaa ku duulaysay xawaare ah 70 km / sac waxa ayna jartay 56 km. Immisa saac ayaa ay duuleysay?
4. Xabbad ayaa lagu ganay xawaare 250 km / sac si ay u haleesho bartilmaameedka waxa ay ku qaadatay  $2\frac{1}{2}$  ilbiriqsi. intee ayaa ay socotay min qori afkee ilaa bartilmaameedka?
5. Ayuub waxa ay ku qaadatay 60 daqiiqo in uu u socdo 4200 m. Maxa uu ahaa xawaaraha?
6. Ka tegida guriga iyo ku socodka 100 m /daq, Nuur waxa ay ku qaadatay 65 daq min guriga ilaa ilaa uu ka gaaro dugsiga. Intee ayaa dugsiga ka fogyahay guirga?
7. Cadnaan ayaa hortiisa u laaday kubbad asiga oo ku laaday xawaare 64 m/ilb. Haddii kubbado qaadatay  $2\frac{1}{2}$  ilbiriqsi si ay u gasho goolka, immisa ayaa uu cadnaan ka fogaa goolka waqtiga uu laadaayay kubhada l?
8. Bas ayaa bilaabay socdaal 400 km marka ay saacado ahayd 7.00 g.h haddii uu gaaro meeshiisa marka ay saacado ahayd 11.30 g.h, maxa uu ahaa celcelinta xawaarihiisa?
9. Bas ku socday 80 km / saac ayaa ku qaadatay 6 saac in uu ku dhammaystiro socdaalkiisa. Maxaa uu ahaa dherarka safarka?
10. Qassim waxa ay ku qaadatay  $3\frac{1}{2}$  saac in uu 98km uu baaskiil ku gaaro. Maxa uu ahaa celcelinta xawaarihiisa safarka?

### Celcelinta xawaaraha

Qaybo kala duwan ee safar ayaa qaadan karta waqti ka dheer ama ka gaaban qaybaha kale

Gebi ahaan xawaaraha safar waxa la yiraahda celceliska xawaaraha.

$$\text{celceliska xawaare} = \frac{\text{Wadarta fogaanta safarka}}{\text{Wadarta waqtiga uu qaatay}}$$

Wadarta waqtiga uu qaatay waxa ku jira marka: deg-deg ama tartiib loo wado, u joogsiga shidaal qaadasho, shaag beddelid, qado cunid, iwm.



## Tusaalooyin:

- (i) Gaari ayaa 180 km u socda 2 saac waxa kale uu 240 km u socday 4 saac. Xisaabi celceliska xawaare ee safarka oo idil

$$\text{Wadarta waqtiga uu qaatay} = 2 + 4 = 6 \text{ saac}$$

$$\text{Wadarta fogaanta safarka} = 180 + 240 = 420 \text{ km}$$

$$\begin{aligned} \text{Celceliska xawaaraha} &= \frac{\text{Wadarta fogaanta safarka}}{\text{Wadarta waqtiga uu qaatay}} \\ &= \frac{420}{6} \\ &= 70 \text{ km/h} \end{aligned}$$

- (ii) Gaari ayaa ku socday 80 km / sac muddo 2 saac, ka dib waxa ka fariistay shaag. Waxa ay qaadatay  $\frac{1}{2}$  saac hagaajinteeda. Ka dibna waxa uu ku sii socday 100 km/saac muddo  $1\frac{1}{2}$  saac inta uusan gaarin halka uu ku socday?

$$\text{Fogaanta uu socday inta aan shaaga fariisan} = X \times W = 80 \times 2 = 160 \text{ km}$$

$$\text{Fogaanta uu socday inta shaaga la hagaajinayay} = X \times W = 0 \times \frac{1}{2} = 0 \text{ km}$$

$$\text{Fogaanta uu socday ka dib markii shaaga la hagaajiyay} = X \times W = 100 \times 1\frac{1}{2} = 150 \text{ km}$$

$$\text{Wadarta fogaanta uu socday} = 160 + 150 = 310$$

$$\text{Wadarta waqtiga uu qaatay} = 2 + \frac{1}{2} + 1\frac{1}{2} = 4 \text{ saac}$$

$$\text{Celceliska xawaaraha} = \frac{\text{Wadarta fogaanta safarka}}{\text{Wadarta waqtiga uu qaatay}} = \frac{310}{4} = 77.5 \text{ km/saac}$$

- (iii) Darawal ayaa ka tegay magaalada A saacaddu markey ahayd 8.30 g.h. asigo oo u socday ilaa magaalada B. Waxa uu ku socday xawaare ah 60 km/ sac waxa uuna socday  $4\frac{1}{2}$  saac. Waxa uu u istaagay qado muddo 30 daqiiqo. Ka dibna waxa uu ku sii socday 120km / sac waxa uuna tegay magaalada B  $2\frac{1}{2}$  saac ka dib

b) Waa maxay fogaanta u dhexaysa magaalada A iyo B?

t) Intee ayaa ay ku qaadatay min magaalada A ilaa Magaalada B?

j) Waa maxay celceliska xawaaraha safarkiisa oo idil

x) Goormuu tegay magaalada B

$$\text{b) fogaanta uu socday qadada ka hor} = X \times W = 60 \times 4\frac{1}{2} = 270 \text{ km}$$

$$\text{t) fogaanta uu socday inta uu qadaynaayay} = X \times W = 0 \times \frac{1}{2} = 0 \text{ km}$$

$$\text{j) fogaanta uu socday qadada ka dib} = X \times W = 120 \times 2\frac{1}{2} = 250 \text{ km}$$

$$\text{Wadarta fogaanta uu socday} = 270 \text{ km} + 0 \text{ km} + 250 \text{ km} = 520 \text{ km}$$

$$\text{Wadarta waqtiga ay ku qaadatay} = 4\frac{1}{2} + \frac{1}{2} + 2\frac{1}{2} = 7\frac{1}{2} \text{ saac}$$

$$\begin{aligned}
 \text{Celceliska xawaaraha} &= \frac{\text{Wadarta fogaanta safarka}}{\text{Wadarta waqtiga uu qaatay}} \\
 &= \frac{520}{7 \frac{1}{2}} \\
 &= 520 \times \frac{15}{2} \\
 &= 69 \text{ km/saac}
 \end{aligned}$$

x) Maadaama Wadarta waqtiga ay ku qaadatay  $7 \frac{1}{2}$  saac

Waqtiga imaanshaha  $8.30 + 7.30 = 1600$  saac

ama  $16.00 - 12.00 = 4.00$  g.d.

### Layli 3

- Nuur waxa ay ku qaadatay 2 saac in uu socdo 40 km ee ugu horreeya safarkiisa. Ka dib  $\frac{1}{2}$  ayaa uu hakaday. 30 km ee ku xigay waxa uu socday 1 saac. Waa maxay celceliska xawaarihiisa safarta oo idil?
- Cumar oo wata baabuur ayaa  $1 \frac{1}{2}$  saac u socday 125 Km.  $1 \frac{1}{2}$  saac waxaa uu u istaagay rar shaminto. Ka dibna  $1 \frac{1}{2}$  saac ayaa uu u socday 120 Km si uu u gaaro meeshii uu ku socday. Waa immisa xawaarihiisa safarka oo dhan.
- Mahad ayaa  $2 \frac{1}{2}$  saac u socday 150 Km, ka dibna  $3 \frac{1}{2}$  saac u socday 270 Km. Waa immisa celceliska xawaarihiisa?
- Oday ayaa dabaal uga gudbey webi ballaciisu yahay 100 mitir muddo 12 daqiiqo ah, oo ku soo laabtay 13 daqiiqo. Raadi celceliska xawaaraha dabaalashadiisa?
- Luul ayaa 150Km u socotay 2 saac, ka dibna 180Km u socotay 3 saac.
  - Waa maxay wadarta fogaanta ay socotay?
  - Waa immisa wadarta saacadaha ay socotay?
  - Waa immisa celceliska xawaaraheeda?
- Bas ayaa  $2 \frac{1}{2}$  saac u socday fogaan 240 Km ah. Waa immisa celceliska xawaarihiisa?
- Ruqiyo ayaa afar saacadood ku socotay 90 Km/Saac, ka dibna hal saac u joogsatay qado. Haddana 2 saacadood bay ku sii socotay 65Km/Saac. Waa immisa celceliska xawaaraheeda safarka oo idil?
- Sahra ayaa  $1 \frac{1}{2}$  saac ku socotay 120Km, ka dibna 240 Km ku socotay 100Km/saac.
  - Immisa ayaa uu qaatay safarka oo dhan?
  - Waa immisa celceliska xawaaraheeda safarka oo dhan.
- Nin mooto wata ayaa 6 saacadood ku socday 60Km/Saac. Immisa saacadood ayaa ay ku qaadanaysaa haddii uu ku socdo 80Km/Saac isla fogaantii?
- Tareen ayaa 30 daqiiqo socday 45Km. Immisa ayaa ay ku qaadanaysaa fogaan dhan 75 Km.
- Aadan ayaa 4 saac ku socday 75 Km/saac. Ka dibna 75Km/Saac. Ka diban 30 daqiiqo ayaa

uu u joogsaday in uu shir ka qayb galo. Isla fogaantii ayaa uu ku soo laabtay isaga oo ku socda 60Km/Saac.

b) Soo saar fogaanta goobta shirku.

t) Waa immisa celceliska xawaarihiisa safarka oo dhan.

12. Haweenay ayaa baabuur ku socotay magaalo X ilaa magaalo Y. Safarka waxa ay bilowday 6:00 g.h. Waxa ay ku socotay 100 Km/Saac muddo  $1\frac{1}{2}$  saac, ka dibna waxa ay isu taagtay quraac muddo 30 daqiiqo ah. Ka dibna waxa ay  $\frac{1}{2}$  ku socotay 120 Km/Saac muddo 3 saac ah ilaa ay soo gaarto magaaladii ay rabtay.

b) Waa immisa fogaanta magaalada X ilaa Y.

t) Immisa ayaa ay ku qaadatay in ay ku safarto magaalada X ilaa Magaalada Y.

j) Goorma ayaa ay soo gaartay magaalada Y.

13. Sucdi ayaa ka tegtay magaalada B oo aadday magaalada T saacaddu markii ay ahayd 7:30 g.h. Muddo shan saacadood ah waxa ay ku socotay 90Km/Saac. Waxa ay u istaagtay qado oo qaadatay  $1\frac{1}{2}$  saac. Ka dibna waxa ay 8 saacadood ku socotay 105 Km/Saac si ay u gaarto magaalada T.

b) Waa immisa fogaanta B ilaa T?

t) Immisa saacadood ayaa ay u socotay B ilaa T?

j) Immisa ayaa uu ahaa celceliska xawaaraheeda.

x) Goorma ayaa ay gaartay T?

## Heerkul

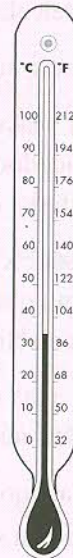
**Heerkul waa inta ay walaxi kulushahay ama ay qabowdahay.**

Heerkulka walaxi waxa lagu cabbiraa kulbeege. Halbeegga heerkulka lagu cabbirro waa digrii Sentigarayt oo loo qoro °C.

Biyuhu waxa ay ku karaan 100°C.

Heerkulka caadiga ah ee jirka aadanaha waa 37°C

biyuhu waxa ay baraf ku noqdaan 0°C

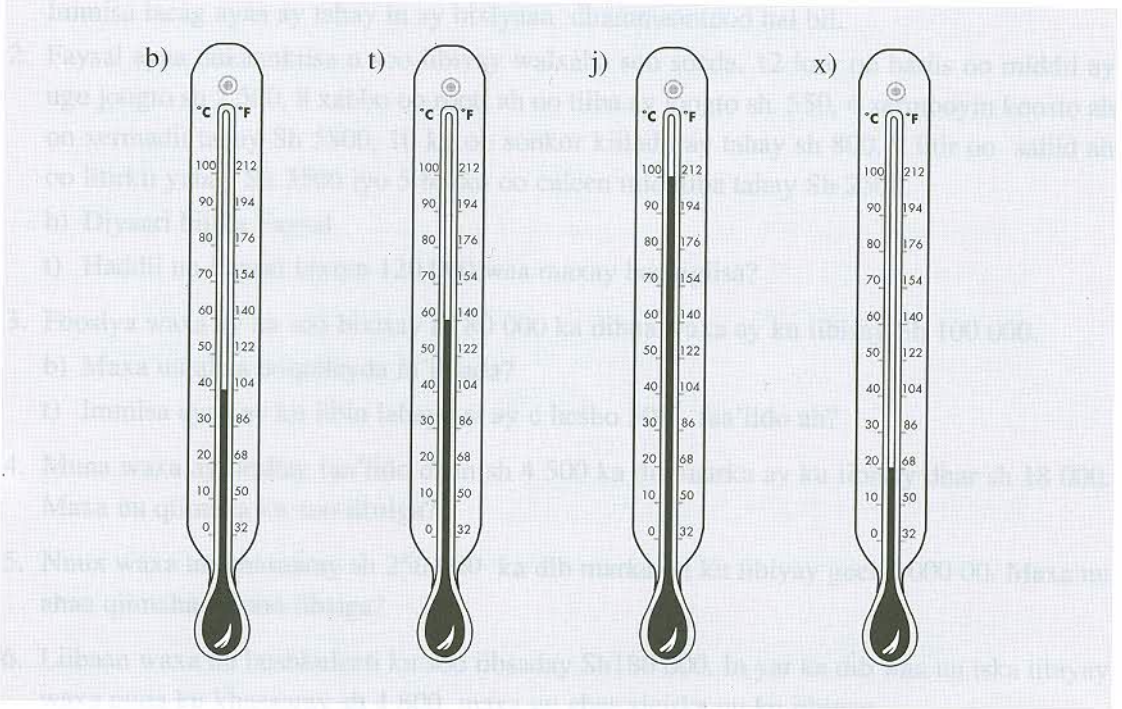


## Waxqabad

1. Qiyaas heerkulka biyaha qabow ee qasabadda ama ceelka.
2. Qaad heerka heerkulka biyaha qabow oo diwaangeli. Qiyaastaadu ama intaa ma u dhowdahay?
3. Xoogaa biyo kulayli ilaa inta ay ka karaan (kulayl ka noqonayaan). Heer-kulkooda ku qiyaas kulbeeg. Waa immisa heerkulka biyaha.

## Layli 4

1. Akhri heerkulka uu kulbeeg kastaa uu muujinayo.



2. Saadaasha hawada ayaa sheegtay goor duhur ah heerkulka magaalooyin kala duwan:

Nayroobi 20.8°C	Addis Ababa 15.5°C	Muqdisho 20.2°C
Hargeysa 35.7°C	Jabuuti 36.2°C	Kambala 21.6°C

Waa maxay faaqa heerkulka u dhexeeya:

- |                           |                             |
|---------------------------|-----------------------------|
| b) Nayroobi iyo Kambala   | t) Addis-Ababa iyo Muqdisho |
| j) Jabuuti iyo Kambala    | x) Addis-ababa iyo Hargeysa |
| kh) Muqdisho iyo Nayroobi |                             |

3. Heerkulka magaalo ayaa waxa uu ahaa 23.9°C subaxdii, 32.1°C qadadii iyo 24.5°C habeenkii; waa maxay faraqa u dhexeeya heerkulka:

- b) Qadadii iyo subaxii?
- t) Subaxii iyo habeenkii?
- j) Qadadii iyo habeenkii

4. 9:00 sabaxnimo (g.h) heer-kulku waxa uu ahaa  $18^{\circ}\text{C}$ . Daqiiqad kasta waxa kor u kacaayay  $0.5^{\circ}\text{C}$ . Maxaa heer-kulku noqonayaa marka saacaddu tahay 9.08 subaxnimo (g.h.)?
5. Heer-kulka ugu hooseeya ee bilaha Luulyo, Agoosto iyo Sibtembar waa  $12^{\circ}\text{C}$ . Immisa maalmood ayuu heer-kulka ugu hooseeyaa oo uu ka hooseeyay  $12^{\circ}\text{C}$ ?
6. Heerkul ayaa hoos ugu dhacay  $8.2^{\circ}\text{C}$  haddana ilaa  $16^{\circ}\text{C}$ . Maxaa uu ahaa heer-kulka dhicitaanka ka hor.
7. Heer-kul ayaa kor uga kacay min  $4^{\circ}\text{C}$  ilaa  $22^{\circ}\text{C}$ . Waa immisa digrii intaasi?

# 10 LACAG

## Faa'iido iyo khasaaro



### Naqtiin

#### Layli 1

1. Iskaashato bulsho ayaa leh 372 xubnood. Haddii xubin kasta bixiso sh 5 000 bishiiba, Immisa lacag ayaa ay tahay in ay bixiyaan dhammaantood hal bil.
2. Faysal ayaa dukaankiisa u soo iibiyay walxaha soo socda, 12 loor oo bariis oo middii ay ugu joogto sh 2 500, 8 xabbo oo rooti ah oo tiiba ay joogto sh. 550, 4 xermooyin koosto ah oo xermadii tahay Sh 5800, 10 kg oo sonkor kiiladii ay tahay sh 800, 9 litir oo saliid ah oo litirkii yahay Sh 3500 iyo 5 baako oo caleen middiiba tahay Sh 2500.
  - b) Diyaari biilka Faysal
  - t) Haddii uu Faysal bixiyo 120 000 waa maxay baaqigiisa?
3. Foosiya waxa ay ka soo bixisay ri' 80 000 ka dibna waxa ay ku iibisay Sh 100 000.
  - b) Maxa uu ahaa boqolleyda fa'iidada?
  - t) Immisa ayaa ay ku iibin lahayd si ay u hesho 50% faa'iido ah?
4. Muna waxa ay heshay faa'iido dhan sh 4 500 ka dib marka ay ku iibisay dhar sh 18 000. Maxa uu qiimaha ku soo iibsiga?
5. Nuux waxa uu khasaaray sh 250 000 ka dib marka uu ku iibiyay geel 2 000 00. Maxa uu ahaa qiimaha ku soo iibsiga?
6. Liibaan waxa uu bushkuleeti ku soo iibsaday Sh180 000. In yar ka dib waa uu iska iibiyay waxa uuna ku khasaaray sh 4 800. maxa uu ahaa sicirka uu ku iibiyay
7. Maryan waxa ay silsilad dahab ah ku soo iibsatay Sh. 320 000. In yar ka dib waxa ay ku iibisay Sh 240 000. Maxa uu ahaa boqolleyda khasaaraha ku dhacday?
8. Dhar gade ayaa 40% oo faa'iido ka hela dharkuu iibiyaba . Haddii uu iibiyo dhar ah Sh 8 000. Immisa ayaa uu faa'iidaya?
9. Tikitka dayaarad ee dadka waa weyn waa Sh.120 000, kan carruurtana waa Sh.60 000. Fawsiya waxa wadatay saddexdeeda cunug si ay ugu safarto dayaarad. Immisa ayaa ay bixinaysa dhammaantooda?

