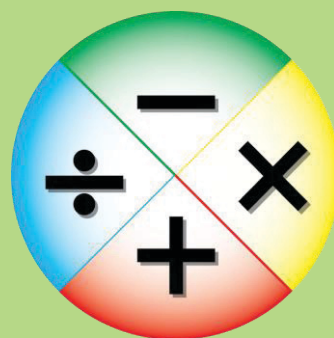


Cutubka

1 aad



TIROOYINKA IDIL IYO AFARTA XISAABFAL

UJEDDOOYINKA CUTUBKA

Dhamaadka cutubkani waxaad awoodi doontaan inaad

- ✚ *Akhridaan tirooyinka idil ee ka badan 1,000,000.*
- ✚ *Isbarbar dhigtaan oo aad isku habaysaan tirooyinka idil ee ka badan ama ka wayn 1,000,000.*
- ✚ *Sheegtaan ama garataan godka ka dambeeya iyo kii ka horeeyay tiro idil oo lagu siiyay (marka laga reebo eber).*
- ✚ *Garataan qiimo rugeedka god kasta ee tiro idil oo lagu siiyay.*
- ✚ *Kala garataan tirooyinka dhabanka ah iyo kuwa kisiga ah ee tirooyinka idil.*
- ✚ *Soo bandhigtaan adeegsiga isugaynta iyo kalagoynta.*
- ✚ *Garataan astaamaha aasaasiga ah ee isugaynta ee tirooyinka idil*
- ✚ *Xalisaan masalooyinka iskudhufashada ee tirooyinka idil.*
- ✚ *Garataan astaanta kala dhiga iskudhufashada ee isugaynta.*
- ✚ *U qaybisaan tirooyin idil, tiro idil oo kale oo aan eber ahayn.*

TUSMOOYINKA MUHIMKA AH

1.1 Tirooyinka idil ee ka badan 1,000,000.

1.2 Adeegsiga tirooyinka idil.

Erayada furaha ah

Soo koobida

Laylisyada guud

HORDHAC

Aduunyadan aynu maanta ku noolnahay ee cilmiga sayniska iyo farsamada casriga ah ay hore u martay, waxaynu ubaahanahay inaynu tibaaxno ama sheegno waxa ugu yar ama ugu wayn ee waxyaabaha inagu wareegsan, taasina waa sababaha aynu u baranayno tirooyinka.

Waxaad horay u soo baratay tirooyinka idil laga soo bilaabo 0 ilaa 1,000,000, iyo sida loogu adeegsado nolol-maalmeedka, sanadkana waxaad baran doontaan ood ka shaqayndoontaan tirooyinka Idil ee ka badan 1,000,000, sidaa darteed waad tibaaxi kartaa shay yada ugu wayn ee aad rabto.

Waxaa kalood arki doontaa calaamado badan oo la adeegsado iyo astaamaha tirooyinka aad ku soo aragtay fasalkii 4^{aad} ayaa loo adeegsan doonaa in lagu shaqeeyo tirooyinka ka badan 1,000,000. Sidaas darteed waxaa aad kuugu fiican inaad dib u jaleecdo buugii fasalka Afraad, ka hor intaanad u gudbin cutubyada cusub. Tani waxay kaa dhigaysaa inaad isku diyaariso safarka xiisaha leh ee aad ugu socoto xisaabta fasalka 5^{aad}, Nasiib Fiican.

1.1. TIROOYINKA IDIL EE KAWAYN 1,000,000

1.1.1 NAQTIIN TIROOYINKA IDIL ILAA IYO 1,000,000

Hawlgalka 1.1



- 1 Akhri tirooyinka soo socda oo mid walba erey ahaan ku qor.

b 234	j 1,111	kh 14,690	r 65673
t 231,112	x 6,429	d 990,901	s 100,003
- 2 Mid kastoo weedhahan soo socda ka mid ahba waxaad u qortaa tiro ahaan.

b Boqol iyo kow
t Kun iyo sideed boqol iyo todobaatan.
j Saddex boqol oo kun shan boqol iyo lix iyo sodon.
x Toban kun iyo todoba.
- 3 Tirooyinkan isku habee adoo ka bilaabaya ta ugu yar ilaa ta ugu wayn.

b 242,667	24,266	9,033.
t 567,980	34,789	169,875 458,700.
- 4 Qor da'da saaxiibadaa iyo magacyadooda adigoo ka bilaabaya ka ugu yar ilaa ka ugu wayn.

5 Naqil oo dhig calaamada ugu haboon (< ama >)meesha u dhaxaysa lamaane kasta oo tirooyinka soo socda ah:

b 456,780 ___ 456,098 **t** 638,561 ___ 638,516

j 10,022 ___ 10,122.

Tiro kasta oo tiro idil ah waxay leedahay hal ama in kabadan oo godad ah. God kastaba wuxuu buuxinayaa meel. Waxaynu akhriinaa tirooyinkaasi inagoo adeegsanayna qiimo rugeedka uu godkastaaba buuxiyo.



Qiimaha meesha uu god kastaaba buuxiyo ee tiro waxaa loo yaqaanaa qiimo rugeed.

Tusaale ahaan, 8976 waxaa loo akhriyaa 8 kun, 9 boqol iyo todobaatan iyo lix, tani macnaheedu waxa weeyi tirada 8976, ayaa waxa jira 8 kun, 9 boqol, 7 tobnaad iyo 6 kowaadyo. Sidaasi darteed qiima rugeedka 9 waa boqlaad, qiima rugeedka 7 waa tobnaad, qiima rugeedka 6 waa koowaad.

Shaxda 1, waxay ina tusaysaa qiimo rugeedyada tirooyinka ku jooga ilaa lix god. Godka ugu ahmiyada wayni ee tiradu waa midka leh qiimo rugeedka ugu wayn. Godka ugu ahmiyada wayn, waa god ugu bidixeeeyaaa godka, ka ugu ahmiyada yarina waa godka ugu midigeeya.

Shaxda 1 Qiimo rugeed

100,000	10,000	1,000	100	10	1
Boqol kumaad	Toban kumaad	Kumaad	Boqlaad	Tobnaad	Kowaad
↑	↑	↑	↑	↑	↑
8	9	5	6	7	3
Waxaana loo akhriyaa siddeed boqol sagaashan iyo shan kun, lix boqol toddobaatan iyo saddex					

Tusaale 1: akhri kuwan soo socda oo u qor erayo ahaan.

b 51,676 **t** 195,673 **j** 345,999.