## Boqolleyda faa'iidada iyo boqolleyda khasaaraha

Faa'iido = qiimaha iska iibinta – qiimaha ku soo iibsiga

Qiiimaha ku soo iibsiga = qiimaha iska iibinta – Faa'iido

qiimaha iska iibinta = qiimaha ku soo iibsiga + Faa'iido

Khasaaro = qiimaha ku soo iibsiga – qiimaha iska iibinta

Qiiimaha ku soo iibsiga = khasaaro + qiimaha iska iibinta

qiimaha iska iibinta = qiimaha ku soo iibsiga – Khasaare

$$\begin{aligned} \text{Boqolleyda faa'iidada} &= \frac{\text{faaiido}}{\text{Qiimaha ku soo iibsiga}} \times 100\% \\ \text{Boqolleyda khasaaraha} &= \frac{\text{khasaaraha}}{\text{Qiimaha ku soo iibsiga}} \times 100\% \end{aligned}$$

**Tusaalooyin:**

(i) Axmed waxa uu ri' ku soo gatay Sh 200 000 ka dibna waxa uu iskaga iibiyay Sh. 230 000. Xisaabi boqolleyda faa'iidada

$$\text{Qiimaha ku soo iibsiga} = \text{Sh 200 000} \quad \text{qiimaha iska iibinta} = \text{Sh 230 000}$$

$$\begin{aligned} \text{Faa'iidada} &= 230\,000 - 200\,000 \\ &= \text{Sh 3000} \end{aligned}$$

$$\begin{aligned} \text{Boqolleyda faa'iidada} &= \frac{\text{faaiido}}{\text{Qiimaha ku soo iibsiga}} \times 100\% \\ &= \frac{3000}{200000} \times 100\% = 15\% \end{aligned}$$

(ii) Canab waxa ay sh. 500 000 ku soo gadatay 5 kartoon oo baasto ah. Ka dibna waxa ay ku iibisay sh. 450 000. Xisaabi boqolleyda khasaaraheeda

$$\text{Qiimaha soo gadashada} = \text{Sh 500 000} \quad \text{qiimaha iska iibinta} = \text{Sh 450 000}$$

$$\begin{aligned} \text{Khasaare} &= \text{qiimaha ku soo gadashada} - \text{qiimaha iska iibinta} \\ &= 500\,000 - 450\,000 \\ &= \text{Sh 50 000} \end{aligned}$$

$$\begin{aligned} \text{Boqolleyda Khasaaraha} &= \frac{\text{khasaaraha}}{\text{Qiimaha ku soo iibsiga}} \times 100\% \\ &= \frac{50000}{500000} \times 100\% \\ &= 10\% \end{aligned}$$

(iii) Ganacsade ayaa ku soo iibsaday sarwaal sh 220 000 ka dibna iska iibiyay waxa uuna ka helay 50% faa'iido ah. Xisaabi qiimaha uu iskaga iibiyay

$$\text{Qiimaha ku soo iibsiga} = \text{Sh 220 000} \quad \text{qiimaha iska iibinta} = 50\%$$

$$\text{Boqolleyda faa'iido} = \frac{\text{faaiido}}{\text{Qiimaha ku soo iibsiga}} \times 100\%$$

$$50\% = \frac{\text{faaiido}}{220\,000} \times 100\%$$

$$50 = \frac{\text{faaiido} \times 100}{220\,000}$$

$$\text{faaiido} = 50 \times 22\,000$$

$$\text{faaiido} = \text{Sh 110 000}$$

$$\text{Qiimaha iska iibinta} = \text{qiimaha ku soo iibsiga} + \text{qiimaha iska iibinta}$$

$$\text{Qiimaha iska iibinta} = 220\,000 + 110\,000$$

$$\text{Qiimaha iska iibinta} = \text{Sh 330 000}$$





Nisaabka qalinka waxa uu le'eg yahay 200 dirham (ugu dhawaan 624 g)

Nisaabka dhahabka waxa uu le'eg yahay  $\frac{200}{7}$  Dirhaam (ugu dhawaan  $89\frac{1}{7}$ g)

Haddii qof ay ku waajibto bixinta sakada, waa in lagu xisaabiyaa cabbir joogta ah ( $\frac{1}{40} = 2.5\%$ )

### Tusaalooyin:

- i) Islaan ayaa haysata hal kg oo dahab ah. Xisaabi sakada ku waajibtay ka dib markii ay ka soo wareegatay hal sano oo hijriyada ah?

$$\begin{aligned} \text{Inta sakada} &= 2.5\% \text{ ee dahabkeeda} = \frac{2.5}{100} \times 1000\text{g} \\ &= \frac{25}{1000} \times 1000 = 25 \text{ g oo dahab ah} \end{aligned}$$

### Layli 2

- Xuseen ayaa raadiyow ku gatay sh. 120 000 waxaana uu iskaga iibiyey khasaare 30% ah. Xisaabi qiimihiisa iska iibinta.
- Isaga oo iskaga iibiyey dhul beereed Sh 860 000, beeralay ayaa helay faa'iido dhan 40%. Immisa ayaa uu ku gatay dhulka?
- Isaga oo uu isgaya iibiyey sac Sh 80 000, hilibile ayaa helay faa'iido 20% ah. Waa immisa qiimaha gadashada ee saca?
- Abshir waxa uu haystay sh.80 000 hal sano hijriya oo buuxda. Xisaabi sakada abshir ku waajibtay in uu ka bixiyo lacagtan.
- Dukaanle ayaa damcay in uu ka bixiyo sako alaab iyo lacag. Ka dib marka ay ka soo wareegatay sanad hijriya ah. Waxa uu arkay in uu haysto:  $1\frac{1}{2}$  kg oo dahab ah, 4kg oo qalin iyo sh 200 000. Xisaabi sakada ku waajibtay in uu bixiyo ay tahay?
- Husni Waxa uu ganacsi ku bilaabay sh.150 000. Sanad hijriye ka dib Xoolahiisa waxa ay gaareen 200 000. Xisaabi sakada uu Husni bixiyay dhammaadka sanadka
- Nin ayaa damcay in uu ka bixiyo sako alaab iyo lacag. Ka dib marka uu xisaabiyay waxa uu haysto waxa uu arkay in uu haysto:
  - $2\frac{1}{2}$  kg oo dahab
  - 5kg oo qalin
  - sh.250.000
 Xisaabi sakada ku waajibtay in uu bixiyo.
- Qof ayaa lacagtiisa gaartay sh 1 600 000. Xisaabi sakada in uu bixiyo ay tahay marka ay ka soo wareegto hal sano oo hijriye ah.

# 11 SAAMI IYO SAAMIGAL

## saamigal

Husni waxa uu haystay 3 qalin Xaliimana waxa ay haysatay 4 qalin. Qalin kasta waxa uu qiimahiisu ahaa sh 4. Saamiga tirada qalimaanta Husni ilaa tirada qalimaanta Xaliimo waa

$$\frac{\text{tirada qalimaanta Husni}}{\text{tirada qalimaanta Xaliimo}} = \frac{3}{4} \text{ ama } 3:4$$

Saamiga qiimaha qalimaanta Husni iyo Qiimaha qalimaanta Xaliimo waa

$$\frac{\text{qiimaha qalimaanta Husni}}{\text{qiimaha qalimaanta Xaliimo}} = \frac{3 \times 4000}{4 \times 4000} = \frac{12000}{16000} = \frac{12}{16} \text{ ama } 12:16$$

Saamiga u dhexeya tirada qalimaanta oo isku nooca ah

$$= \text{Saamiga ka dhexeeya qiimaha qalimaanta.}$$

Taas waa  $\frac{3}{4} = \frac{12}{16}$ . (Haddaba saamiyada  $\frac{3}{4}$  iyo  $\frac{12}{16}$  waa isle'eg yihiin).

Weedhan waa saamigal.

Si guud ahaan saamigal waa tibaax xirriirinaysa labo saami ama wax ka badan

$$= \frac{3}{4}, \frac{9}{12} = \frac{a}{b} = \frac{c}{d} \text{ ama } a:b = c:d \text{ halka, } b \neq 0, d \neq 0$$

### Tusaalooyin:

b)  $\frac{2}{3}, \frac{20}{30}$

$$\frac{20}{30} = \frac{2}{3} (\div 10)$$

$$\therefore \frac{2}{3} = \frac{20}{30}$$

t)  $\frac{3}{15}, \frac{4}{20}$

$$\frac{3}{15} = \frac{1}{5} (\div 3)$$

$$\frac{4}{20} = \frac{1}{5} (\div 4)$$

$$\therefore \frac{3}{15} = \frac{4}{20}$$

j)  $\frac{5}{6}, \frac{10}{18}$

$$\frac{10}{18} = \frac{5}{9} (\div 2)$$

$$\therefore \frac{5}{6} \neq \frac{10}{18}$$

## Astaamaha saamigalka

Baaritaanka taranka isweydaarka saamiyada saamigalsan: In statement of taranka isweydaarka:

$$\frac{3}{4} \neq \frac{9}{12}$$

$$3 \times 12 = 36 \text{ iyo } 4 \times 9 = 36$$

Hawraarta saamigalka, taranka isweydaarka waa isle'eg yihiin

Hawraaraha saamigalka haddii tibix ay tahay doorsoome, waxa la adeegsan karaa astaanta taranka isweydaarka si loo xisaabiyo doorsoomaha

## Tusaalooyin:

$$\text{Xisaabi 'n-ta' ku jirta} = \frac{2}{5} = \frac{3}{n}$$

$$2n = 5 \times 3 \quad (\text{Isle'ekaysii taranka isweydaarka})$$

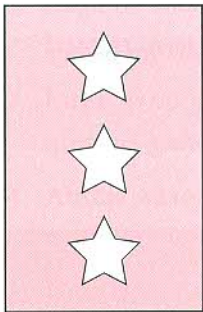
$$\frac{2n}{2} = \frac{15}{2} \quad (\text{U qaybi 2})$$

$$n = 7 \frac{1}{2}$$

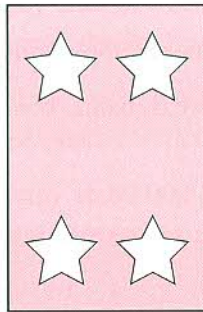
## Layli 1

1. Qor tirada kutirsanayaasha afarta urur si loo qoro hawraarta saamigalka sax ah ee tirada kutirsanayaasha ururka

$$\frac{\text{tirada kutirsanayaasha ururka 1}}{\text{tirada kutirsanayaasha ururka 2}} = \frac{\text{tirada kutirsanayaasha ururka 3}}{\text{tirada kutirsanayaasha ururka 4}}$$



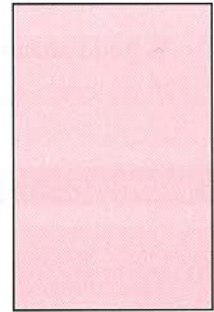
(1)



(2)



(3)



(4)

2. Xisaabi in ay isle'eg yihiin lamaanayaasha saamiyada iyo in kale.

b)  $\frac{2}{5}, \frac{6}{5}$

t)  $\frac{2}{3}, \frac{3}{2}$

j)  $\frac{7}{6}, \frac{14}{3}$

x)  $\frac{5}{8}, \frac{2.5}{4}$

kh)  $\frac{11}{7}, \frac{77}{47}$

d)  $\frac{4}{5}, \frac{7}{7.5}$

3. Xisaabi doorsoomaha mid kasta oo soo socda:

b)  $\frac{3}{4} = \frac{x}{6}$

t)  $\frac{b}{15} = \frac{4}{5}$

j)  $\frac{21}{49} = \frac{6}{a}$

x)  $\frac{5}{9} = \frac{40}{c}$

kh)  $\frac{18}{y} = \frac{9}{10}$

d)  $\frac{1}{2} = \frac{t}{15}$

r)  $\frac{2}{3} = \frac{r}{100}$

s)  $\frac{1}{8} = \frac{k}{100}$

4. Saamiga Dhererrada Cali iyo Nuur waa  $\frac{6}{7}$ . Haddii dhererka Nuur yahay 175 sm, waa maxay dhererka Cali

b) 175sm

t) 185 sm

j) 90sm

x) 150sm

5. Ganacsade ayaa alaab ku soo iibsaday sh. 825 000. Ka dibna waa uu iska iibiyey, waxaana uu ka helay faa'iido. Haddii saamiga ka dhexeeya fa'iidada iyo qiimaha ku soo iibsiga yahay  $\frac{2}{11}$ . Raadi faa'iidada.

# Saamigal toos ah

Saamigalku waxa uu naga caawiyaa isgarabdhigga xaddiyo iyo walxo. Marka uu kordho hal xaddi ka kale waxa uu u kordhi karaa isla dhaqsiihii.

Tirada saacadaha	Qiimahooda shillin ahaan
1	5000
2	10 000
3	15 000
4	20 000
5	25 000

Tusahan waxa uu muujinaya tirada saacadaha iyo qiimayaashooda shillin ahaan.

Qiimaha hal saac = sh.5000

Qiimaha labo saac = sh. 10000

Qiimaha saddex saac = sh. 15000 iwm

Markii ay korodho tirada saacadaha sidoo kale qiimahoodu waa kordhaya. Tirada iyo qiimaha saacaduhu waxa ay u kordhaan si saamigal toosan ah.

labo saacadood Qiimahoodu sh.10 000 marka tirada saacaduhu ay u kordhaan 4 sida oo kale waxa uu u kordhaa qiimaha sh 20 000. Labada xaddi waxa ay isku yihiin saamigal toosan.

## Tusaalooyin:

(i) Haddii qiimaha 7 buug uu yahay sh. 7 000, Waa maxay qiimaha 13 buug oo la nooc ah? Marka tirada buugaagta kordhaan, sidoo kale qiimahoodu waa kordhaa:

$$\frac{\text{tirada buugaagta xaaladda hore}}{\text{tirada buugaagta xaaladda labaad}} = \frac{\text{qiimaha buugaagta xaaladda hore}}{\text{qiimaha buugaagta xaaladda labaad}}$$

$$\frac{7}{13} = \frac{7000}{x}$$

$$13 \times 7000 = 7 \times x \text{ (Iyada oo la adeegsanayo taranka iswedaarka)}$$

$$\frac{13 \times 7000}{7} = \frac{7 \times x}{7} \text{ (U qaybi labada 7)}$$

$$x = \text{Sh } 13\,000 \quad \text{Qiimaha 13 buug isla nooca ah waa sh. 13 000.}$$

(ii) Qiimaha 5 shaar waa sh. 420 000. Waa Immisa qiimaha 12 shaar oo la nooc ah? Hel qiimaha hal shaar ka dibna qiimaha 12 shaar.

$$1 \text{ shaar qiimahiisu waxa uu noqonaya } \frac{420000}{5} = \text{Sh } 84\,000$$

$$\therefore 12 \text{ shaar waxa ay noqonayaan } 84000 \times 12 = 1\,008\,000$$

(iii) Qiimaha 8 funaanad waa sh. 6000. Haddii Cabdi uu bixiyo sh 1 500, immisa funaanad ayaa uu iibsanaa karaa?

$$\text{Iyada oo la adeegsanay saamigal} \quad \therefore \frac{8}{a} = \frac{6000}{1500}$$

$$a \times 6000 = 8 \times 1500$$

$$a = 12\,000 \div 6000$$

$$a = 2 \text{ funaanadood}$$

Cabdi waxa uu soo iibsaday 2 funaanadood

## Layli 2

1. 20 Loor oo liimo ah waa 300 000. Waa immisa qiimaha 175 loor oo la nooc ah?
2. 6 buug qiimahoodu waa sh.2100. Waa maxay qiimaha 15 buug?
3. 4 kartoon oo saytuun ah waa sh1400. Waa immisa qiimaha 25 kartoon oo saytuun ah?
4. Culayska 7 kartoon waa 315 kg . Waa maxay culayska 16 kartoon ?
5. Taksiga axmed waxa uu isticmaalay 6 litir oo shidaal ah si uu ugu safro 60 km.
  - a) Immisa shidaal ayaa uu isticmaalaya si uu ugu safro
    - i) 105 km?      ii) 75 k      iii) 225 km?
    - iv) 90 km?      v) 205 km?
  - t) Ilaa halkee ayaa uu gaaraya hadii lagu shubo
    - i) 2 litir?      ii) 13 litir?      iii) 225 litir?
    - iv) 20 litir?      v) 303 litir?
6. Qiimaha 12 shaar waa sh. 35 000. Waa Immisa qiimaha shaar oo la nooc ah.
7. Xassan waxa uu ku qaatay sh. 52500 hawl ah rogid alaab muddo 3 saacadood. Immisa ayaa uu ku qaadanaya:
  - b)  $2\frac{1}{2}$  saac      t) 18 saac      j) 6 saac      x) 9 saac      kh)  $8\frac{1}{2}$  saac

## Saamigal aan toos ahayn

Xaddiyado mar walba ma aha saamigal toosan. Tusaha waxa uu muujinaya in marka shaqaalaha kordho tirada maalmaha shaqada la qabanaayo waa isdhimaysa.