Furfuris:

b tirada 51,676 waxaa loo akhriyaa konton iyo kow kun lix boqol todobaatan iyo lix.

t 195,672, waxaa loo akhriyaa boqol sagaashan iyo shan kun lix boqol iyo todobaatan iyo laba.

- 3 Shaxdan hoose waxay ku siinaysaa dhexroorka saddexda meere ee ugu yar habka qorraxeedka. Tax meerayaasha adigoo u eegaya baaxadooda kana bilaabaya ka ugu wayn ilaa ka ugu yar.

Meere	Dhexroor (km)
Dhulka	12740
Merkuri	4550
Maris	6790

1.1.2 TIROOYINKA IDIL EE KA WEYN 1,000,000

Hawlgalka 1.2



- 1 Gawaadhida buluuga ah ee aad ku aragto sawirka waxaa loo yaqaan tagaasida, basaska yar-yar (caasiga). Waxay adeeg ka bixiyaan Adis-Ababa, iyo sidoo kale magaalooyin badan. Bas kastaaba wuxuu qaadaa 12 rakaab ah, wuxuuna noqdaa cel-celis ahaan maalintii 10 jeer, waxaana jira in ka badan 8000 oo bas Addis-Ababa. Imisa rakaab ah ayay basaskaasi maalinkasta qaadaan?



- 2 Waligaa miyaad aragtay geed muus ah? Waxaad halkan ku arkaysaa waa geedo muus ah iyo xidhmo muus ah oo geed ku taal. Imisa muus ayaad u malaynaysaa inuu geedku qaadi karo? Imisa muus ayay yeelan karaan 1000 geed?



- 3 Sannadii 2000 E.C shirkada diyaaradaha ee Itoobiya waxay qaaday 2.5 milyan oo rakaab ah waxayna heshay faa'iido dhan 507 milyan oo birr. Sannadkii 2001 E.C. shirkada diyaaraduhu waxay qaaday 3 milyan oo rakaab ah, waxayna heshay faa'iido dhan 1 bilyan iyo 345 milyan oo birr.



Waa imisa faa'iidada ay heshay shirkada diyaaradaha ee Itoobiya labadaa sano? Imisa rakaab ah ayay shirkadu u adeegtay labadaasi sano?

- 4 Intee Inle'egbuu dayuxu dhulka ka fog yahay ?
- 5 Waa imisa tirada dadka ee gobolkaagu?

Markaynu ka nimaadno hawlgalkaasi sare waxaad ku soo aragtay inaanay ku filnayn in lagu tibaaxo waxyaabo badan adduunyada ah inagoo isticmaalayna tirooyin ilaa 1,000,000 oo keliya ah. Sidaas darteed waxaad baran doontaa sida loo helo tirooyinka ka badan tirooyinkii aad hore u taqaanay.

Aynu fiirino si aynu u helno hal milyan iyo tirooyinka ka weyn milyan.

- b** $999,999 + 1 = 1,000,000$, waxaa loo akhriyaa hal milyan
- t** $1,000,000 + 1 = 1,000,001$, waxaa loo akhriyaa hal milyan iyo hal.
- j** $1,000,000 + 2 = 1,000,002$, waxaa loo akhriyaa hal milyan iyo laba IWM.

Si aynu u akhrino tirooyinka ka weyn hal milyan waxaynu adeegsan qiimo rugeed la mid ah sida aynu kor ku soo falanqaynay. Waxaynu adeegsan karnaa qiima rugeedka shaxdan hoose.

Shaxda 2

1,000,000,000	100,000,000	10,000,000	1,000,000	100,000	10,000	1,000	100	10	1
Hal bilyanaad	Boqol milyanaad	Toban milyanaad	Hal milyanaad	Boqol kumaad	Toban kumaad	kumaad	boqlaad	tobnaad	kowaad
↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
			7	8	9	5	6	7	3
7,895,673, waxaana loo akhriyi karaa toddoba milyan siddeed boqol sagaashan iyo shan kun lix boqol toddobaatan iyo saddex.									

Tusaale 1 Adeegso shaxda 2, ee sare si aad u akhriso tirooyinka oo erayo ahaana ugu qorto.

- b** 223,457,901
- t** 5,687,895,673.

Furfuris:

- b** 223,457,901, waxaa loo akhriyaa 223 milyan, 457 kun iyo 901.
- t** 5,687,895,673, waxaa loo akhriyaa 5bilyan 687 milyan 895 kun iyo 763.

LAYLIS 1.2

1 Akhri tirooyinka soo socda oo mid kasta oo ka mid ahna u qor eray ahaan.

- b** 2,345,678
- t** 11,233,376
- j** 101,234,567
- x** 6,101,034,478
- kh** 13,908,684,451.

- 2** Mid kastoo weedhahan soo socda ah waxaad u qortaa tiro ahaan.
- b** saddex milyan afar boqol iyo shan.
- t** boqol iyo shan milyan.
- j** sideed bilyan saddex milyan laba boqol oo kun shan boqol iyo saddex iyo lixdan.

Isku Habaynta Tirooyinka idil:

Hawlgalka 1.3

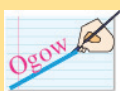


Adiga iyo saaxiibkaa waxaa laga yaabaa in aad isbarbar dhigteen waxyaabo badan oo inagu wareegsan, imikana halkan waa in aad isbarbardhigtaan wax yaabo kala duwan.

- 1** Isku habee tirooyinka adiga oo ka bilaabaya tirooyinka ta ugu yar ilaa ta ugu wayn (habka kordhaya).
- b** 6,714,690 1,255,730 4,206,302 1,309,542 14,219 127,008
- t** 6,439,006 3,594,962 12,008,860 102,708,420 360,285,114 55,7,606.
- 2** Maxay ahaayeen dhibcahaagii ugu sarreeyay ee xisaabta laga soo bilaabo fasalkii kowaad ilaa fasalkii Afraad?

(isbabrabar dhig dhamaan dhibcahaaga xisaabta oo qaado ka ugu badan) iyo dhibcahaagii ugu hooseeyay?

Marka aynu leenahay Axmed wuu ka yaryahay Cabdi waxaynu u jeednaa oo kale Cabdina wuu ka wayn yahay Axmed, waxaynu u habaynayaa inaga oo u eegayna da'dooda, oo da'doodana waxaa lagu muujinayaa tiro ahaan.