Tirada shaqaalaha	Tirada maamaha
2	30
3	20
12	5
60	1

## Tusaalooyin:

- (i) 12 shaqaale ayaa ku dhammeyn kara shaqo 5 maalmood. Laakiin 60 shaqaale waxa ay ku dhammeyn karaan isla shaqada hal maalin.
  - 1 shaqaale waxa uu ku qaban karaan shaqada 60 maalin
  - 2 shaqaale waxa ay ku qaban karaan shaqada 30 maalin
  - 3 shaqaale waxa ay ku qaban karaan shaqada 20 maalin

Tirada shaqaalaha x tirada maalmaha = 60
- (ii) 5 nin waxa ay ku qaadatay 8 saacadood si ay u dhisaan derbi. Immisa ayaa ay ku qaadanaysa 4 nin, oo ku shaqaynaya dhaqsi la mid ah, si ay u dhisaan isla derbiga?
  - 5 nin waxa ay ku qaadatay 8 saacadood

1 nin waxa ay ku qaadanaysa  $(8 \times 5)$  saac = 40 saac

4 nin waxa ay ku qaadanaysa  $\frac{40}{4}$  saac = 10 saac

(iii) 3 shaqaale ayaa ku dhammeyn kara shaqo 12 maalmood. Immisa maalmood ayaa ay 9 nin ku dhammeyn karaan isla shaqadaas?

3 shaqaale 12 maalmood

1 shaqaale  $3 \times 12$  maalmood

9 shaqaale  $(3 \times 12) \div 9$

= 4 maalmood

### Layli 3

1. Lix nin ayaa 13 maalmood ku nadiifin kara qayb dhul ah. Immisa ayaa ay ku qaadanaysa 4 nin in ay nadiifiyaan isla dhulkaas?
2. Cali oo gaari ku kaxaynaayo xawaare Celceliskiisu yahay 180 km/sac, ayaa ku qaadatay 6 saac in uu safro min eldheer ilaa Muqdishu. Immisa ayaa ay ku qaadanaysa marka uu gaariga ku kaxeeyo xawaare celceliskiisu yahay 60km/saac?
3. Marka qiimaha kiilo sonkor ay ahayd sh 7 000 guri loo qorsheeyo in uu bishii isticmaalo 10 kg. Haddii qiimaha sonkorta kor ugu kacdo ilaa sh. 18 000 kiiladii. Immisa kiilo ayaa loo qorshayn karaa isla guriga bishii?
4. Shan fuundi ayaa ku hagaajiya 12 saacadood sagxada guriga. Immisa ayaa ay ku qaadanaysa 16 fuundi?
5. 14 neef oo lo' ah ayaa ku cunay 30 maalmood in caws ah. Intee ayaa uu cawska ku dhmmaanaya marka tirada lo'da loo dhimo 6?
6. Nin ayaa 5 saac ku socday 25 km. Immisa saac ayaa ay ku qaadanaysa 45 km asiga oo ku socda isla xawaarihii?
7. Warshad caano ayaa 46 litir ka soo saarta 4kg oo subug ah. Immisa litir oo caano ah ayaa ay warshaddu u baahan tahay in ay ka soo saarto 200kg oo subag ah?

# 12 ISKEEL SAWIREED

## Iskeel toosan

Iskeel sawireed waxa loo adeegsadaa ballaarinta ama dhimista qorshe ama hummaag.

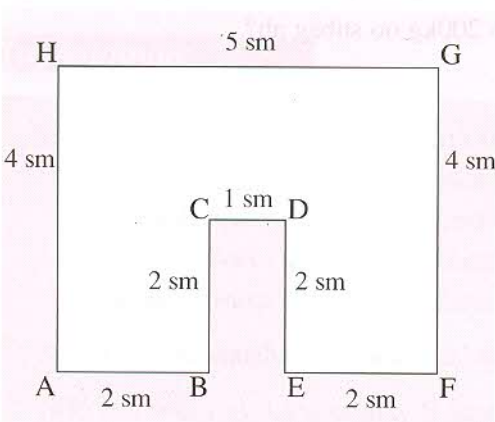
Qorshe guri laydi ah, oo ah dherer 20 m iyo ballac 15 m, waxaa lagu sawiri karaa buugga qoraalka ama wax u eg baaxadda buugga. Hase yeeshee qorshaha waxa loo qaadan karaa iskeel sawireed

U tixgeli qorshaha guriga iskeellada soo socda:

- (i) 1sm waxa ay u taagan tahay 2 m;  
iyada oo la adeegsanayo iskeelka 1 sm u taagan yahay 2 m:  
dhererka  $\frac{20}{2} = 10$  sm    ballaca  $\frac{15}{2} = 7.5$  sm
- (ii) 1sm waxa ay u taagan tahay 4 m;  
iyada oo la adeegsanayo iskeelka 1 sm u taagan yahay 4 m:  
dhererka  $\frac{20}{4} = 5$  sm    ballaca  $\frac{15}{4} = 3.75$  sm
- (iii) 1sm waxa ay u taagan tahay 5 m;  
iyada oo la adeegsanayo iskeelka 1 sm u taagan yahay 5 m:  
dhererka  $\frac{20}{5} = 4$  sm    ballaca  $\frac{15}{5} = 3$  sm
- (iv) 1sm waxa ay u taagan tahay 10 m;  
iyada oo la adeegsanayo iskeelka 1 sm u taagan yahay 10 m:  
dhererka  $\frac{20}{10} = 2$  sm    ballaca  $\frac{15}{10} = 1.5$  sm

Doorashada iskeel waxa ay ku xiran tahay baaxadda waraaqda la haysto.

Gobol dhul ah ayaa lagu sawiray iskeel ah 1 sm : 10 m



Iskeel sawireedka dhareka HG waa 5 sm  
Dhererka dhabta ah ee HG waa  $5 \times 10\text{m} = 50\text{m}$   
Iskeel sawireedka dhareka AH waa 4 sm  
Dhererka dhabta ah ee AH waa  $4 \times 10\text{m} = 40\text{m}$

Cabbir dhererrada jaantuska si loo dhammetstirro tusaha

Si loo xisaabiyo wareegga dhabta ah ee gobolka dhulka: Isugee dhererrada iskeel sawireedka oo kudhufo 10 m :

$$AB + BC + CD + DE + EF + FG + HG + AH$$

$$1.5 + 2 + 2 + 2 + 1.5 + 4 + 5 + 4 = 17\text{sm}$$

$$17 \times 10 = 170 \text{ sm}$$

	Iskeel	Dhab ah
AB	1.5 sm	
BC		
CD		
DE		
EF		
FG		
HG	5 sm	$5 \times 10 = 50 \text{ m}$
AH	4 sm	$4 \times 10 = 40 \text{ m}$

### Tusaalooyin:

Jaantusku waxa uu u taagan yahay qorshe Guri.

Iskeelku waa 1sm ;2m.



Waa maxay:

b) dhererka dhabta ah ee AB?

∴ dhererka dhabta ah ee AB?

$$\text{waa } 11 \times 2 = 22\text{m}$$

t) dhererka dhabta ah ee BC?

∴ dhererka dhabta ah ee BC?

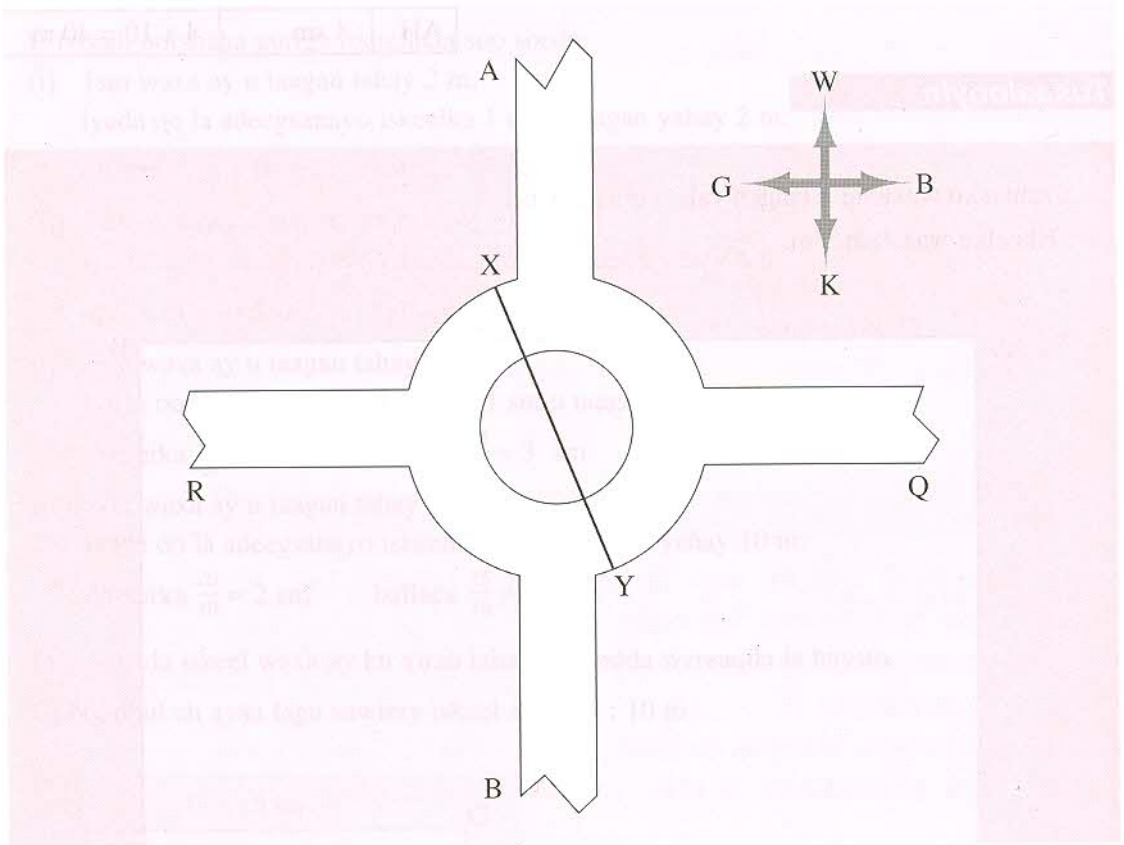
$$\text{waa } 4 \times 2 = 8\text{m}$$



Layli 1

1. Jaantuskan waxa uu muujinayaa iskeel sawireedka qayb wado oo goobo ah. Iskeelka waa 1cm :10m.

- b) Waa maxay fogaanta dhabta ee u
  - i) dhexaysa A iyo B?
  - ii) dhexaysa R iyo Q?
- t) Waa maxay ballaca dhabta ee
  - i) Jidka waqooyi-koonfur?
  - ii) Jidka Galbeed-koonfur?
- j) Waa maxay dhexroorka jidka goobada (xy)?



2. Jaantuska waxa uu u taagan yahay gobol dhul oo laydi ah oo la sawiray iyada oo la adeegsanaya iskeel 1sm : 10m



Waa maxay

- b) Dhareka dhabta ah ee dhulka?
- t) Ballaca dhabta ah ee dhulka ?
- j) Wareegga dhulka?

## Jajab u taagan iskeel

1: 100 waxa loo akhriya hal waa ilaa boqol

1: 100 micnaheedu waa 1 halbeeg dherer ee sawiran waxa uu u taagan yahay 100 halbeegyo ee dhererka dhabta

t.a 1sm ee dherer sawir waxa uu u taagan yahay 100 sm oo dhererka dhabta ah.

### Tusaalooyin:

(i) Waa maxay micnaha jajabka u taagan iskeelka sentimitir ahaan?

b) 1 : 200                      t) 1 : 100 000                      j) 1: 25 000

b) 1 : 200

1 sm ee dherer sawiran waxa uu u taagan yahay 200 sm ama 2m oo dhererka dhabta ah.

t) 1 : 100 000

1sm ee dherer sawiran waxa uu u taagan yahay 100 000sm ama 1 000m ama 1km dhererka dhabta ah

j) 1: 250000

sm ee dherer sawiran waxa uu u taagan yahay 250 000 sm ama 2 500m ama 2.5km oo dhererka dhabta ah.

(ii) U qor iskeelka 1sm = 8 m jajab ahaan

8 m = 800 sm.                      Sansaan saami waa 1 : 800

Jajab u taagan iskeel ahaan: 1:800

### Layli 2

1. Qor jajabkayada u taagan iskeel 1 sm  $\equiv$  a ahaan

b) 1 : 400

t) 1 : 3000

j) 1 : 450 000

x) 1 : 600 000

kh) 1 : 1000 000

d) 1 : 5500

r) 1 : 750 000

s) 1 : 400 000

2. Qor kuwan jajabyada u taagan

a) 1 sm  $\equiv$  10 m

b) 1 sm  $\equiv$  15 m

c) 1 sm  $\equiv$  25 m

d) 1 sm  $\equiv$  150 m

e) 1 sm  $\equiv$   $\frac{3}{4}$  km

f) 1 sm  $\equiv$   $1\frac{1}{2}$  km

g) 1 sm  $\equiv$  4.5 km

h) 1 sm  $\equiv$  3.5 km

i) 1 sm  $\equiv$  10 km

j) 1 sm  $\equiv$   $3\frac{1}{4}$  km

k) 1 sm  $\equiv$  12.5 km

l) 1 sm  $\equiv$  0.6 km

## Ku sawiridda iskeel

### Tusaalooyin:

(i) Iyada oo la adeegsanaayo iskeelka 1:200 samee iskeel sawireedka gobol dhul oo laydi ah oo cabbirkiisu yahay 8m iyo 4m. Xisaabi dhererka iyo ballaca ee iskeelka jaantuska ay tahay in la sawiro.

1 : 200 micnaheedu waa 1 sm u taagan  
200 sm ama 2 m

Dherer waa  $\frac{8}{2} = 4$  sm;                      Ballac waa  $\frac{4}{2} = 2$  sm

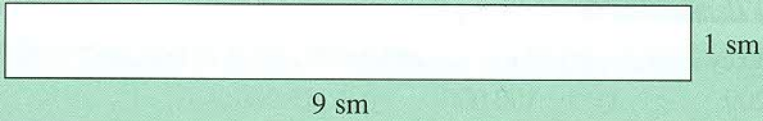


(ii) Iyada oo la adeegsanaayo iskeelka 1:5000 samee iskeel sawireedka gobol dhul oo laydi ah oo cabbirkiisu yahay 450m iyo 50m.

Xisaabi dhererka iyo ballaca ee iskeelka jaantuska ay tahay in la sawiro.

1 : 5000 micnaheedu waa 1 sm u taagan 5 000 sm ama 50 m

Dhererku waa  $\frac{450}{50} = 9$  sm;      Ballac waa  $\frac{4}{2} = 1$  sm.



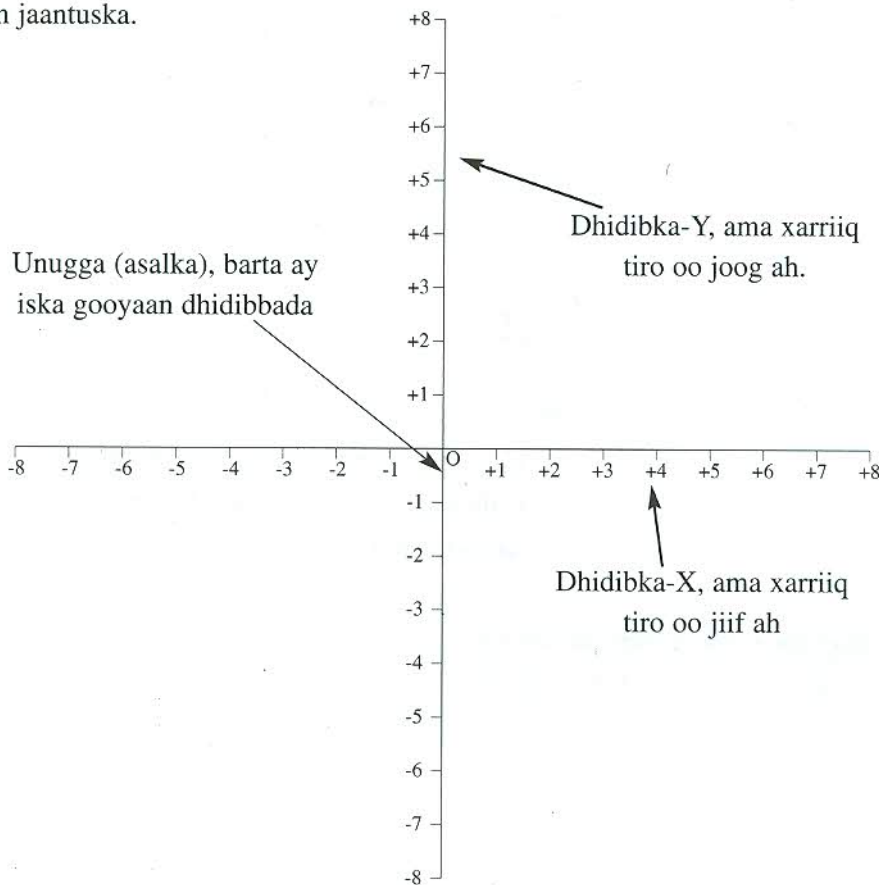
### Layli 3

- Iyada oo la adeegsanaayo iskeelka 1sm 10m samee iskeel sawireedka laydiyadan
  - 50 m iyo 45 m.
  - 85 m iyo 55 m
  - 90 m iyo 70 m
  - 45 m iyo 90 m
  - 65 m iyo 50 m
  - 100 m iyo 80 m
  - 75 m iyo 60 m
  - 150 m iyo 50 m
- Iyada oo la adeegsanaayo iskeelka 1:100 samee iskeel sawireedka:
  - Laydiyada cabbirkooda yihiin
    - 5 m iyo 3 m
    - 4.8 m iyo 4.2 m
    - Saddexagalayaasha labaalaha ee leh dhinacyada:
      - 6 m
      - 5.5 m
      - 8 m
      - 10 m
    - 6.5 m iyo 5.5 m
    - 8.4 m iyo 7.3 m
- Iyada oo la adeegsanaayo iskeelka 1:200 samee iskeel sawireedka laydiyada soo socda:
  - 12 m iyo 8 m
  - 10 m iyo 10 m
  - 16 m iyo 14 m
  - 8.6 m iyo 7.4 m
  - 9 m iyo 7 m
  - 14 m iyo 12 m
  - 13 m iyo 13 m
  - 9.2 m iyo 6.8 m
- Iyada oo la adeegsanaayo iskeelka 1:5000 samee iskeel sawireedka laydiyada soo socda:
  - 200 m iyo 150 m
  - 420 m iyo 360 m
  - 280 m iyo 200 m
  - 350 m iyo 30 m
  - 450 m iyo 400 m
  - 380 m iyo 320 m
- Iyada oo loo adeegsanaayo iskeel 1:100 000, samee iskeel sawireedka laydiyada soo socda:
  - 2.5km iyo 2km
  - 8km iyo 7.2km
  - 5.2km iyo 4.5km
  - 7km iyo 7km
  - 7.5km iyo 6.4km
  - 9km iyo 8km
  - 4.7km iyo 4.1km
  - 6km iyo 6km

# 13 GARAAFYO

## Kulan sallax

Rug sallax ku taalla waxa lagu aqoonsan karaa iyada oo la adeegsado kullanno, sida ku muujisan jaantuska.



### Kulannada sallaxa

Kulanka sallaxa waxa uu ka sameysmaa labo xriiq tiro oo isgoya.

Rugta bar kastaa ee ku taalo sallax waxa sheegaya kulannadooda.

Bar kasta waxa ay leedahay 2 kulan oo sameeya lammaane horsan.

**2 dhidibka  $-x$  waxa ay sheegaysa inta loo dhaqaaqayo bidixda ama midigta ee dhererka dhidibka  $-x$**

**4 dhidibka  $-y$  waxa ay sheegaysa inta loo dhaqaaqayo kor ama hoos ee dhidibka  $-y$**

Kulannada (0,0) waxa uu sheegayaa unuga

Ka dhaqaaqidda unugga ee loo dhaqaaqo midig waa dhidibka  $-x$  ee togan.

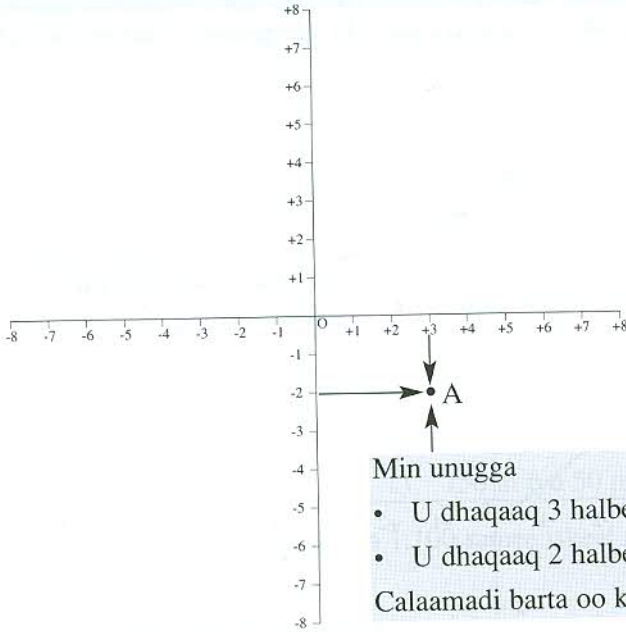
Ka dhaqaaqidda unugga ee loo dhaqaaqo bidix waa dhidibka  $-x$  ee taban.

Ka dhaqaaqidda unugga ee loo dhaqaaqo xagga sare waa dhidibka  $-y$  ee togan.

Ka dhaqaaqidda unugga ee loo dhaqaaqo hoos waa dhidibka  $-y$  ee taban.

Tusaalooyin:

(i) Bar dhig barta leh kullannada  $(3, -2)$



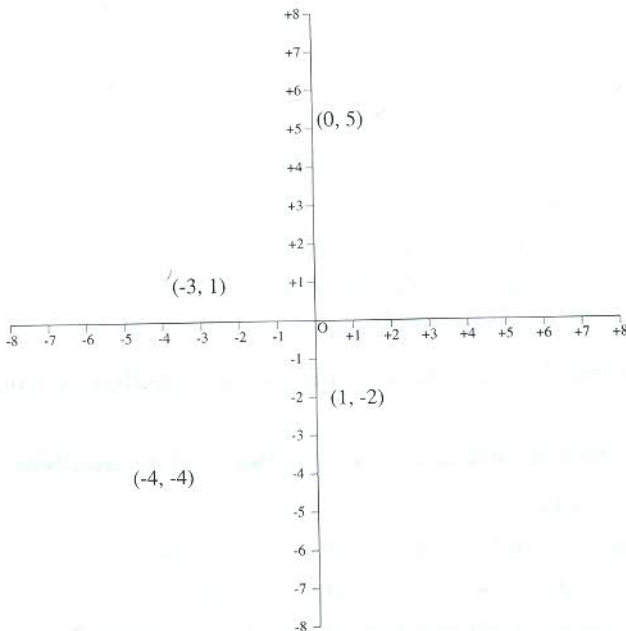
(ii) Bar dhig bar kasta kulannada sallaxa

b)  $(-4, -4)$

t)  $(-3, 1)$

j)  $(1, -2)$

x)  $(0, 5)$



Baraha waxa loo tixraaci karaa in ay ku yaalliin meel ka mid ah afarta qaybood ama waaxood ee kulannada

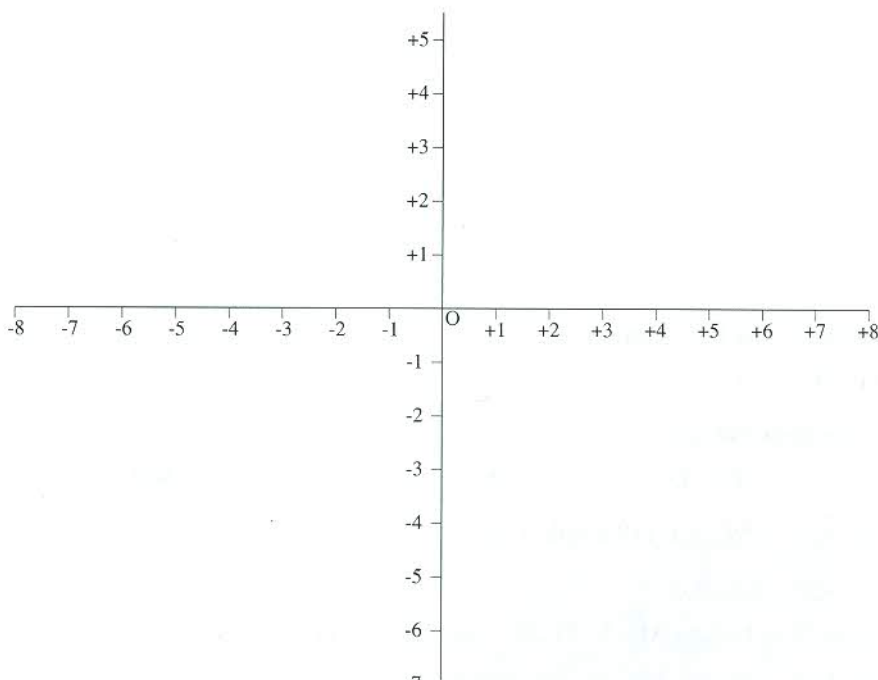
- (0,5) waa waaxda 1aad
- (-3,1) waa waaxda 2aad
- (-4,-4) waa waaxda 3aad
- (1,-2) waa waaxda 4aad

Waaxda II	Waaxda I
Waaxda III	Waaxda IV

**Layli 1**

1. Ku muuji barahan kulannada sallax ee hoose

- b) A(1,5)
- t) (-5, -5)
- j) (-3,1)
- x) (-2,1)
- kh) (3, -6)



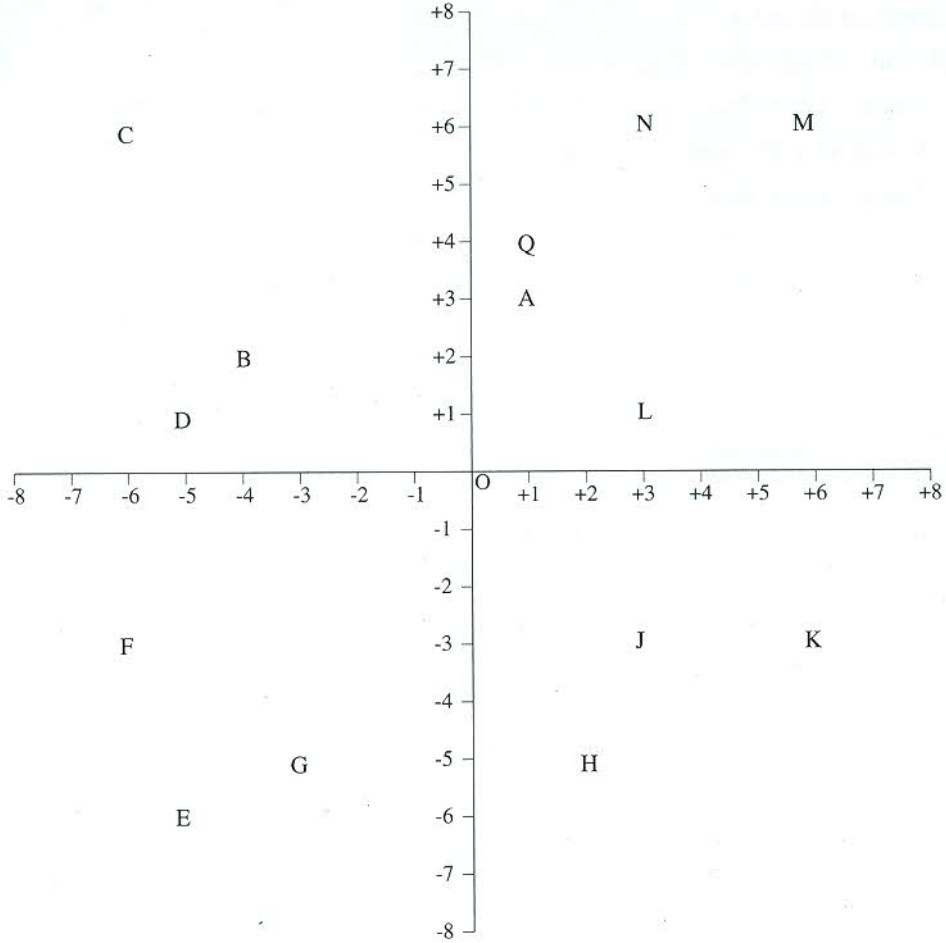
2. Barahan waaxdee ku yaalliin:

- b) (-2,5)
- t) (5, -2)
- j) (2, -5)
- x) (2, 5)

3. Sawir kulannada sallax oo bar dhig barahaan:

- (i) G (-4,1)
- (ii) R (1,-4)
- (iii) L (0,8)
- (iv) F(5,-2)
- (v) S (2,2)
- (vi) H(-1,0)

Ka jawaab su'aalaha 4 ilaa 6 adiga oo adeegsanaya kulannada sallax ee soo socda:



4. Magacaw baraha leh kulannadan

- b) (1, 3)      t) (-3, -6)      j) (3, -3)      x) (0, -5)      kh) (3, 0)

5. Qor kulannada bar kasta.

- b) C      b) D      j) K      x) Q      kh) N

6. M waa (6,4) bartee leh lidka kulannada?

7. Sawir kulannada salax

- b) Ku bardhig baraha M (-5,-3), N (2-4) iyo P (0,1) kulannada sallaxa  
 t) Isugu xir baraha si horsan si ay u sameeyaan qaab  
 j) Waa maxay qaabka aad sameysay?

8. Sawir kulannada salax

- b) ku bardhig baraha A (4,3), B (1-3,), C (-4,0) iyo D (1,0) kulanada sallaxa.  
 t) Isugu xir baraha si horsan si ay u sameeyaan qaab. Qaabkee aad arkaysaa?  
 j) Waa maxay magaca ugu saxsan ee aad adeegsan karto si aad u sifayso ABCD?

9. Sheeg waaxda ay ku yaaliin barahan:

- b) (3, 2)      t) (-17, 2)      j) (-6, -40)      x) (9, -11)      kh) (-1, 100)  
 d) (3, 38)      r) (0, 2)      s) (-4, 1)      sh) (-1, -3)      dh) (2, -2)

10. Bartee ku taal waaxda iv?

- b) (-2, 2)      t) (2, -2)      j) (-2, -2)      x) (2, 2)

11. Saddex gees ee laydi ayaa leh kulannada (4,2), (4,7) iyo (-3,2). Raadi kulannada geska afaraad.

## Garaaf jiitimeed

Garaaf jiitimeed waxa lagu soo bandhigi karaa war ama xog. Waa in ay sawir ahaan caawisaa isbarbardhigidda xaddiyada

Sawiridda garaaf jiitimeed waxa ku jira:

- Adeesiga iskeelo jiif iyo joog oo ku habboon xogta baaxadda bogga.
- Gaaliska iskeel waxa uu noqon karaa 1, 2, 5, 10, 20 halbeeyo halkii sentimitir
- Adeegsiga iskeel ku habboon baaxadda bogga
- ballaca Jiitimada waa in ay isle'eg yahay
- dhidibbada waa in la calaameeyo.
- Garaafka waa in uu leeyahay cinwaan.

### Tusaalooyin:

(i) Tusaha waxa uu muujinaya ardayda joogtay fasal hal toddobaad

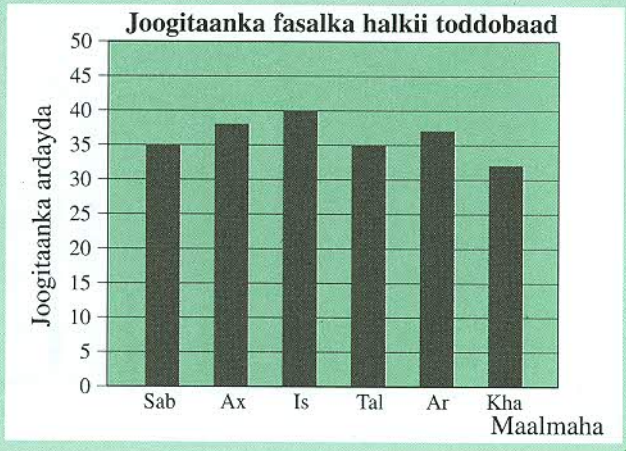
Sawir garaaf jiitimeed si loogu soo bandhigo xogta

Maalinta	Sabti	Axad	Isniin	Talaado	Arbaco	Khamiis
Tirada Joogtay	35	38	40	35	37	32

Si loo sawiro garaaf jiitimeed:

Dooro iskeel ku habbon: 1 sm  $\equiv$  10 arday ee dhidibka joogga.

Tan micnaheedu waa joogitaanka fasalka tirada ugu badan ee ah 40 arday, waxa uu u taagnaan karaa 4sm.



Ogow: Garaaf jiitimeedku waxa uu leeyahay cinwaan.



(ii) Sawir garaaf jiidimeed u taagan xogta hoose taas oo muujinaysa roobka da'ay muddo lix bilood ah millimitir ahaan.

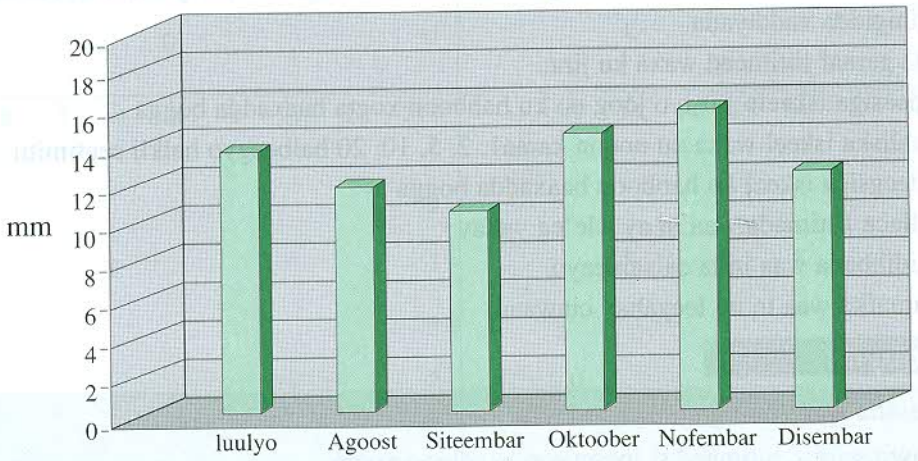
Bisha	luulyo	agoosto	Siteembar	Oktoober	Nofeembar	Diseembar
Roobka mm ahaan	13 mm	11 mm	10 mm	14 mm	1 mm	12 mm

Iskeel: 1 sm 4 mm

Dooro iskeel habboon

Tan micnaheed waa roobka ugu badan ee da'ay ee ah 14mm, waxa uu u taagnaan karaa 3.5 sm ee waraaqaha garaafka dusheeda.