Xisaabta, calaamado ayaa loo adeegsadaa si loo muujiyo xaddiga tirada la barbardhigayo ta kale, calaamadahaasi waa $<$ (ka yar), $>$ (ka weyn) iyo $=$ (waxay le'eg tahay).

Mar kastoo tirada gododka ee tiro uu sii bataba, isbarbardhigga godadku way sii yara adkaanaysaa, haddii labada tiro ay leeyihiin godad kala duwan markaa midka godka badan ayaa ka weyn ka kale, tusaale ahaan 100,000, waxay ka weyn tahay 99,999, sababtoo ah boqolka kun wuxuu leeyahay lix god, taasi oo ka wayn tirada leh 99999 oo ah shan god. 1,000,000, wuxuu ka weyn yahay 999.999 sababtoo ah toddoba waxay ka weyn tahay lix.

Haddii labada tiro ay leeyihiin godad isku mid ah, isbarbardhig godadka ahmiyada wayn leh oo qaada godka ugu weyn in uu noqdo mid ka weyn ka yar. Haddii godka ahmiyada wayn lihi ay isku mid noqdaan isbarbardhigga labada god ee kale ee ku

xiga oo go'aami sida ay kala yihiin, ku celceli ilaa hanaanka aad ka helayso godadka kala duwan ee qiimo rugeedyo isku mid ah.

Tusaale 2:

- 1 Masaafada u dhexeysa Adis-Ababa iyo Qaahira waa 2476km, masaafada u dhexeysa Adis-Ababa ilaa Kebtawn 5230km, caasimada ugu dhaw Addis-Ababa waa tee?

Furfuris: Isbarbardhig labada masafo ama labada fogaaneed 2476km iyo 5230km, labaduba waxay leeyihiin afar god, tirada ugu ahmiyada weyni 2476, waa 2, kaasi oo shan ka yar tirada ugu ahmiyada wayn ee 5230, waa 5. Sidaasi daraadeed 2476km ayaa waxay ka yar tahay 5230km, markaa Qaahira way uga dhawdahay Kebtawn Adis-Ababa.

- 2 Dhererada shanta wabi ee ugu dhaadheer ayaa hoos lagugu siiyay.

Niil	6650km	
Zembazi	1673km	
Nayjer	2611km	
Orange	1300km	
Kongo	2922km	

- b wabigeebaa ugu dheer dhamaantood?
- t wabigeebaa ugu gaaban dhamaantood?
- j wabigeebaa ah ka labaad ee ugu dheer?

Furfuris: Isbarbardhig 6650, 1673, 2611, 1300 iyo 2922, dhamaantood waxay leeyihiin afar god.

Isbarbardhig godadka ugu ahmiyada badan dhamaantood, waxaynu helaynaa 6650 ka ugu dheer. Isbarbardhigida godka kale ee mudnaanta leh ee laba tiroba ah waa (2611 iyo 2922) waxaynu arkaynaa in 2922 uu yahay ka labaad ee ugu wayn. Markaa labada kale ee hadhayna waxaynu u arki karnaa 1673 in uu yahay ka afraad ee ugu wayn, 1300 uu yahay ka ugu yar.

Natiijada: 6650km > 2922km > 2611km > 1673 > 1300km.

Sidaasi daraadeed waxaynu ku soo gaba-gabaynaynaa.

- b wabiga ugu dheeri waa nayl,

- t** wabiga ugu gaabani waa Orangi.
- j** wabiga ugu dheer ee labaadna waa Kongo.

Tusaale 3: Aynu eegno sidaynu isku barbardhigno tirooyinka godadka tirooyinkoodu ay isku midka yihiin, inaga oo isticmaalayna qalab loo yaqaano makiinadda isbarbardhiga (shaxda 3aad) isbarbardhig tirooyinkan 12,320 iyo 12,740, taabo tirooyinka ka bilaabma godka ugu ahmiyada wayn ee ku jira laydiyada ee jiif u taxan ugu horeeya iyo ka ugu dambeeya sida lagu muujiyay falaadha ilaa iyo inta laga gaadhayo godadkoo dhan, markaa waxaad heli doontaa tirooyinka leh qiimo rugeedyo ku jira.

Joog u tax isku mid ah:

12,320 →	→ 1	2	3	2	0		12740
	=	=	<	Jooji		→	Waa
12,740 →	→ 1	2	7	4	0		ta ugu weyn

Shaxda 3aad.

Dabadeedna isbarbardhig godadka isku aadan adigoo adeegsanaaya = haddii ay isle'eg yihiin ama “<” ama “>”. Haddii aanay isleekayn jooji mar alla markaad hesho mid ka mid ah calaamada dheeliga.

LAYLIS 1.3

1 Sheeg waxa ka socda makiinadda isbarbar dhiga, (eeg shaxda 3aad).

Shaxda 1.3

698,427 →	→ 6	9	8	4	2	7	698641
	=	=	=	=	<	Jooji	Waa
698,461 →	→ 6	9	8	4	6	1	ta ugu weyn

2 Adeegso makiinadda isbarbardhiga si aad u hesho tirada ugu weyn tirooyinkan lamaanaha ah ee soo socda:

b 21,383 21,834 **t** 9,370,005 9,370,025

j 5,934,177 5,934,178

3 Kuwee ugu yar lammaanyaasha tirooyinka ee soo socda?

b 98,909, 98,099

t 2,436,022,765, 2,436,022, 068

j 5,934,177, 5,934, 178

SHAQO KOOXEEDKA 1.1



- 1 Waa imisa tirada dadka ku nool itoobiya? Waa imisa tirada dadka ku nool Soomaaliya? Wadankeebaa dad badan?
- 2 Waa imisa jir Lucy? Waa imisa jir Ardi? Waydii macalinkaaga cilmiga bulshada cida ay yihiin Lucy iyo Ardi? Labadaa midkeebaa wayn? Waa imisa dhererka awash? Waa kee wabiga ugu dheer gobolkiina?