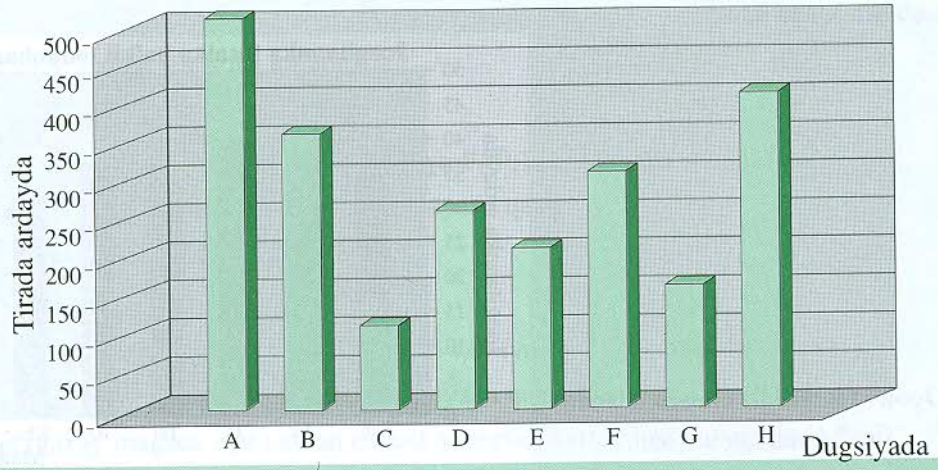
**Roobka bishiiba**



(iii) Tusaha hoose waxa uu ku siinayaa tirada ardayda ku jirta siddeed dugsi. Sawir garaaf jiidimeed u taagan xogtani.

Dugsiga	A	B	C	D	E	F	G	H
Tirada ardayda	500	350	100	250	200	300	150	400

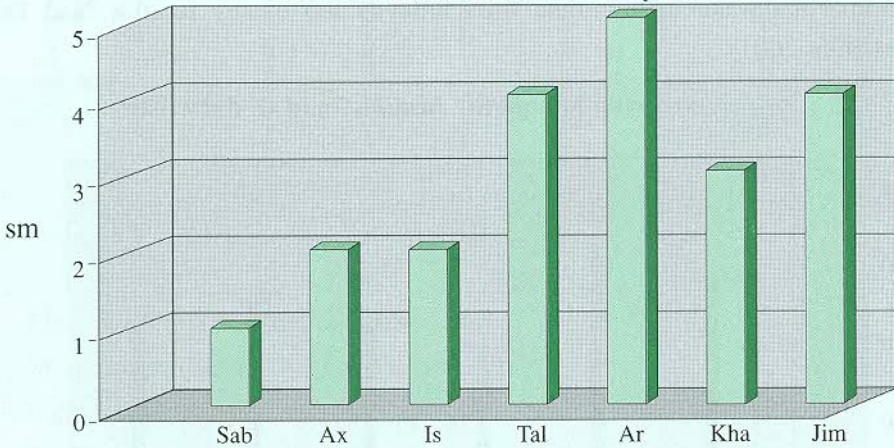
**Ardayda dhigata siddeedda dugsi**



Layli 2

1. Garaaf jiiimeedka waxa uu muujinayaa maalin kasta ee hal toddobaad roobka ku da'ay maagaalada Balcad.
  - b) Immisa roob ayaa da'ay toddobaadka?
  - t) Waa tee maalinta ugu qoyaan badnayd?
  - j) Waa maxay faraqa u dhexeeya roobka ugu badnaa iyo kan ugu yaraa?

**Roobka maalintiiba ku da'ay Balcad**

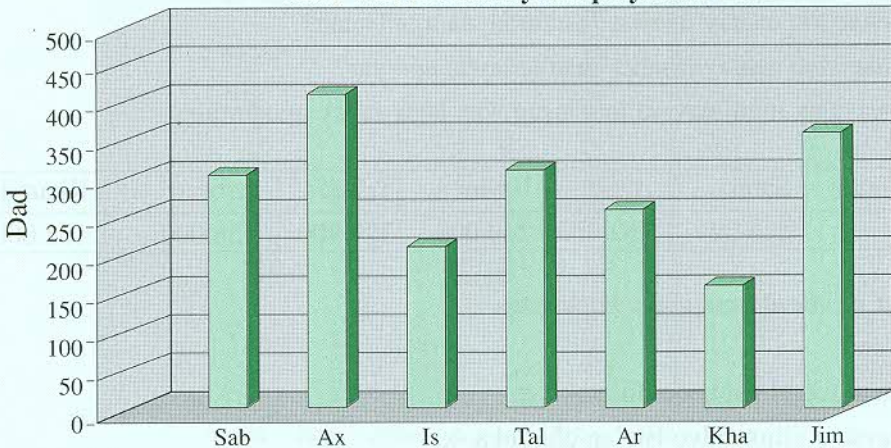


2. Dukaanle ayaa diiwaan geliyay walxaha kala duwan oo uu iibiyay. Sawir garaaf jiiimeedka muujinaya alaabta la gaday.

Walaxda	Caano	Rooti	Galley	Yaanyo	Saliid
Lacagta Sh	1550	500	2500	1000	4000

3. Garaaf jiiimeedkan waxa uu muujinayaa inta dad ee tagtay maqaayadda Kaah hal toddobaad.

**Inta wax ka cuntay maqaayadda Kaah**

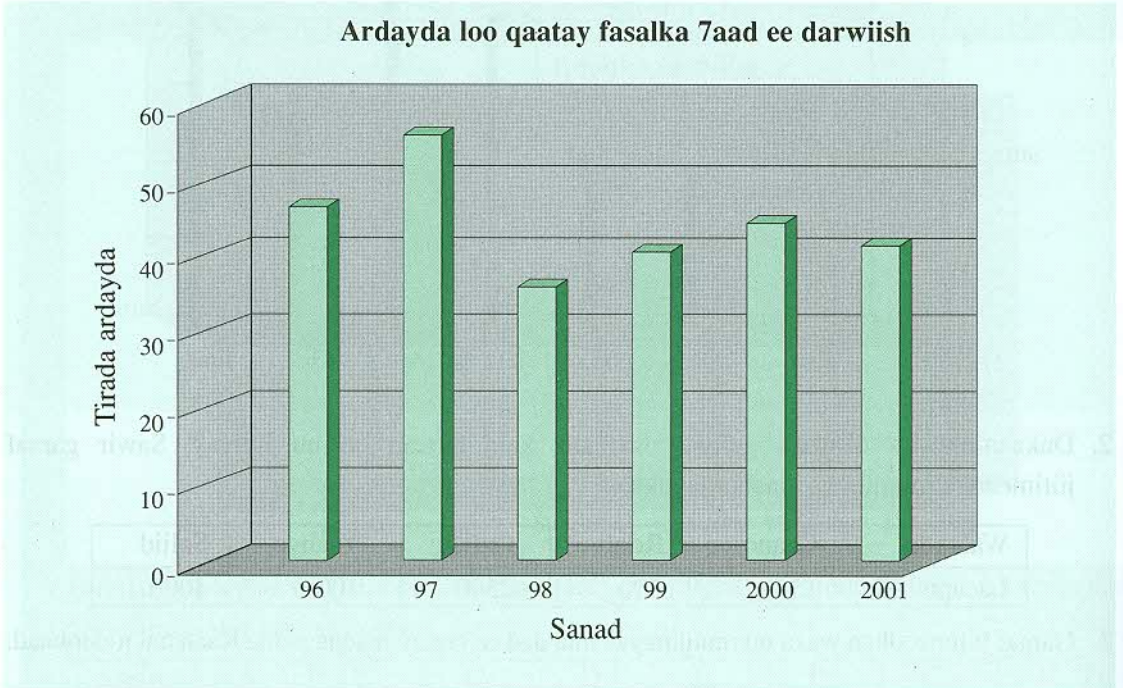


- b) Maalintee tirada dadka yimid maqaayadda ugu badnaayeen?
- t) Maalintee tirada dadka yimid maqaayadda ugu yaraayeen?

- j) Immisa ayaa dadka yimid maalinta Talaaladu ay ka badnaayeen dadkii yimid maalinta Khamiista?
- x) Garaafka ma muujinaya maalinta maqaayadda ay heshay lacagta ugu badan?
4. Sawir garaaf jiitimeedka muujinaya xogtan oo ah ukunta hal bil la soo saaray:

Digaagga		A	B	C	D E
Tirada ukunta	26	17	24	20	16

5. Garaaf jiitimeedka waxa uu muujina tirda ardayda loo qaatay fasalka 7aad Dugsiga Darwiish (1996- 2001)



- b) Sanadkee loo qaatay fasalka 7aad ardayda ugu badan?
- t) Sanadkee loo qaatay fasalka 7aad ardayda ugu yar?
6. Xogtan waxa ay muujinaysaa inta lacag wax lagu gaday maalintiiba.

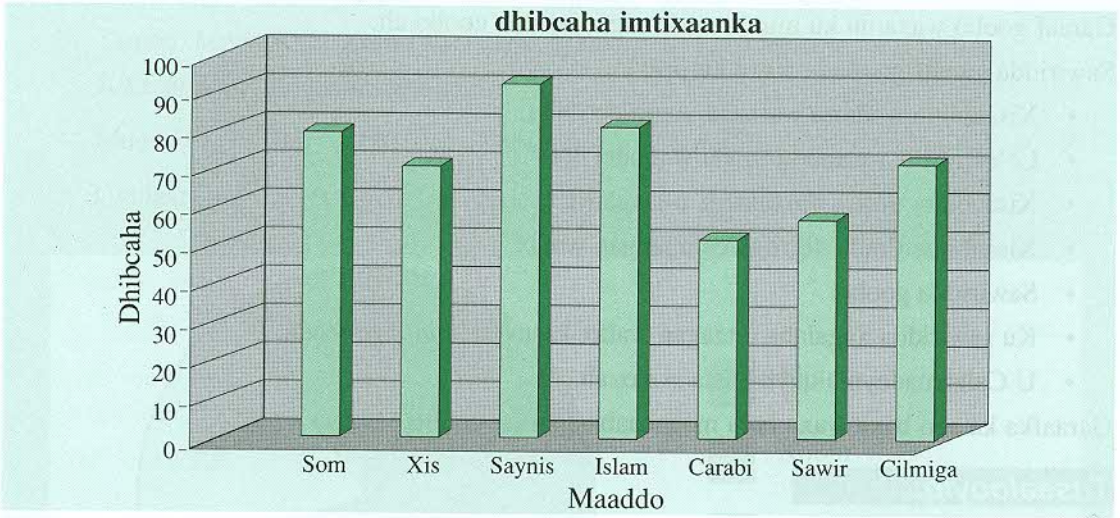
Maalinta	Sabti	Axad	Isniin	Talaado	Arbaco	Khamiis
Shilin	516 000	762 000	260 000	374 000	458 000	468 000

Sawir garaaf jiitimeed muujinaya xogta sare.

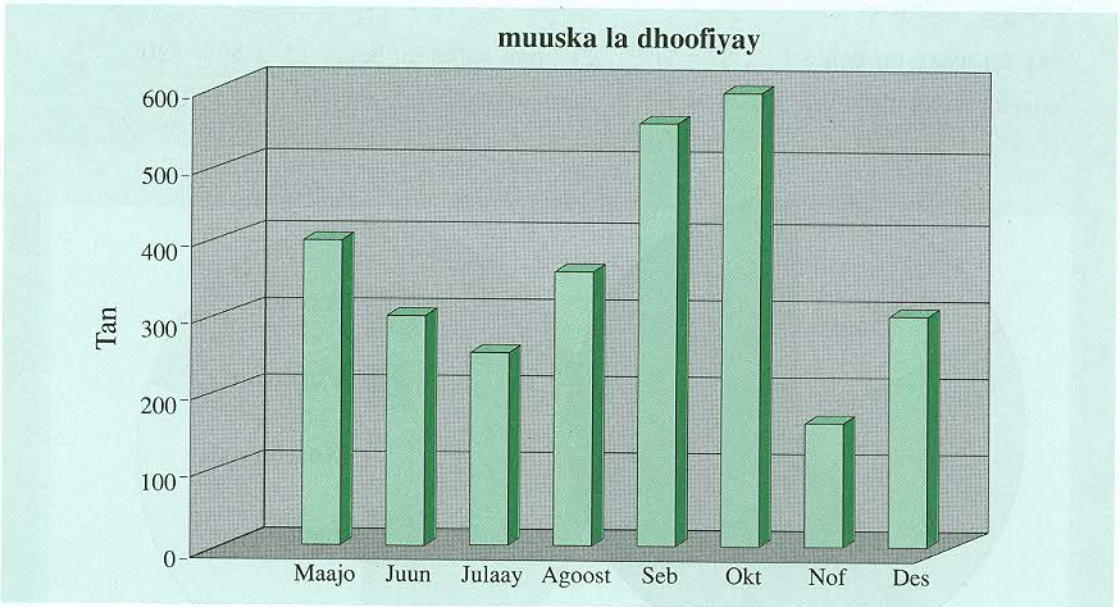
Xasuuso in aad:

- U xulato iskeel habboon dhidibka -y.
- Ku haysato jiitimeedyo isle'eg dhidibka -x.
- Calamadeyso dhidibka -x iyo dhidibka -y.
- Qorto cinwaanka garaafka.

7. Garaaf jiiimeedkan waxa uu muujinaya dhibcaha imtixaanka maadooyinka ee ardayad fasal 7aad.



- b) Maaddadee ayaa ay ugu dhibco badnayd?
  - t) Maaddadee ayaa ay ugu dhibco hoosaysa?
  - j) Labadee maaddo ayaa ay isku dhibco keentay?
  - x) Waa maxay farqiga dhibicda ugu sarreysa iyo tan ugu hooseeysa?
  - kh) Maxa ay ahaayeen dhibcaheeda Carabiga?
  - d) Waa maxay iskeelka joogga ee garaafkan?
8. Garaaf jiiimeedka waxa uu muujinaya muuska loo dhoofiyay talyaaniga min Maajo ilaa Disembar



- b) Labadee bilood dhexdooda ayaa uu korodhka bilaha dhoofintu ugu badnaa?
- t) Labadee bilood dhexdooda ayaa uu hoos ugu dhaca dhoofintu ugu weynaa?
- j) Bishee ayaa uu 300 tan uu le'ekaa dhoofinta?

## Garaaf goobo

Garaaf goobo waxa uu ku muujinayaa xogta jaantus goobo ah.

Sawiridda garaaf-goobada waxa ku jira:

- Xisaabinta wadarta walxaha xogta oo dhan.
- Le'ekaysiinta wadarta tirada walxaha  $360^\circ$ .
- Xisaabinta tirada walxaha ee u taagan  $1^\circ$ .
- Xisaabinta tirada digriiga ee u taagan walax.
- Sawiridda goobo.
- Ku sawiridda xagalaha u taagan walax kasta xuddunta goobada.
- U Calaamadeynta qayb kasta si sax ah.

Garaafka ka soo baxa waxa lagu magacaabaa garaaf goobo.

### Tusaalooyin:

(i) Tusahan waxa uu muujinaya cod bixinta afar murashax:

Sawir garaaf goobo ee tusmeynaya xogtan:

Murashax	Axmed	Cusman	Xuseen	Jaamac
Codka	12	15	8	10

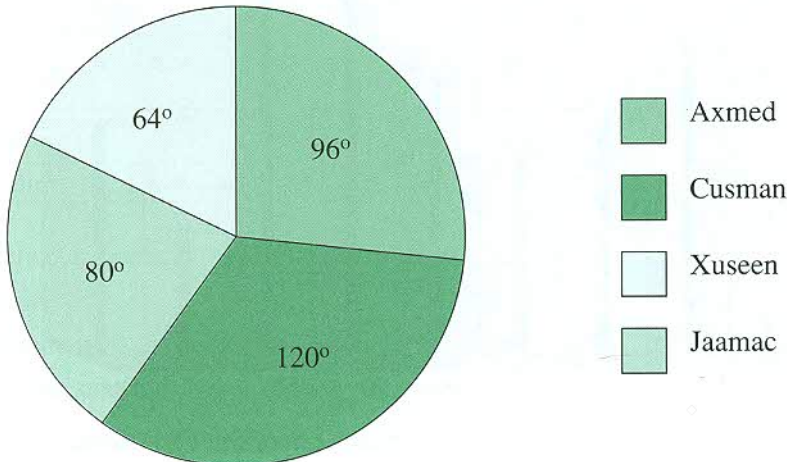
Tirada codadka  $12+15+8+10 = 45$  Cod

$45 \text{ cod} \equiv 360^\circ$

$1 \text{ cod} \equiv \frac{360^\circ}{45} \equiv 8^\circ$

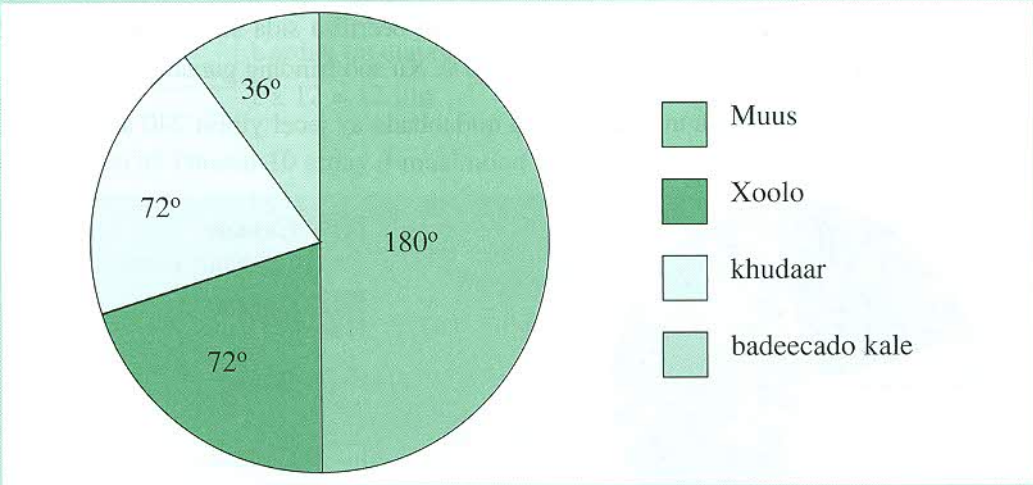
Axmed waxa uu helay  $12 \times 8^\circ = 96^\circ$  Cusman waxa uu helay  $15 \times 8^\circ = 120^\circ$

Xuseen waxa uu helay  $8 \times 8^\circ = 64^\circ$  Jaamac waxa uu helay  $10 \times 8^\circ = 80^\circ$



(ii) Soomaaliya waxa ay wadarta boqolleydan soo socota u dhoofisay  
 Yaman: Muus 50%, Xoolo nool 20%, khudaar 20%, badeecado kale 10%.  
 Ku muuji xogtan garaaf goobo.

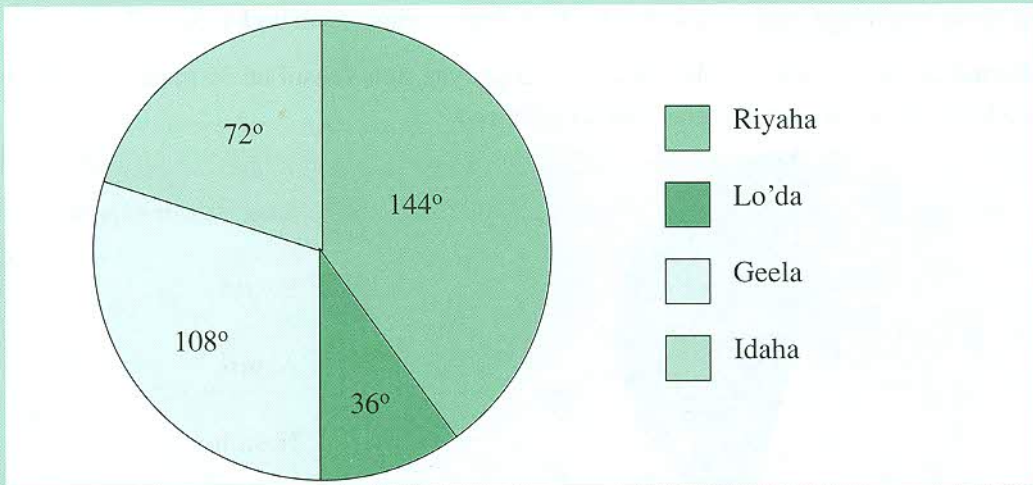
$$\begin{aligned} \text{Muus} &= \frac{50}{100} \times 360^\circ = 180^\circ & \text{Xoolo} &= \frac{20}{100} \times 360^\circ = 72^\circ \\ \text{khudaar} &= \frac{20}{100} \times 360^\circ = 72^\circ & \text{badeecado kale} &= \frac{10}{100} \times 360^\circ = 36^\circ \end{aligned}$$



(iii) Nin xoolo dhaqato ah ayaa haystaa 20 neef oo riyo ah, 5 lo', 15 neef oo Geel ah, 10 neef oo ido ah. Sawir garaaf goobo si aad u muujiso xogtan:

Wadarta xoolaha = 20 + 5 + 15 + 10 = 50

$$\begin{aligned} \text{Qaybta riyaha} &= \frac{20}{50} \times 360 = 144^\circ & \text{Qaybta lo'da} &= \frac{5}{50} \times 360 = 36^\circ \\ \text{Qaybta geela} &= \frac{15}{50} \times 360 = 108^\circ & \text{Qaybta idaha} &= \frac{10}{50} \times 360 = 72^\circ \end{aligned}$$



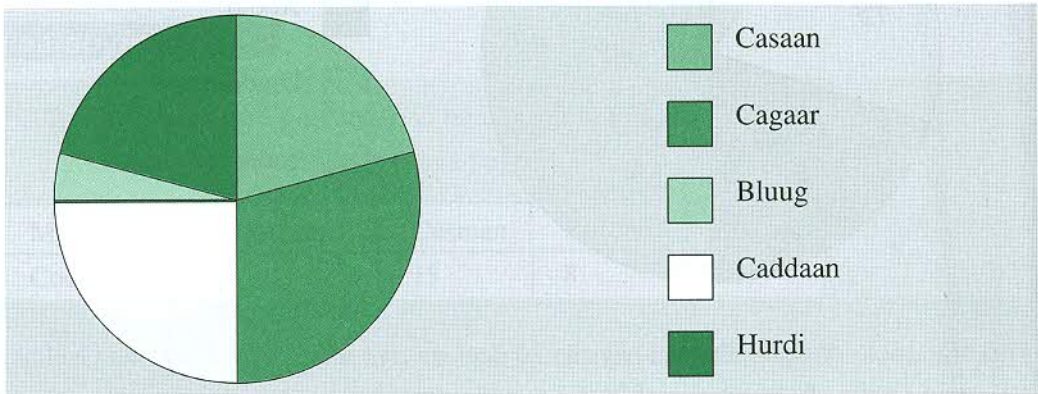
## Layli 3

1. Axmed waxa uu diiwaangeliyaa waqtiga uu ku bixiyo waxqabadayda maalinta.

Waxqabad	hurdo	dugsiga	Kaalmeeynta qoyska	cayaar	cunid	Tegidda iyo ka imaanshaha dugsiga
Saacad	1	6	3	3	1	1

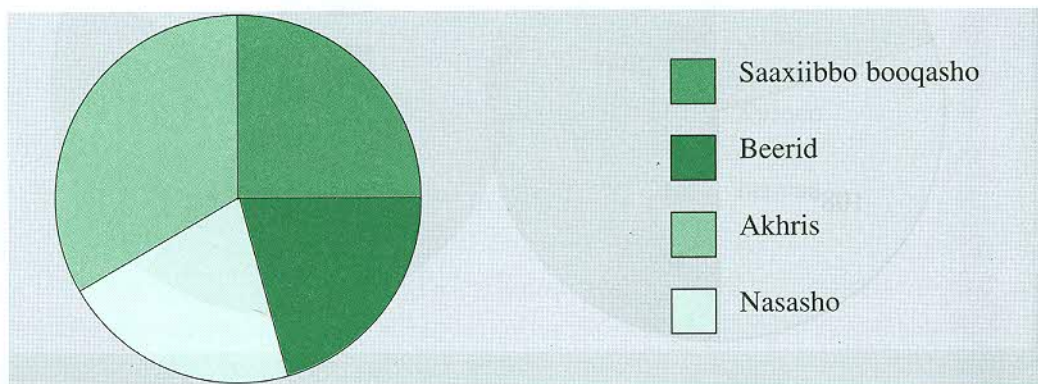
Sawir Garaaf goobo u taagan xogtan

- Beeraley ayaa u adeegsada in uu ku beero mirahan beertiisa sida soo socota: galley 25%, Yaanyo 15%, muus 30%, digir 15%, baradho 15%. Ku soo bandhig garaaf goobo.
- Garaaf goobada hoose waxa uu muujinayaa midabbada ay jecel yihiin 240 arday oo dugsiga ku jira.



Immisa arday ayaa jecel midab kasta?

- Aadan lacagta soo gasha 20% waxa uu ku bixiyaa ijaar, 35% cunno, 30% dhar iyo inta kale oo uu kaydiyo.
  - Waa maxay boqolleyda lacagta soo gasha ee uu kaydiyo?
  - Sawir garaaf goobo si aad ugu muujiso dakhliga Aadan?
  - Haddii dakhliga Aadan uu yahay sh 1000 000, immisa ayaa uu kaydiyaa?
- Garaafkan oo ah garaaf goobo waxa uu muujinayaa sida Yuusuf uu 36 maalmood fasaxiisa uu ku bixiyay. ku muuji xogtan Garaaf jiidimeed.



# 14 CELCELIS

## Tirosin

Baaritaan ay sameeyeen 10 arday oo fasalka 7aad ah ayaa waxa uu muujinaya inta liin ay cunaan 3 maalmood kasta.

Arday	Liin
9	2
1	12

Baaritaanka waxa uu muujiyay in 9 arday midkiiba uu cunay 2 liin:

$$9 \times 2 = 18 \text{ liin,}$$

1 arday uu cunay 12 liin

$$1 \times 12 = 12 \text{ liin}$$

Wadarta liinta ay cuneen 10 arday 3 maalmood waa:

$$18 + 12 = 30$$

$$\text{Tirosinta tirada liinta la cunay} = \frac{\text{Wadarta liinta la cunay}}{\text{Tirada ardayda}}$$

$$\text{Tirosin} = \frac{30}{10} = 3 \text{ liin}$$

$$\therefore \text{Tirosin} = \frac{\text{Wadarta walxaha}}{\text{Tirada walxaha}}$$

### Tusaalooyin:

(i) Maxamed waxa uu helay 65, 94, 50, 86, 66 iyo 70 imtixaankiisii fasalka 6aad. Raadi tirosinta dhibcaha Maxamed

$$\begin{aligned} \text{Tirosin} &= \frac{\text{Wadarta walxaha}}{\text{Tirada walxaha}} \\ &= \frac{65 + 94 + 50 + 81 + 66 + 70}{6} \\ &= \frac{426}{6} \end{aligned}$$

$$\text{Tirosin} = 71 \text{ dhibcood}$$

(ii) Tirosinta dhererka 5 arday waa 1.61m. Afar arday dhererkooda waa 1.55m, 1.65m, 1.71m, iyo 1.56m. Waa maxay dhererka ardayga 5aad?

$$\begin{aligned} \text{Wadarta dhererrada 5 arday} &= \text{Tirosinta dhererrada 5 arday} \times \text{tirada ardayda} \\ &= 1.61 \times 5 = 8.05 \text{ m} \end{aligned}$$

$$\begin{aligned} \text{Dhererrada 4 arday} &= 1.55 + 1.65 + 1.71 + 1.56 \\ &= 6.47 \text{ m} \end{aligned}$$

$$\begin{aligned} \therefore \text{Dhererka ardayga 5aad} &= 8.05 - 6.47 \\ &= 1.58 \text{ m} \end{aligned}$$



## Layli 1

- Waa maxay tirosinta:
  - 10 m, 8 m, 14 m, 15 m, 16 m, 11 m, 9 m, 13 m,?
  - 0.5, 0.3, 0.9, 0.7, 0.4, 0.8?
  - 3.5 m, 3.2 m, 2.4 m, 2.6 m, 2.8 m?
- Maxamed waxa uu u fariistay saddex imtixaan oo saynis ah waxa uuna keenay 55 dhibcood, 68 dhibcood iyo 72 dhibcood. Maxa ay ahayd tirosinta dhibcihiisa ee saddexda imtixaan?
- Tirosinta da'da saddex gabdhóod waa 9 sano. Labo ka mid ah waa 11 jir iyo 7 jir sida ay u kala horreeyan. Raadi da'da gabadha saddexaad.
- Tirosinta heerkulka labada maalmood ee ugu horraysa toddobaadka waxa ay ahayd  $38^{\circ}\text{C}$  oo tirosinta heerkulka labadii maalmood ee xigay waxa ay ahayd  $34^{\circ}\text{C}$ . Haddii tirosinta heerkulka maalinta shanaad ee toddobaadka ay tahay  $32^{\circ}\text{C}$ . Waa maxay tirosinta heerkulka labada maalmood ee ugu dambeeya ee toddobaadka?
- Tirosinta culayska 8 wiil waa 44 kg. Haddii culaysyada toddobo wiil ay tahay 43 kg, 45kg, 43kg, 48 kg, 45 kg, 46 kg, 45 kg. Waa maxay culayska wiilka siddeedaad?
- Tusahan waxa uu muujinayaa tirada kabaha ee uu iibiyay gacsade hal toddobaad.

Maalinta	Sabti	Axad	Isniin	Talaado	Arbaco	Khamiis	Jimce
Tirada kabaha	31	40	51	44	38	27	45

Waa maxay tirosinta tirada kabaha maalintii la iibiyo?

- Tirosinta 5 tiro waa 6. Marka loo geeyo tirada lixaad tirosinta waxa ay isku beddeshay 5.5, waa maxay tirada lixaad?

## Badidhace

Fiiri tirooyinkan 2, 3, 4, 6, 6, 9.

Badidhacuhu waa 6, waayo 6 ayaa soo noqnoqosha badan.

**Badidhace** waa tiro, dhacdo ama walax soo muuqata in ka badan kuwa kale ama ka soo noqnoqod badan.

### Tusaalooyin:

(i) Raadi Badidhaca ururkan 3, 5, 6, 2, 7, 8, 8, 5, 2, 2, 7

marka hore u habbee tirooyinka horsanaan fanata:

2, 2, 2, 3, 5, 5, 6, 7, 7, 8, 8

Badidhace = 2 waayo tirooyinka kale waa ay ka soo noqnoqod badan tahay kwa kale.

Layli 2

1. Raadi Badidhacaha mid kasta ee tirooyinka soo socda ah:
  - b) 7; 2, 6, 8, 2, 5, 7, 2
  - j) 30, 70, 30, 40, 30, 80
  - kh) 22, 23, 25, 20, 24, 23, 20, 23
  - t) 13, 15, 17, 15, 16, 12, 15, 16
  - x) 740, 730, 780, 740, 780, 740
  - d) 81, 82, 78, 74, 83, 85, 78, 80, 81
2. Kalluumeyste ayaa soo jilaabtay 10 kalluun oo uu miisaankoodu kala yihiin waa : 2.2kg, 0.7kg, 1.5kg, 2.1 kg, 1.9kg, 2.1kg, 2.2kg, 1.8kg, 0.6kg, 1.9kg.
  - b) Waa maxay tirosinta culayska kalluunka?
  - t) Waa maxay Badidhacaha culayska kalluunka?
3. Tusaha waxa uu muujinaya dhibcaha imtixaanka iyo tirada ardayda ee heshay dhibic kasta.
  - b) Immisa arday ayaa u fariisatay imtixaanka?
  - t) Waa maxay Badidhacaha dhibcaha?
  - j) Waa maxay tirosinta dhibcaha?
4. Tirada ka soo qayb gashay daawashada 8 cayaarood ee kubbadda cagta waxa ay ahaayeen:
  - 1200, 1000, 1200, 1100, 1300, 1200, 1200, 1000
  - b) Waa maxay tirosinta ka soo qaybgalka?
  - t) Waa maxay Badidhacaha ka soo qaybgalka?
5. Sheeg badidhacaha waxa soo socda:
  - b) 2.5, 2.7, 2.9, 2.5, 2.8
  - j) 45, 49, 47, 48, 47, 46, 45
  - t) 12, 27, 13, 12, 18, 13, 14, 12, 16, 13
  - x) 45, 49, 47, 48, 47, 46, 45

Dhibicda	Ardayda
50	6
65	8
70	9
75	6
80	5
85	4
90	2
95	1
100	1

## Dhexfur

Dhexfur waa halka kala barta inta u dhexaysa qiimaha ugu sarreeya iyo ka ugu hooseeya. Si loo helo dhexfurka 7, 20, 18, 11, 15, 6 iyo 12,

U habbee walxaha horsanaan fanata ama degta.

**horsanaan fanata** 6, 7, 11, 12, 15, 18, 20

**horsanaan degta** 20, 18, 15, 12, 11, 7, 6

Isu jar tirooyinka labada dhinac ilaa midka dhexe:

6, 7, 11, 12, 15, 18, 20

ama

20, 18, 15, 12, 11, 7, 6

∴ 12 waa dhexfurka

Mararka qaarkood dhexda waxa aan ka heli karna laba tiro.

Isugee labada tiro ka dibna wadartooda u qaybi 2. Natiijada waa **dhexfurka**.

**∴ dhexfur waa tirada ama dhacdada ama walax bartanka ugu jirta wax habeysan**

### Tusaalooyin:

(i) Raadi dhexfurka 1, 8, 5, 2, 3, 6, 6, 7, 10

U habee tirooyinka horsanaan fanata ka dibna isu jar si isle'eg labada dhinac.

$$1, 2, 3, 5, 6, 6, 7, 8, 10$$

$$\therefore \text{dhexfurka} = 6$$

(ii) Sheeg dhexfurka 22, 40, 83, 20, 16, 48, 52, 11

Horsanaan fanata 11, 16, 20, 22, 40, 48, 52, 83

$$\text{dhexfurka} = \frac{22 + 40}{2} = \frac{62}{2}$$

$$\therefore \text{dhexfurka} = 31$$

### Layli 3

- Samee horsanaanta xogta ka dibna raadi dhexfurka urur kasta
  - 70, 90, 76, 102, 79, 80
  - 3, 18, 20, 17, 22, 20, 19
  - 10, 5, 7, 13, 14, 12, 12, 10
  - 111, 105, 100, 101, 92, 87, 96, 92, 95
- Heerkulka maanlinlaha ( $^{\circ}\text{C}$ ) ee duhurka ee hal toddobaad waa 26, 24, 30, 25, 27, 29 iyo 23
  - Samee horsanaanta qiimayaasha xogta
  - Xisaabi dhexfurka heerkulka
  - Xisaabi tirosinta heerkulka
- Tusahan waxa uu muujinaya summada ulaha ee dhibcaha imtixaanka ardayda

Dhibco	Summadda ulaha	Arday
100		5
95		3
90		2
85		5

- Raadi badidhace iyo dhexfur
- iyo tirosinka dhibcahan.

- Imtixaanka sanadka dhammaadkiis Caasho waxa ay heshay dhibcaha: 70%, 72%, 64%, 80%, 70%, 45%
  - Waa maxay dhibicda tirosinka?
  - Midkee ah dhibicda dhexfurka?
  - Celceliskee ayaa ay waalidkeed u sheegaysa?

5. Xaliimo waxa ay diiwaan gelisay tirada ukumaha ay dhalaan koox digaag ah maalin kasta:  
9, 10, 13, 12, 10, 11, 12, 9, 9, 9, 9, 11, 12, 11, 12, 13, 11, 10, 10, 11
- b) Xisaabi tiroosinta tirada ukumaha maalintii?
- t) Waa maxay dhexeeyaha tirada ukumaha maalintii?