God horeedyada iyo god dambeedyada tirooyinka idil:-

Hawlgalka 1.4



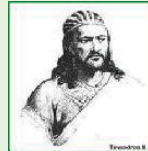
- 1 Naqil oo buuxi shaxdan hoose

$$99,999+1 = \text{-----} \quad 999,999+1 = \text{----} \quad 9,999,999+1 = \text{---} \quad 99,999,999+1 = \text{---}$$

- 2 Naqtiin oo buuxi shaqada hoose.

$$100,000+1 = \text{---} \quad 1,000,000+1 = \text{--} \quad 10,000,000+1 = \text{--} \quad 100,000,000+1 = \text{--}$$

Waligaa ma ka maqashay waalidkaaga oo leh boqortooyadii teedharos waxay ka horaysay boqortooyadii Yuhanis iyo boqortooyadii Mililik, Yuhanis iyo boqortooyadii milinik waxay ka dambaysay boqortooyadii yuhanis, taasi macnaheedi waxa weeyi Tedharos wuxuu ahaa boqorkii ugu horeeyay waxaana ku xigay Yuhanis, waxaana ku sii xigay Milinik, waxaynu rabnaa in aynu qaybtan ku barano wax yaabo ku saabsan god dambeedyada iyo god horaadyada tirooyinka, waxaynu u baahanahay labada tibxood ee ah god horaadka iyo god dambeedyada tirooyinka idil, tirada idil taas oo ka yar, mid kale oo tirada idil ah, hal kaliya waa god horaadkeeda, sidoo kalana tirada idil ee ka wayn mida kale waa tiro idil, hal kaliya waa god dambeedkeeda.



Haddii aad hal ku darto tiro idil, markaa waxaad heli god dambeedkiisa, taasi waa tiro idil oo kasta oo ah wuxuu lee yahay god dambeed, kaasi oo la mid ah $n + 1$, haddii aad hal ka jarto tiro kasta oo idil oo aan Eber ahayn markaa waxaad heli god horaadkeeda, taasi oo ah tiro kasta oo tiro idil ah “ n ” marka laga reebo Eber wuxuu yeelanayaa god horaad, taasi oo la mid ah $n - 1$.

Tusaale 4:

- b** $8 = 7+1$ sidaasi darteed 8 waa god dambeedka 7.
 $7 = 8-1$ sidaasi darteed 7 waa god horaadka 8.
- t** $999 + 1 = 1,000,000$ sidaasi darteed 1,000,000 waa god dambeedka.
- j** 999,999 waa god horaadka 1,000,000, sababtoo ah
 $999,999 = 1,000,000 - 1$.

Tusaale 5: Ka soo qaad maanta waxaad haysataa 1 birr, haddii aad ku iibsato nacnac markaa wax lacag ah kuma haysatid jeebkaaga (0 birr).markaa ma iibsan kartid hal nacnac ah wax ka badan tusaale ahaan waxaa uu ina tusayaa in aanu eberku lahayn god horaad.

LAYLIS 1.4

- 1 Waa maxay god dambeedka iyo god horaadka 999,999,999,?
- 2 Miyuu jiraa tiro ugu dheer ama ugu wayn oo tirooyinka idil ah?
- 3 N-1 waa god horaadka “N” oo waa god dambeedka N-1, oo “N” ay tahay tiro kasta oo tiro idil ah oo aan Eber ahayn, shaxda afraad ee hoose, naqil shaxda oo qor god horaadka iyo god dambeedka iyo tirada lagu siiyay, iyada oo ay ku xidhan tahay meesha bannaan ee ka saraysa ama ka hoosaysa.

Shaxda 4

		i	ii	iii	iv	V
n-1	3,799,999	3,750,599			898,999,999	
n	3,800,000		9,000,000	10,990,000		100,000,000

- 4 Waa maxay god dambeedka ugu dheer ee tiro toban god ah?
- 5 Waa maxay god horaadka ugu yar ee tiro toban god ah?

1.1.3 QIIMA RUGEEDKA IYO HABAYNTA TIROOYINKA IDIL

SHAQO KOOXEEDKA 1.2

Aaynu ciyaarno si aanu u raadino tirada ugu wayn ee tirooyinka tirsiiimo.



- 1 Diyaari kaadhadh yar-yar kuna qor tirooyinka 1 ilaa 7.
- 2 Dooroo todoba saaxiibadaa ah inay tirooyinka qaataan oo ay saf u istaagaan.
- 3 Akhri oo qor tirada la soo bandhigo.
- 4 Sidan ugu cel-celi iyagoo ardayda saf tirada ay isku badalayaan kaadhasha.
- 5 Isku habee tirooyinka ta ugu yar ilaa ta ugu wayn oo qor tirada ugu wayn, ciyaartani ka bacdi waxaa laga yaabaa inaad indha-indhaysay qodobadan soo socda.
 - b sida qiima rugeedka godkastaaba uu is badalo waxaad heshaa tiro tii ka badalan ama ka duwan.
 - t tirada ugu wayn ee la helay intii la iskubadbadalayay waxay ahayd 7 markay taagnayd godka ahmiyada la siinayo ee ugu horaya.

j tirada ugu wayn ee la samayn karo adeegsiga tirooyinka 1 iyo 7 waa 7,6,5,4,3,2,1 tirada ugu yarina waa 1,2,3,4,5,6,7, si la isku bar-bardhigo laba tiro oo tirsiiimo waxaad adeegsan kartaa farsamada isbar-bar dhiga. Tirooyinka waa-wayn sidaas oo kale ayaad u samaysaa tirada tirooyinka ugu yarina sidaas oo kale u same tirooyinka ugu yar-yar.

Tusaale 6: Finas (Venus) wuxuu cadceeda (qoraxda) u jiraa 108,000,000km, dhulkuna wuxuu qoraxda u jiraa 148,000,000km, meereheebaa qoraxda u dhaw, Faynos mise dhulka?

108,000,000→	→1	0	8	0	0	0	0	0	0	148,000,000 ayaa ugu wayn
	=	<	Jooji							
148,000,000→	→1	4	8	0	0	0	0	0	0	

Shaxanka 5

Gabo-gabaynta: 108,000,000, sidaasi darteed Finas ayaa Qoraxda uga dhaw Dhulka. Ma ogaatay inaynu u adeegsan karno tirada ugu yar ee laydiyadan ee ibarbardhigida farsamada si la isku barbardhigo tirada ugu wayn ee Eberada, ugu dambaynta sida tusaalaha sare oo kale.

LAYLIS 1.5

1 Akhri mid kasta oo ka mid ah tirooyinka soo socda, (adeegso shaxda qiimo rugeedka hadii aad doonayso).

b 1,000,000, 010 **t** 43,000,444,344 **j** 46,790,281

x 7,000,000,345 **kh** 987,000,000,000 **d** 282,000,004,010

2 Midkeebaa ugu dad badan Afarta wadan ee Afrikaanka ah ee lagugu siiyay shaxda hoose?

b keebaa ugu dad yar?

Shaxda 6

Wadanka	Tirada dadka
Itoobiya	80,713,438
Somaliya	8,953,890
Sudan	41,347,723
Kenya	38,534,087

- 3** Isbarbardhig 98,987,000,000 iyo 100,000,101,101 keebaa wayn?
- 4** Isbarbardhig lamaane kasta oo tirooyinka soosocda oo u habee si kordhaysa.
- b** 17,789,675,456 iyo 8,787,675,456
- t** 1,000,000,009 iyo 1,000,000,010
- j** 987,000,000,000 iyo 982,000,000,000.
- 5** Sheeg qiimo rugeedka 8 ee mid kasta oo tirooyinka soo socda.
- b** 428,000,000 **t** 1,976,789,749.
- j** 11,236,708,055 **x** 6,564,845,273.

Habka Kala Bixinta Tirooyinka Idil:

Hawlgalka 1.5



100 birr = 100 hal hal birr oo nood-nood ah

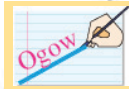
= 10 tobnaad birr oo nood-nood ah

= 1 boqol birr oo nood ah



Ka fikir!

- 1** Waligaa ma ka fikirtay lahaanshaha hal nood oo lacag ah oo u taagan xaddi lacag ah oo badan? Imisa nood oo hal birr ah, toban birr, 100 birr ah ayaa loo baahan yahay inay u taagnaato xaddiyadan lacageed ee soo socda?
- b** 457 birr **t** 366 birr **j** 987 birr **x** 5342 birr.
- 2** Sidoo kale haddii ay jiraan 1000, 10,000 iyo 100,000 birr oo nood ah, mid kastaba inteebaa ku fiilan kara inay u taagnaadaan.
- b** 5400 birr **t** 68,543 birr **j** 912,345 birr.



Ku tibaaxida sida wadarta taramaha ee godadka ee lagudboon rugeedyada waxaa loo yaqaanaa ku tibaaxida tirada habka fidinta.

Tusaale 7: ku qor habka fidinta (kala bixinta) 9836.

Furfuris: $9836 = 9 \times 1000 + 8 \times 100 + 3 \times 10 + 6 \times 1$.

Tusaale 8: Dr.Aamina waxay kala soo baxday kaydkeedii 1,200,000 oo birr. Waxay doonaysaa inay gaadhi ku iibsato 400,000 oo birr iyo Guri ah 600,000 oo birr. Haddii kaliya ay hayso 100 nood oo birr ah? Imisa 10 birr oo nood ah ayay tahay inay bixiso haddii aanay hayn wax nood ah oo kale?

Furfuris: Waxaa ku jira 4,000 oo hal boqol oo birr oo nood ah 400,000, sidoo kale 6000 hal boqol oo birr oo nood ah ayaa kujira 600,000. Sidaasi darteed hadal iyo dhamaantii waxaa ku jira $400 + 6000 = 10,000$ oo boqlaad, 1,000,000 birr. Sidaasi darteed Aamini waa inay bixisaa 100,000 tobnaad oo nood ah labada shayba.

LAYLIS 1.6

- 1 Fidi ama kala bixi mid kastoo tirooyinka soo socda ah.
b 830,876 **t** 45,108,614 **j** 9,629,041,538.
- 2 Haddii lagu siiyay toban 100 oo noodh ah, sideed 10 oo noodh ah iyo hal 9 birr oo nood ah, imisa lacag ah ayaad haysataa gabi ahaan?
- 3 U tibaax mid kastoo ka mid ah tirooyinkan soo socda habka caadiga ah.
b $6 \times 1,000,000 + 8 \times 10,000,000 + 4 \times 1000 + 2 \times 1$.
t $7 \times 100,000,000 + 3 \times 10,000,000 + 9 \times 100,000 + 4 \times 1000 + 3 \times 100 + 2 \times 1$.
- 4 Buuxi tirooyinka maqan: $8,430 = 8 \times 1000 + \underline{\hspace{1cm}} \times 100 + 3 \times \underline{\hspace{1cm}}$.
- 5 Haddii uu Fu'aad haysto 5 boqol oo nood birr, lix tobaan nood birr ah iyo hal sagaal nood birr ah. Imisa birr ayuu fu'aad jeebka ku haystaa?

Hawlgalka 1.6



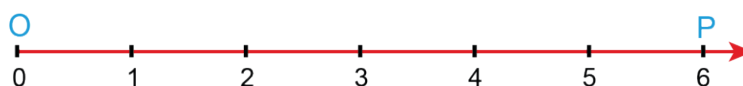
Ka fikir:

Qaybihii hore waxaad ku soo baratay in aanay jirin tiro ugu wayn tirooyinka idil. Waligaa foomustarkiinu ma idiin sheegay inaad saf u joogsataan, sida in mid kastaaba uu is dhextaago mid dheer iyo ku gaaban dhexdooda.



- i** Waa imisa tirada fallaadhan hoose?
- ii** Iskuday inaad mid sawirto oo aad ku muujiso 100 ilaa iyo 10,000.

U firso falaadha tirada OP. fallaadha tirada waxay leedahay hal bar bilaw oo ah **0**, laakiin malaha baar dhamaad. **P** waa bar uun midig ka xigta **O**.

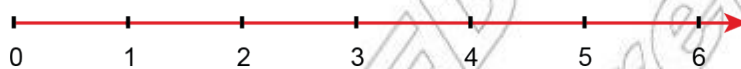


Haynu dhigno qiimaha eber (0) barta 0 oo dooro qaar ka mid ah cabirka halbeegayada (cm, mm, inch) masaafada (fogaanta) fallaadha ee ka timaada barta 0. Haddii aynu siino qiimaha “N” bar kasta oo ku taal falaadha oo ka durugsan barta 0, tiro kasta oo tiro idil ahi waxay ku beegnaan doontaa qaar ka mid ah baraha fallaadha. Leebka fallaadhu wuxuu tilmaamayaa tirooyinka waawayn had iyo jeer la dhigo dhinaca midig ka xigta kuwa yar-yar, oo tirooyinka idil waxay ka bilaabmaan eber “0” mana jirto bar ay ku dhamaadaan.



Fallaadha tirada dusheeda tiro kasta oo idil had iyo jeer way ka yar tahay tiro kasta oo ka xigta midig teeda. Tiro kasta oo aan eber ahayn had iyo jeer way ka wayn tahay tiro kasta oo bidix deeda ah.