# 15 ALJEBRA

## Adeegsiga muujiyayaal

Tirada 9 waxa loo qori karaa:

$$9 = 3 \times 3 \text{ ama } 3^2$$

$3^2$  waxa aan oronaynaa:

- 3 ku jibbaaran 2
- 3 labo jibbaaran

2 -da yar waxa loo yaqaan muujiye,  $3^2$ , 2 waa muujiyaha 3 sidaa oo kale 2 waa jibbaarka la dulsaaro 3.

Tirooyinka 27 iyo 8 waxa loo qor fihiri karaa tiro lagu jibbaaray 3.

**27 waxa loo qori karaa :  $3 \times 3 \times 3$  ama  $3^3$**

waxa loo akhriya saddex ku jibbaaran saddex ama saddex-saddex jibbaaran

**8 waxa loo qori karaa :  $2 \times 2 \times 2$  ama  $2^3$**

waxa loo akhriyaa labo jibbaaran saddex ama labo-saddex jibbaaran

$$3^4 = \underbrace{3 \times 3 \times 3 \times 3}_{4 \text{ isiro}} = 81$$

halkan jibbaarka ama muujiyaha 4 waxa uu na tusayaa inta jeer oo ay 3 u soo noqnoqotay isir ahaan

$$\underbrace{2 \times 2 \times 2 \times 2 \times 2}_{5 \text{ isiro}} = 2^5 = 32$$

halkan muujiyaha 5 waxa uu na tusayaa inta jeer oo ay 2 u soo noqnoqotay isir ahaan

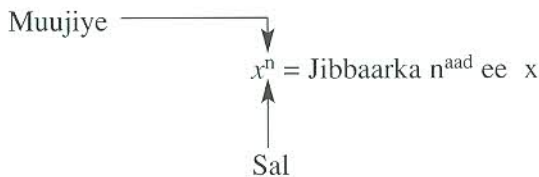
Sida awgeed

$$\underbrace{x \times x \times x \times x}_{4 \text{ isir}} = x^4$$

$$\underbrace{x \times x \times x \times x \times x \times x \times x}_{6 \text{ isir}} = x^6$$

$$x^n = \underbrace{x \times x \times x \times \dots \times x}_{n \text{ isir ama } n \text{ jeer}}$$

Muujiyaha waxa uu na tusayaa inta jeer sal u soo noqnoqday isir ahaan



**Tusaalooyin:**

- (i) U tibaax mid kasta oo soo socda muujiye ahaan:
  - b)  $5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5$
  - t)  $8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8$
  - j)  $11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11$
  - b)  $5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 = 5^7$
  - t)  $8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8 = 8^9$
  - j)  $11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11 \times 11 = 11^{10}$

## Xeerarka muujiye

Tibaaxaha ay ku jiraan muujiyayaal inta badan waa la fududeyn karaa iyada oo la adeegsanayo xeerarka muujiye.

### Iskudhufasho

$$3^4 \times 3^2 = 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 = 3^6$$

Markaas  $3^4 \times 3^2 = 3^{4+2} = 3^6$

$$x^4 \times x^2 = x \times x \times x \times x \times x \times x \times x = x^6$$

Markaas  $x^4 \times x^2 = x^{4+2} = x^6$

Xeerka muujiye ee iskudhufashada:

$$x^a \times x^b = x^{a+b}$$

Marka la isku dhufanayo jibbaarada leh isku sal, isugee muujiyayaasha

### Isuqaybin

$$2^5 \div 2^3 = \frac{2 \times 2 \times 2 \times 2 \times 2}{2 \times 2} = 2^2$$

Markaas,  $2^5 \div 2^3 = 2^{5-3} = 2^2$

$$x^5 \div x^3 = \frac{x \times x \times x \times x \times x}{x \times x} = x^2$$

Markaas,  $x^5 \div x^3 = x^{5-3} = x^2$

Xeerka muujiye ee isuqaybinta:

$$\text{Haddii } a \neq 0, a^5 \div a^3 = a^{5-3} = a^2$$

Marka laysku qaybinayo jibbaarada leh isku sal, kalagoo muujiyayaasha

### Jibbaarka jibbaar

$$(5^2)^3 = 5^2 \times 5^2 \times 5^2 = 5^{2+2+2} = 5^6$$

$$(5^2)^3 = 5^2 \times 3 = 5^6$$

$$(x^2)^3 = x^2 \times x^2 \times x^2 = x^{2+2+2} = x^6$$

$$(x^2)^3 = x^2 \times 3 = x^6$$

Xeerka muujiye ee Jibbaarka jabbaar:

$$(a^x)^y = a^{xy}$$

Jibbaarka jibbaar, isku dhufo muujiyayaasha

## Jibbaarka tarannada

$$(5^3 \times 7^4)^2 = (5^3 \times 7^4) \times (5^3 \times 7^4)$$

$$= 5^3 \times 5^3 \times 7^4 \times 7^4$$

$$= 5^6 \times 7^8$$

$$(5^3 \times 7^4)^2 = 5^{3 \times 2} \times 7^{4 \times 2} = 5^6 \times 7^8$$

$$(x^3 \times y^4)^2 = (x^3 \times y^4) (x^3 \times y^4)$$

$$= x^3 \times x^3 \times y^4 \times y^4$$

$$= x^6 \times y^8$$

$$(x^3 \times y^4)^2 = x^{3 \times 2} \times y^{4 \times 2} = x^6 \times y^8$$

Xeerka muujiye ee Jibbaarka tarannada

$$(x^a y^b)^n = x^{an} \times y^{bn}$$

## Jibbaarka qaybta

$$\left(\frac{7^5}{5^3}\right)^2 = \left(\frac{7^5}{5^3}\right) \left(\frac{7^5}{5^3}\right)$$

$$= \frac{7^5 \times 7^5}{5^3 \times 5^3} = \frac{7^{10}}{5^6}$$

$$\left(\frac{7^5}{5^3}\right)^2 = \left(\frac{7^{5 \times 2}}{5^{3 \times 2}}\right) = \frac{7^{10}}{5^6}$$

$$\left(\frac{x^5}{y^3}\right)^2 = \left(\frac{x^5}{y^3}\right) \left(\frac{x^5}{y^3}\right)$$

$$= \frac{x^5 \times x^5}{y^3 \times y^3} = \frac{x^{10}}{y^6}$$

$$\left(\frac{x^5}{y^3}\right)^2 = \left(\frac{x^{5 \times 2}}{y^{3 \times 2}}\right) = \frac{x^{10}}{y^6}$$

Xeerka muujiye ee Jibbaarka qaybta:

$$\text{If } y \neq 0, \left(\frac{x^a}{y^b}\right)^c = \frac{x^{ac}}{y^{bc}}$$

## Tusaalooyin:

(i) Fududee:

b)  $(2x)(3x^2)$

t)  $(x^2y)(x^4y^3)$

j)  $\frac{14x^5}{7x^3}$

b)  $(2x)(3x^2) = 2 \times 3 \times x \times x \times x^2 = 6x^3$

t)  $(x^2y)(x^4y^3) = x^2 \times x^4 \times y \times y^3 = x^6y^4$

j)  $\frac{14x^5}{7x^3} = \frac{14}{7} \times \frac{x^5}{x^3} = \frac{14}{7} x^{5-3} = 2x^2$

(ii) Fududee:

$$\frac{(6a^2b^3)(2a^3b^5)}{(2ab)^2} = \frac{6 \times 2a^{2+3} b^{3+5}}{2^2 a^2 b^2} = \frac{12}{4} a^{5-2} b^{8-2} = 3a^3 b^6$$

(iii) Fududee:

b)  $(2x^2y)(3x^3y^4)$

t)  $\frac{18a^4b^5}{12a^2b}$

b)  $(2x^2y)(3x^3y^4) = 2 \times 3 \times x^2 \times x^3 \times y \times y^4 = 6x^5y^5$

t)  $\frac{18a^4b^5}{12a^2b} = \frac{18}{12} \times \frac{a^4}{a^2} \times \frac{b^5}{b} = \frac{18}{12} \times a^{4-2} b^{5-1} = \frac{3}{2} a^2 b^4$

Layli 1

1. Fududee:

- b)  $(x^3)(x^5)$                       t)  $(a^2)(a^{10})$                       j) (b)(b)(b)  
 x)  $(m^2)(m^3)(m)$                       kh)  $(a^2)(a^3)(b)(b^4)$                       d) (a)(b)(a<sup>2</sup>)(b<sup>3</sup>)

2. Fududee:

- b)  $a^7 \div a^3$                       t)  $b^3 \div b^2$                       j)  $n^{12} \div n^3$   
 x)  $x^8 \div x^5$                       kh)  $a^5 \div a$                       d)  $x^{10} \div x^9$

3. Fududee:

- b)  $(x^4)^2$                       t)  $(a^3)^3$                       j)  $(a^2b)^3$   
 x)  $(xy^3)^5$                       kh)  $(abc)^5$                       d)  $(b^8)^3$   
 r)  $(2x^3)^3$                       s)  $(a^5b^2)^3$                       sh)  $(3a^5)^2$

4. Fududee:

- b)  $(\frac{x}{y})^5$                       t)  $(\frac{a^2}{3})^2$                       j)  $(\frac{x^2}{y})^3$                       x)  $(\frac{a}{b^5})^4$   
 kh)  $(\frac{3x}{y})^2$                       d)  $(\frac{2x^2}{w})^3$                       r)  $(\frac{5a^2}{2b^3})^2$                       s)  $(\frac{3a}{b^3})^2$

5. Fududee:

- b)  $(5a^3)(3a^6)$                       t)  $(4x^2)(-2x^3)$                       j)  $(3a^2b^3)(2ab^2)$   
 x)  $(2x)(5x^3)$                       kh)  $(5mn)(3m)$                       d)  $(-4x^3)(-3x^2)$   
 r)  $(3y)(5y)(2y^2)$                       s)  $(a)(2a^2)(-3a^5)$

6. Fududee:

- b)  $\frac{(81b^2)(3a^2b)}{12a^3}$                       t)  $\frac{(3x^2y^5)^3}{9xy^2}$                       j)  $\frac{(12m^2n^5)(-5mn^3)}{15m^3n^2}$

7. Fududee:

- b)  $12a^5 \div 3a^3$                       t)  $21x^2y^5 \div 7xy$                       j)  $8a^2 \div 8a$

**Isugeynta iyo kalagoynta tibxaalayaasha**

"tibix" waa tibaaxle aljibraad oo ka kooban tirooyin ama doorsoome laysku qabtay si ay u sameeyaan taran ama qayb. Tusaalooyin tibix waa:

5x,                      7,                      -4y iyo 3xy

Qaybta tirada ee tibixda waxa la yidhaahda weheliye. Tibixda waxa kaloo ay lahaan karta xaraf ama qayb doorsoome. Tibaaxaha waxa ay ka sameysmaan tibxo. Tibxaha isu eg waa la isu geyn karaa ama la kalgoyin karaa sida xisaabta aad ku soo baratay.



## Layli 2

1. Isugee tibxaha isu eg:

b)	t)	j)	x)
$3x + 4y$	$4x^2 + 3x$	$7xy + 5w$	$5x - 6y$
<u><math>2y + y</math></u>	<u><math>7x^2 + 10x</math></u>	<u><math>20xy - 2w</math></u>	<u><math>2x + 5y</math></u>

2. Isugee tibaaxahan

b)  $3w - 7x + 4y$ ;  $6w - 5x - 8y$   
 t)  $2m^2 - 3m - 9$ ;  $m^2 - m + 6$ ;  $2m^2 + 6m - 3$   
 j)  $6x^2 - 5 + 4x$ ;  $6x - x^2 + 7$ ;  $10 - 3x^2 + 9x$

3. Kala goo tibxaha isu eg:

b)	t)	j)	x)
$5x + 3y$	$3x^2 + 3x - 7$	$5x - 2x + 3$	$4y^2 - 2y + 3$
<u><math>2x + 2y</math></u>	<u><math>x^2 - x + 2</math></u>	<u><math>2x^2 + 4x - 2</math></u>	<u><math>5y^2 + 3y + 1</math></u>

## Tusaalooyin:

Si la isugu geeyo tibxaale , isu ururi tibxaha isu eg

(i) Isugee

$2x^2 + 3x - 1$
$x^2 + 2x + 4$
$2x^2 - x + 3$
$6x^2 + 4x + 6$

 $(-1) + 4 + 3 = 6$ . ku qor 6 joogga madoorsoomaha $3x + 2x + (-x) = 4x$ . ku qor 4x joogga x $2x^2 + x^2 + 3x^2 = 6x^2$  ku qor 6x2 joogga x2

(ii) Fududee

$(x^2 - 3xy + 2y^2) + (2x^2 - xy - y^2)$

$(x^2 - 3xy + 2y^2) + (2x^2 - xy - y^2)$

$= x^2 - 3xy + 2y^2 + 2x^2 - xy - y^2$

$= 3x^2 - 4xy + y^2$

Si loo kala gooyo tibxaale qor lidka ka la goynaya ka dibna isugee

(iii) Kala goo

$4x^2 - 3x + 1$
$x^2 + 2x - 3$

 $x + 2x - 3$  waa la gooyaha

$4x - 3x + 1$
$-x^2 - 2x + 3$
$3x^2 - 5x + 4$

Qor lidka gooyaha

Tibxaha lidka waa  $(-x^2)$ ,  $(-2x)$  iyo  $(+3)$ . $(+1) + (+3) = +4$ . ku qor 4 joogga madoorsoomaha $(-3x) + (-2x) = -5x$ .  $-5x$  ku qor  $-5x$  joogga x $4x^2 + (-x^2) = +3x^2$  ku qor  $3x^2$  joogga  $x^2$

(iv) Fududee.  $(9y^2 + y - 3) - (6y^2 + 2y + 4)$

$$(9y^2 + y - 3) - (6y^2 + 2y + 4)$$

$$= 9y^2 + y - 3 - 6y^2 - 2y - 4$$

$$= 3y^2 - y - 7$$

ka saar bilaha, beddel calaamadaha  
isku ururi tibxaha isu'eg

### Layli 3

1. tibxaalaha labaad ka goo ka kowaad

a)  $2x + 3y;$                        $5x + 6y$

b)  $3w + 2x + 5y;$              $7w + 11x + 9y$

c)  $6x - 5x^2 + 8;$                  $4 - 3x + 2x^2$

2. Fududee.

b)  $(x^3 + 6) + (x + 3)$

t)  $(x^2 + 2x) + (-7x + 2)$

j)  $(y^3 + 2y^2 + 3) + (4y^2 - 3y - 1)$

3. Fududee.

b)  $(6x - 3) - (7x + y)$

t)  $(7y^2 - xy) - (8x^2 + xy)$

j)  $(13x^3 - 3x^2 - xy) - (13y^3 - 3y^2 - xy)$

4. Fududee.

b)  $(3x^2 - 2y) - (2y + 3x^2) + (x^2 - 2y)$

t)  $(-3xy - 2y^2) - (x^2 - y^2) + (3x^2 - xy)$

## Isku dhufashada tibaaxaha

Taranka  $(x + 5)(x + 3)$  waxa lagu muujin karaa jaantus iyada oo loo muujinayo sida bedka laydi leh dhinacyada  $(x + 3)$  iyo  $(x + 5)$ .

Bedka laydi                       $= (x + 5)(x + 3)$

Bedka laydi                       $= A_1 + A_2 + A_3 + A_4$

$$= x^2 + 3x + 5x + 15$$

$$= x^2 + 8x + 15$$

$x + 5$		}	x
$A_1 = x$	$A_3 = 5x$		
$A_2 = 3x$	$A_4 = 15$	}	3

$$(x + 3)(x + 5) = x^2 + 8x + 15$$

Habka kala-dhigga waxa kale oo loo isticmaalaa isku dhufashada tibaaxaha.

$$(a + b)(c + d) = a(c + d) + b(c + d)$$

$$= ac + ad + bc + bd$$

si la mid ah:  $(x + 5)(x + 3) = x(x + 3) + 5(x + 3)$

$$= x^2 + 3x + 5x + 15$$

$$= x^2 + 8x + 15$$

isla natiijada ayaa la helayaa marka  
tibix walba ee tibxaalaha lagu dhufto  
tibix kale ee tibxaalaha kale

ama

$$\begin{aligned}
 (x + 5)(x + 3) &= (x + 5)(x + 3) \\
 &= (x + 5)x + (x + 5)3 \\
 &= x^2 + 5x + 3x + 15 \\
 &= x^2 + 8x + 15
 \end{aligned}$$

**Tusaalooyin:**(i) Fidi oo Fududee.  $(2x - 3)(5x + 7)$ 

$$\begin{aligned}
 (2x - 3)(5x + 7) &= 10x^2 + 14x - 15x - 21 \\
 &= 10x^2 - x - 21
 \end{aligned}$$

(ii) Fidi oo Fududee.  $2(2x + 1)(x - 3) - 4(x + 5)$ 

$$\begin{aligned}
 2(2x + 1)(x - 3) - 4(x + 5) &= 2(2x^2 - 6x + x - 3) - 4(x + 5) \\
 &= 2(2x^2 - 5x - 3) - 4(x + 5) \\
 &= 4x^2 - 10x - 6 - 4x - 20 \\
 &= 4x^2 - 14x - 26
 \end{aligned}$$

**Layli 4**1. Sheeg bedka laydi yar kasta, ka dib isugee si loo fidiyo  $(x + 3)(x + 2)$ 

$x + 3$		
$x$	$3$	
	$x$	$x + 2$
	$2$	

2. Sawir laydi si uu kaaga caawiyo fidinta iyo fududaynta kuwan:

b)  $(q + 3)(q + 1)$       t)  $(r + 2)(r + 5)$       j)  $(m + 4)$

3. Fidi.

b)  $(x + 1)(x + 2)$       t)  $(x + 2)(x + 3)$       j)  $(x + 4)(x + 2)$   
 x)  $(x - 1)(x - 3)$       kh)  $(x - 3)(x + 5)$       d)  $(x + 2)(x - 1)$   
 r)  $(y - 5)(y - 4)$       s)  $(t + 7)(t + 8)$       sh)  $(m - 4)(m + 9)$   
 dh)  $(n - 2)(n - 9)$       c)  $(x + 8)(x + 6)$       g)  $(y + 1)(y - 7)$   
 f)  $(x + 7)(x + 6)$       q)  $(t - 5)(t - 9)$       k)  $(m - 6)(m - 11)$