Waxaan si fudud u arki karnaa in tirooyinka fallaadha tirada dusheedu ay kordhaan markaad u socoto bidix ilaa midig. Waxaan diirada saaraynaa oo kaliya tirooyinka aynu rabno inaynu muujino (adeegsanayo) fallaadha tirada dusheeda sidaasi darteed, haddii aynu isticmaalno tirooyinka waawayn, waxaynu ku bilaabaynaa tirooyinka ku dhaw tirada aynu ka shaqaynayno. Taasi waa sababta fallaadha tirada ee tusaalaha 4 uu uga bilawdo 6000.



Leebkani wuxuu ina tusayaa in tirooyinka ay kordhayaan markaad u sii dhaqaaqdo midig isla markaana ayna lahayn bar dhamaad.

Tusaale 4: U fiirso fallaadha tirada ee hoose.



Labadee tiro dhexdooda ayaa la dhigi tirada 7864?

Halkeed u malaynaysaa inay ku sax tahay in la dhigo tiradani 11,111?

Furfuris: Fallaadhaha tirada ee 7864 way ka yar tahay 8000 wayna ka wayn tahay 7000 (summad ahaan waxaynu u qori $7000 < 7864 < 8000$).

Sidaasi darteed, waa in la dhigaa dhinaca bidix ee 8000 iyo dhinaca midig ka xigta 7000. Maadaama 11,111 ay ka wayn tahay 11,000 oo ay ka yar tahay 12,000, waxaa ladhigayaa halka u dhaxaysa 11,000 iyo 12,000 ee falaadha tirada dusheeda.

LAYLIS 1.7

- 1 Adegso fallaadhaha tirada ee tusaalaha 4^{aad} si aynu u sheegno tirooyinka idil ee ay u dhexaynayaan mid kasta oo ka mid ah tirooyinka soo socda.

b	6,071	t	13,000	j	9,400
x	11,500	kh	10,001	d	7,800.
- 2 Lugayntu qofka caafimaadkiisa ayay u fiican tahay. Asma waxay socod ka bilawday gurigeeda waxayna u socotay 3km guriga adeerkeed. Ku muuji fallaadha xariiqda dusheeda goobta guriga Asma saaxiibadeed iyo guriga adeerkeed uu ku yaal.

1.1.4. TIROOYINKA DHABANKA AH IYO KUWA KISIGA AH

Hawlgalka 1.7



Ka fikir!

- 1 Waligaa ma ka fikirtay tiro, taasi oo loo kala qaybin karo laba tiro oo idil oo isleeg?
- 2 Goorma ayaad u malaynaysaa in hooyadaa ay dhibaato ku noqondoonto inay si isleeg adiga iyo walaashaa idiinku qaybiso nacnac, marka ay 8 ama 5 nacnac ah hayso?
- 3 Miyay tirooyinkani 6,8,12,200,564, loo qaybin karaa laba tiro oo isleeg oo tiro tiirsimo ah? Balka waran kuwan kale 13, 671,359?



Tirada idil ee laba hadhaa la'aan u qaybsanta waxaa la yidhaahdaa tiro dhaban ah. Tiro idil waa kisi haddii aanay dhaban ahayn.

Tusaale 1: 0,2,4,6,8,10,12,14,18,20,22,24,26,28,30,-----.

Waa tirooyinka dhaban ah, sababtoo ah laba ayay u qaybsami karaan hadhaa la'aan.

Tusaale 2: 1,3,5,7,9,11,13,15,17,19,-----.

Waa tirooyin kisi ah sababtoo ah ma aha dhaban. Hadda waxaan u qaybin karnaa tirooyinka idil laba kooxood: Kisi iyo Dhaban.

SHAQO KOOXEEDKA 1.3



U falanqee koox koox si aad uga jawaabto su'aalahaan soo socda.

- 1 Waa maxay god dambeedka tirada dhabanka ah? Waa maxay god horaadka tirada dhabanka ah ee aan eber ahayn?

- 2 Waa maxay god horaadka iyo god dambeedka tirada kisiga ah?
- 3 Fiiri godka ku aadan halka koowaadka ee tiro kasta oo dhaban ah, taas oo leh hal god wax ka badan ma dhabanbaa mise waa kisi?
- 4 Ma sheegi kartaa in ay tiradu tahay dhabaan ama kisi adigoo laba u qaybinaya?
- 5 Miyay wadarta laba tiro oo dhab ah noqotaa dhaban had iyo jeer? Wadarta laba tiro oo kisi ahi ma kisibaa mise waa dhaban?
- 6 Waa maxay wadarta tiro kisi iyo tiro dhaban?.

Astaamaha Tirooyinka Dhabanka ah iyo kuwa Kisiga ah:-

Shaqa kooxeedii xaga sare waxaad u soo ogaatay kuwan soo socda.

- 1 Wadarta laba tiro oo dhaban ahi waa dhaban.
Taasi oo ah, dhaban + dhaban = dhaban
- 2 Wadarta laba tiro oo kisi ahi waa dhaban.
Taasi oo ah Kisi + Kisi = dhaban.



Tiro idil waa dhaban haddii tirooyinka godka booska koowaad uu yahay dhaban.

Tusaale 3: 67,899,914 waa dhaban, sababtoo ah godka booska kowaadka ah ayaa dhabana.

LAYLIS 1.8

- 1 Tirooyinka soo socda kuweebaa dhaban ah, kuweebaa kisi ah? Waayo?.

b 3,476	t 7,856,491	j 677,779
x 48,624	d 1,234,521,112	r 9,751,110
s 199,786,548.		
- 2 Adigoo tirada u qaybinayn laba, garo ama kala saar tirooyinka dhabanka ah iyo kuwa kisiga ah.

b 348,787	t 48,350,862
j 982,056,340	x 3,689,837,421
- 3 **b** Imisa tiro oo dhaban ah ayaa u dhaxaysa **0** iyo **10** oo tobana uu ku jiro?
t Imisa tiro oo kisi ah ayaa u dhexeeya **0** iyo **100** oo uu ku jiro **100**?
j Waa imisa tirada dhabanka ah ee ugu wayn ee ku jirta shanta god ee ugu horeeya tirooyinka tirsiiimo?

1.2. ADEEGSO TIROOYINKA IDIL

Xisaabtii fasalka 4^{aad} waxaad ku soo baratay inaynu isku dari karno oo aanu isku dhufan karno labo tiro oo idil ilaa iyo 1,000,000 oo aad markaana hesho tiro kale oo idil. Waxogaa cadaymo ah waxaan ku soo bandhigi karnaa adeegsiga kalagoynta iyo Iskugaynta ee tirooyinka idil. Haddaba fasalkani waxaad ku baran doontaa inaad ku samayn karto si la mid ah tirooyinka idil ee kawayn 1,000,000.

1.2.1 ISUGAYNTA IYO KALAGOYNTA TIROOYINKA IDIL

Hawlgalka 1.8



Ka fikir!

- 1 Ka soo qaad in uu nin haystay lacag birr 10,000,000 oo ay u taalo bangiga "A" waxaa kale oo uu haystaa birr 15,000,000 oo u taal bangiga "B". waa imisa wadarta lacageed ee u taala labada Bangi?
- 2 Raadi wadarta mid kastoo ka mid ah kuwan soo socda.
 - b 145,348,102 iyo 226
 - t 658,123 iyo 2,904,000.000
- 3 ka soo qaad tukaan ayaa ku yaal halka idiin dhaxaysa adiga iyo saaxiibkaa gurigiisa, saaxiibkaa gurigiisu wuxuu u jiraa gurugaaga 3000m oo 1751m wuxuu u jiraa tukaanka. Inteebuu tukaanku guriga u jiraa?
- 4 Kalagoo 123,567 iyo 1,000,000 Waxa kuu soo baxa waxaa la yidhaahdaa farqiga labada tiro. Maxaa dhacaya haddii aad isku darto farqiga iyo laba tiro ta yar?

B Isu gaynta Tirooyinka Idil:-

Cashirada xisaabta ee Fasalka 4^{aad}, waxaad ku soo aragtay in iskudarida macnaheedu tahay badinta xaddiyada. Iskugayntu waa hanaan xisaabeed oo shayyada la iskugu keeno.

Tusaale 1: Shaxdan soo socotaa waxay ku siinaysaa tirada dadka ku nool afar wadan oo Afrika ah sida hoos ku xusan. Imisa dad ah baa wada jir ahaan ugu nool, Itoobiya, Somaaliya, Kenya iyo Sudan?.

Itoobiya	Sudan	Smaaliya	Kenya
80,713,434	41,347,723	8,953,890	38,534,087

Furfuris: wadarta dadyawga ku nool afarta wadan waxaa lagu helayaa iskudarka dadka ku nool wadankasta oo afartan wadan ah.

$$80,713,434 + 41,347,723 + 8,953,890 + 38,534,087 = 169,549,134.$$

Sidaasi darteed wadar ahaan tirada dadka ku nooli waa 169,549,134.

Halkan waxa ah qaar ka mid ah astaamaha Isugaynta ee

Tirooyinka Idil:-

- 1 **Astaamaha oodnaanshaha ee iskugaynta;** $a+b$ waa tiro tirsiiimo had iyo jeer, a iyo b ha noqdaan laba tiro oo tirsiiimo oo kasta.
- 2 **Astaanta kala hormarinta ee iskugaynta;**
 $a + b = b + a$, oo a iyo b ay yihiin tiro kasta oo idil.
 $8 + 5 = 5 + 8 = 13$, had iyo jeer waa Run.
- 3 **Astaanta hormo galinta iskugaynta ee tirooyinka idil:**
 $a + (b + c) = (a + b) + c$, oo a, b iyo c ay yihiin tiro kasta oo idil.
 $2, 3$ iyo 9 waa tirooyinka idil.
- 4 **Astaanta asal madoorshaha ee eber:** $a + 0 = 0 + a$, oo a tahay tiro kasta oo idil. Tusaale $b + 0 = 0 + b = b$

LAYLIS 1.9

- 1 Ka soo qaad maamulka dugsii ayaa waxay rabeen inay dhisaan fasalo cusub, kharashku waa 6,463,010 birr oo sibidhka, 330,115,009 birr waa biraha, 70,012,109 birr waa shaqaalaha iyo 350,000 birr oo ah kharashyo kale. waa imisa wadarta kharashka ee loo baahan yahay in lagu dhiso fasalada cusub?
- 2 Qiimee mid kastoo ka mid ah wadarahan.
b $457672 + 98023995 + 100076$ **t** $6204 + 596 + 300634 + 274561$
j $3358 + 109 + 13412 + 18263331$.
- 3 Madbacad ayaa daabacday 4,532,000 buug isniintii, 686,902 buug salaasadii iyo 282,462 buug Arbacadii, imisa buug ayaa la daabacay saddexda maalmood gudeheed?
- 4 Oday iyo islaantiisa ayaa waxay ka shaqeeyeen warshado kala duwan. Dakhliga odaygu waa 3250 birr, dakhliga islaantiisuna waa 3500 birr. Waa imisa wadarta dakhliga labadoodu?

T Kala Goynta tirooyinka Idil:-

Kalagoyntu waa bixinta, kharash gaynta, luminta ama ka qaadida.

Ka fikir intee lacag ah ayaa hooyadaa ama aabahaa ay ka jaraan miishaarkooda ama xoogsigooda, marka ay bixinayaan lacagta iskuulka, cuntada, dharka, kabaha iyo waxyaabaha kaleba.

Marka uu macalinkaagu ku siiyo “X” warqadaada imtixaanka dusheeda ee ay ahayd in lagu saxo 100, marka macalinkaagu wuxuu ka jaray hal dhibic ah, dhibcahaagii boqolka ahaa. Sidaas darteed, kalagoyntu waa lumid! Hooyadaa waxay ka soo jartaa tiro roodhi ah oo ay haysay marka ay qureecda ku siinayso.

Haddii a iyo b ay yihiin, laba tiro oo idil halkaas oo $a > b$, markaa $a - b = c$, halkaas tiro idil waxaana loo yaqaanaa farqiga a iyo b .



Haddii $a - b = c$ markaa $a = b + c$, marka ay yihiin tirooyinka idil a iyo b , halkaas $a > b$.

Tusaale 2: Shaxda soo socota waxay muujinaysaa qotonka (qotonka, dhererka hoose) ee qaar ka mid ah badaha adduunka.

Bad	Pasifik	Atlantik	Hindiya	Aaktik
Hoos u qotonka m	11500	9200	8260	4880

b Imisa ayay ka gun dheer tahay badda baasifiga, badda atlantikada.