4. Fidi oo Fududee.

b)  $(2x + 3)(x + 5)$       t)  $(3x + 4)(2x + 7)$       j)  $(7y - 2)(2y + 5)$   
 x)  $(2m - 5)(3m - 1)$       kh)  $(2x - 5)(2x + 5)$       d)  $(3x + 5)$   
 r)  $(5m + 2n)(4m - n)$       s)  $(4t + 7)(2t + 3)$       sh)  $(3x - 2y)(4x - 3y)$   
 dh)  $(4m - 3)$       c)  $(5t - 6)$       g)  $(7t + 4)$

5. Fidi oo Fududee.

b)  $(3x + 5y)$       t)  $(3x + 7y)(4y - x)$       j)  $(7 - 8t)(7 + 8t)$   
 x)  $(4x - 9y)(2y + 7x)$       kh)  $(9x + 10y)(8x + 3y)$       d)  $(2m - 5n)$

6. Fidi oo Fududee.

b)  $2(x + 3)(x + 4) + 3(2x + 3)$       t)  $3(x + 1)(x + 2) + 2(x + 4)(x + 5)$   
 j)  $5(t - 3)(t + 4) - 5(t - 6)(t - 5)$       x)  $2(m + 3) + 3(m - 1) - 2(m - 4)$

## Taran laba-tibxaale u gaar ah

Tusaalooyinka waxa ay soo jeedinayaan naqshad labajibbaarid.

$$\begin{aligned} (x + 3)^2 &= (x + 3)(x + 3) \\ &= x^2 + 3x + 3x + 9 \\ &= x^2 + 6x + 9 \end{aligned}$$

$$\begin{aligned} (3x - 5)^2 &= (3x - 5)(3x - 5) \\ &= 9x^2 - 15x - 15x + 25 \\ &= 9x^2 - 2(15x) + 25 \\ &= 9x^2 - 30x + 25 \end{aligned}$$

Taranka khaaska ah ee  $(a + b)$  iyo  $(a - b)$

$$\begin{aligned} (a + b)^2 &= (a + b)(a + b) \\ &= a^2 + ab + ab + b^2 \\ &= a^2 + 2ab + b^2 \end{aligned}$$

$$\begin{aligned} (a - b)^2 &= (a - b)(a - b) \\ &= a^2 - ab - ab + b^2 \\ &= a^2 - 2ab + b^2 \end{aligned}$$

u gee labajibbaarka tibixda hore, labalaabka taranka labada tibix, labajibbaarka tibixda dambe.

## Tusaalooyin:

(i) Adiga oo adeegsanaya naqshadda taranka khaaska ah fududee:  $(2x + 3y)^2$ .

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$\begin{aligned}(2x + 3y)^2 &= (2x)^2 + 2(2x)(3y) + (3y)^2 \\ &= 4x^2 + 12xy + 9y^2\end{aligned}$$

Taranka labo tibxaale sida  $(a + b)(a - b)$  waxa aynu soo jeedinay naqshad kale oo khaas ah

Taranka khaaska ee  $(a + b)(a - b)$

$$\begin{aligned}(a + b)(a - b) &= a^2 - ab + ab - b^2 \\ &= a^2 - b^2\end{aligned}$$

Taranka khaaska ee  $(a + b)(a - b)$  waxa uu ina na siinayaa faraaqa labajibbaarada.

Adiga oo adeegsanaya naqshada faraaqa labo labajibaaran,

adeegso  $(a + b)(a - b) = a^2 - b^2$  si aad u fududayso  $(3x - 4y)(3x + 4y)$ .

$$\begin{aligned}(a - b)(a + b) &= a^2 - b^2 \\ (3x - 4y)(3x + 4y) &= (3x)^2 - (4y)^2 \\ &= 9x^2 - 16y^2\end{aligned}$$

## Layli 5

1. Fidi:

b)  $(x + 3)^2$

t)  $(x - 2)^2$

j)  $(x + 5)^2$

x)  $(x - 4)(x + 4)$

kh)  $(y + 2)^2$

d)  $(m - 7)^2$

r)  $(t + 5)(t - 5)$

s)  $(x + 6)(x - 6)$

sh)  $(y + 1)^2$

dh)  $(x - 9)^2$

c)  $(x + 10)^2$

g)  $(x - 6)^2$

f)  $(x + 12)^2$

q)  $(x - 6)^2$

k)  $(y - 1)(y + 1)$

2. Fidi oo fududee.

b)  $(3x - 5)(3x + 5)$

t)  $(2x + 7)^2$

j)  $(4x + 5)^2$

x)  $(2x - 3y)^2$

kh)  $(5x - y)(5x + y)$

d)  $(a + 2b)^2$

r)  $(ab + 2)(ab - 2)$

s)  $(x^2 - 3m)(4 + 3m)$

sh)  $(4 - 3m)(4 + 3m)$

3. Qiimee waxa soo socda adiga oo adeegsanaya mid ka mid ah taranka khaaska ah ee  $(a + b)^2$  ama  $(a - b)^2$

b)  $52^2$

t)  $(40 - 5)(40 + 5)$

j)  $95^2$

x)  $71^2$

kh) 101

d)  $(30 + 3)(30 - 3)$

r)  $83^2$

s)  $(4 + 50)(4 - 50)$

4. Fidi oo fududee.

b)  $2x + (x + 4)^2$

t)  $x^2 - (2x - 1)^2$

j)  $3ab + (2a - 7b)^2$

x)  $-4x^2 + (3x - y)(3x + y)$

kh)  $(2a - 3b)^2 - (a^2 + 4ab)$

d)  $(ab - 2c)(ab + 2c) - (ab)^2$

5. Fidi oo fududee.

b)  $(x + 2)^2 + (x - 5)^2$

t)  $2(x - 4)(x + 4) - x^2$

j)  $(x + 5)(x - 3) + (x + 4)^2$

x)  $7 - (x - 6)^2$

kh)  $3 + 2x)(3 - 2x) - (3 + 2x)^2$

d)  $4(5x - 1) - 2(3x + 1)(3x - 1)$

6. Qiimee adiga oo adeegsanaya taranka khaaska  $(a + b)(a - b)$ :

b)  $87 \times 93 = (90 - 3)(90 + 3)$

t)  $105 \times 95 = (100 + 5)(100 - 5)$

j)  $48 \times 52$

x)  $29 \times 51$

## Isle'egyo ay ku jiraan Bilo

Isle'eg waa weedh xisaabeed isku xidha labo tibaax oo leh calaamadda isle'egta "=", waxaana la xisaabin qiimaha doorsoomaha ama xaraf.

### Xusuuso horsanaanta xisaab-fallada

Bilo, ka ,isuqaybin, iskudhufashada, isugeynta kalagoynta

### Tusaalooyin:

(i) Furfur isle'egta  $2(6x + 2) = 2(2x + 10)$

$2(6x + 2) = 12x + 4$

$12x + 4 = 4x + 20$

$12x - 4x + 4 = 4x - 4x + 20$

$8x + 4 = 20$

$8x + 4 - 4 = 20 - 4$

$8x = 16$

$\frac{8x}{8} = \frac{16}{8}$

$x = 2$

Ogow: tibix sida 4x waxa loo tixgeliyaa in ay haysato calaamadda + ama togane tahay.

marka hore ka shaqee bilaha labada dhinac ee calaamadda isle'egta

ka goo 4x labada dhinac:

ka goo 4x labada dhinac:

U qaybi labada dhinac 8

(ii) Furfur  $6n = 2n - 56$

$6n - 2n = 2n - 56 - 2n$

$4n = -56$

$\frac{4n}{4} = \frac{-56}{4}$

$n = -14$

ka goo 2n labada dhinac:

U qaybi labada dhinac 4

## ku beddelasho

(i) Qiimee a  $\frac{a(abc + d^2)}{b^2 - a^2}$  marka a = 1; b = 3; c = 5 iyo d = 7

xarfaha ku beddelo tirooyinka:  $\frac{1 \times (3 \times 5 + 7^2)}{3^2 - 1^2}$

$\frac{1(15 + 49)}{9 - 1} = \frac{1 \times 15 + 1 \times 49}{8}$  Ka saar bilaha

$$= \frac{15 + 49}{8}$$

$$= \frac{64}{8}$$

$$= 8$$

(ii) Qiimee  $2 \frac{2(a^2 + b^2)}{3c - d^2}$  marka  $a = 3$ ;  $b = 5$ ;  $c = 4$  iyo  $d = 2$

xarfaha ku beddelo tirooyinka:

$$\frac{2(3^2 + 5^2)}{3 \times 4 - 2^2} = \frac{2(9 + 25)}{12 - 4}$$

$$= \frac{2 \times 9 + 2 \times 25}{12 - 4}$$

$$= \frac{18 + 50}{8}$$

$$= \frac{68}{8}$$

$$= \frac{17}{2}$$

$$= 8 \frac{1}{2}$$

### Layli 6

1. Furfur:

b)  $3a + 2 = 7$

t)  $s + 9 = -11$

j)  $3(4 + t) - 2(2 - t) = 20$

x)  $2(m + 3) = 12$

kh)  $2(x + 4) = 3(x - 5)$

d)  $7d - 2(d + 3) = 9$

r)  $5(c + 5) = 4(2c + 5)$  s)  $4(q + 1) - 3(5q - 7) = 16$

2. Qiimee waxa soo socda marka la isa siiyo  $r = 4$ ;  $s = 3$ ;  $t = 2$  iyo  $u = 1$ .

b)  $2t + u$

t)  $5(r + t)$

j)  $t + r^2 + u^2$

x)  $s^2 + t^2$

kh)  $r^2 - t^2$

d)  $\frac{2(r - t)}{5(s + u)}$

r)  $\frac{r^2 + u^2}{s^2}$

s)  $\frac{3s^2 - r^2}{r^2 - 2u^2}$

3. Waa maxay qiimaha:

b)  $\frac{2x^2(y^2 + \sqrt{m})}{t}$  marka  $x = 3$ ;  $y = 5$ ;  $m = 16$  iyo  $t = 4$

t)  $\frac{a(b^2 - c^2)}{a - c}$  marka  $a = 3$ ;  $b = 6$  iyo  $c = 4$

j)  $\frac{2a^2(b^2 - c^2)}{2a + c}$  marka  $a = 4$ ;  $b = 5$  iyo  $c = 2$

x)  $ut + \frac{1}{2}gt^2$  marka  $u = 4$ ;  $g = 10$  iyo  $t = 5$

4. Haddii  $w = 3$   $x = 2$  iyo  $y = 4$ , qiimee:

- b)  $2xy$                       t)  $3wxy$                       j)  $3x+4w+5y$                       x)  $3x-24$   
 kh)  $w^2 + x^2 + y^2$                       d)  $w - x - y$                       r)  $2 \times 2 - 3x - 4$                       s)  $wx - xy - 2wy$   
 sh)  $3x^2 - 2xy - y^2$  dh)  $4(3x - 2y)$                       c)  $2w^2x - 3xy^2$                       g)  $w^3 - x^4 - y^2$

5. Haddii  $w = -1$ ,  $x = -z$  iyo  $y = 3$ , qiimee:

- b)  $3w + 2 \times 4y$                       t)  $5x - 34$                       j)  $3wxy$                       x)  $-4wxy$   
 kh)  $w - x - y$                       d)  $w^2 + x^2 + y^2$                       r)  $x^2 - w^2 - y^2$                       s)  $3wx - xy + y$   
 sh)  $3w^2x^2 - 4xy^2$                       dh)  $w^5 - 2x^3 - 7$                       c)  $-2(w^3 - 3w^2)$                       g)  $w^2 - 2x^3 - 7$

## Dheelli

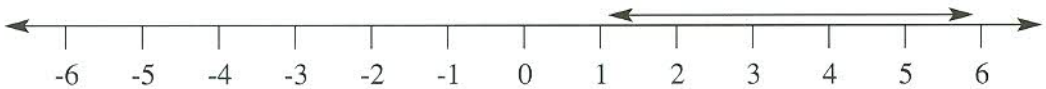
### Xusuus

{1, 2, 3, 4, 5, 6, 7,.....} waa ururka tirooyinka tirsiimo

{0, 1, 2, 3, 4, 5, .....} waa ururka tirooyinka idil

{....., -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, .....} waa ururka abyoonyaasha

Xarriiqdan tirada waxa ay muujinaysa tirooyinka idil ee u dhexeeya 1 iyo 6 lakiin aan ku jirin 1 iyo 6.



Ururka tirooyinka idil ee u dhexeeya 1 iyo 6 waa {2, 3, 4, 5}

Haddii aan u qaadano  $x$  tiro idil oo u dhexeeya 1 iyo 6, tiro walba oo 2, 3, 4 ama 5 waxa loo qaadan karaa  $x$ . Dheeliga u taagan tirooyinka idil ee u dhexeeya 1 iyo 6 waa  $1 < x < 6$ , waxaana loo akhriyaa:  $x$  waa ka weyn tahay 1 waana ka yar tahay 6.

### Tusaalooyin:

(i) Qor dheelliga mid kasta oo soo socda:

- b)  $x$  waa abyoone ka weyn 4.  
 t)  $y$  waa abyoone ka yar 10.

b)  $x$  waa abyoone ka weyn 4 oo ka baxsan 4 nafteeda; t.a.  $x > 4$

$$x = \{5, 6, 7, \dots\}$$

- t)  $y$  waa abyoone ka yar 10, oo 10-na aan ku jirin, t.a  $b < 10$   
 $y = \{9, 8, 7, 6, 5, \dots\}$

(ii) U qor ururada soo socda dheeliyada  $x$ :

- b) {3, 4, 5, 6, 7}                      t) {-5, -4, -3, -2}  
 b)  $2 < n < 8$                       t)  $6 < n < -1$



Layli 7

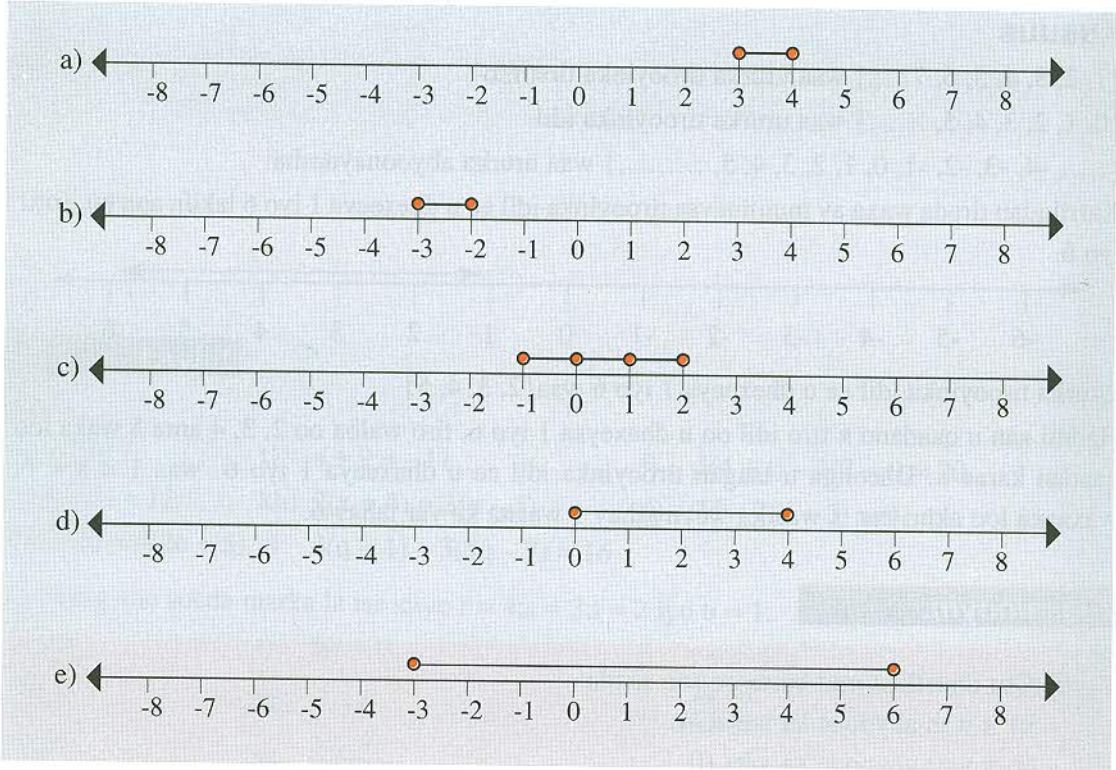
1. Qor dheelliyada mid kasta oo ka mid ah kuwa soo socda:

- b) b waa ka weyn tahay 4      t) q waa ka yar tahay 12      j) r waa ka weyn tahay 15  
 x) k waa ka yar tahay -3      kh) m waa ka weyn tahay -8      d) n waa ka yar tahay -17

2. Qor dheelliyada abyoonaayaasha x ee raali gelinaya ururadan soo socda:

- {7,8}                                  {5, 4, 3}                                  {-3, -2}  
 {-8, -7, -6, -5}                      {-2, -3, -4}                              {-2, -1, 0, 1, 2, 3}  
 {-3, -2, -1}                              {1, 2}                                          {-1}

3. Waa maxay dheelliyada u taagan xariiq tiro walba ee hoose?



4. Sawir xarriiqaha tirada ee dheelliyadan soo socda :

- b)  $-3 < x < 5$                       t)  $4 < x < 6$                                   j)  $5 > x > 2$   
 x)  $-4 > x > 7$                       kh)  $2 > x > -3$                               d)  $-8 < x < -3$



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