Furfuris: $11500 \text{ m} - 9200 \text{ m} = 2300 \text{ m}$.

t Waa maxay farqiga u dhexeeya hoos u qotonka ugu dheer iyo qotonka ugu gaaban ee baddu?

Furfuris:

Ta ugu gun dheeri waa baasifik (11,500m). waxaad u baahan tahay in ka soo saarto shaxda ta ugu gun gaaban adigoo barbardhigaya kuwa hadhay, mida ugu qotan yar baa ugu gun gaaban, ta ugu gun gaabani waa Arctic (4880m).

LAYLIS 1.10

1 Ka shaqee adigoo adeegsanaya kalagoyntu kuwan so socda.

b $9,000,002 - 124645$

t $982,265,789 - 3897845$

j $596,843 - 300,004$

x $9,255,056,231 - 7152598$.

2 Haweenay ayaa boorsadeeda ku haysatay 5000birr. Waxay iibsatay koonbuyutar waxayna bixisay 3920birr. Waa imisa lacagta ugu hadhay boorsada?

3 Iskuul baa waxaa ku jira 12,500 wiil.

b haddii wadarta ardaydu ay tahay 30,000, waa imisa gabdhaha ku jiraa?

t haddii 20,000 ay kawayn yihiin 8 jir imisa ayaa 8 jir ah ama ka yar 8 jir?

1.2.2 ISKUDHUFASHADA TIROOYINKA IDIL

Hawlgalka 1.9



- 1 Haddii qiimaha hal buug uu yahay 4 birr, waa imisa qiimaha hal buug?
- 2 Nin beero leh ayaa wuxuu iibiyaa 30 litir oo caano ah, maalin kasta imisa litir ayuu iibiyaa 10 bilood gudahood (oo bishiiba ay tahay 30 cisho)?
- 3 Hel taranta mid kasta oo ah kuwan soo socda ah:

b 23456×100	t 33298×111	j $1,000,000 \times 500$
-----------------------------	-----------------------------	---------------------------------

Iskudhufashadu had iyo jeer way badataa, laakiin waa hab deg-deg ah.

Tusaale 3: ahaan, $2 \times 3 = 2+2+2 = 3 + 3$.

Guud ahaan:

$$n \times m = n + n + \dots + n \text{ (m jeer) ama } m + n + \dots + m \text{ (n jeer)}$$

Tusaale 4: xisaabi 423×211 .

Furfuris:

$$\begin{array}{r} 423 \\ \times 211 \\ \hline 423 \\ 423 \\ + 846 \\ \hline \underline{89253} \end{array}$$

Jiif u tax hore waa $423 \times 1 = 423$ ka labaad waa la mid ka saddexaad waa $423 \times 2 = 846$, markaana waa iskudarida habka ina siinaya natiijada:-

$$423 \times 211 = 84600 + 4230 + 423 = 89253.$$

Tusaale 5: tobankii sano ee ugu dambeeyay celcelis ahaan 20 dalxiisayaal ah ayaa maalinkasta soo booqanayay Qasriga Atse Fasil ee Gondar ku yaal. Waa imisa dakhliga laga helay dalxiisayaasha hadii dalxiise kasta laga qaado 30 birr?

Furfuris: Tirada dalxiisaha = $20 \text{ dalxiise} \times 365 \text{ maalmood} \times 10 \text{ sano} = 73,000$.

Mid kastana waxa uu bixiyay = 30 birr .

Wadarta dakhliga = $30 \times 73,000 = 2,190,000$ birr.

Tusaale 6: Shirkada diyaaradaha ee Itoobiya waxay samaysaa 100 duulimaad maalinkasta. Duulimaad kastaaba waxa uu qaadaa 200 oo rakaab ah celcelis ahaan kiraduna waa 3000birr. Waa imisa dakhliga maalin kasta?

Furfuris: duulimaadkii kali ahba wuxuu la mid yahay tirada macaamiisha oo lagu dhufay lacagta uu bixiyay macmiil kastaaba waana sidan;

$$200 \times 3000 \text{birr} = 600,000 \text{ birr}$$

Sidaasi darteed marka laga hadlo yoomiyaha duulimaadyada wadarta dakhligu waxay noqon.

$$100 \times 600,000 = 60,000,000\text{birr.}$$

Ama waxaa lagu heli karaa iskudhufashada dhamaan saddexda sidan soo socota.

$$100 \times 200 \times 300 = 2 \times 3 \times 10,000,000 = 60,000,000\text{birr}$$

$$= 60,000,000\text{birr.}$$

Tusaalaha ugu dambeeya waxaad ku aragtay ama ku ogaatay in kuwa leh eberada badan si fudud la isugu daro oo la isku dhufto. Waxaan ku arki doonaa in tani faa'iido ay u yeelan doonto qaar ka mid ah isticmaalka.

LAYLIS 1.11

- 1 Imisa saacadood ayaa ku jira 64 maalmood?
- 2 Imisa daqiiqo ayaa ku jira 12 saacadood?
- 3 Nin beeralay ah ayaa wuxuu leeyahay 43 sac. Sac kastaaba waxa uu u baahan yahay 250 kg oo cunto ah maalintii imisay 43 sac cunayaan.
 - b** 1 maalin **t** 1 todobaad **j** 1 sano.
- 4 Waxaa jira 1000 jawaan oo tufaax ah mid kiiba waxaa kujira 600 tufaax. Haadii qiimaha halkii tufaax ahi uu yahay 5birr, waa imisa kharash ka dhamaan 1000 jawaan ee tufaaxa ahi?

Astaamaha iskudhufashada:

Hawlgalka 1.10



Ka fikir:

- 1 Hel taranta mid kasta oo kuwan soo socda ah.
 - b** 200×57 **t** 57×200 .
- 2 Waa maxay xidhiidhka ka dhexeeya taramaha su'aasha 1, ee b iyo t? maxaad ku gabo-gabaynaysaa tani:
- 3 Soo bandhig mid kastoo ka mid ah shaqooyinkan soo socda.
 - b** $(23 \times 5) \times 4$ **t** $23 \times (5 \times 4)$.
- 4 Waa maxay xidhiidhka ka dhexeeya taramaha su'aasha 3, ee b iyo t? maxaad ku gabo-gabaysay tani?

(Astaanta Kala Hormarinta iskudhufashada ee tirooyinka idil) $a \times b = b \times a$.

Tusaale 6: $2 \times 9 = 18 = 9 \times 2$.

(Astaanta hormogalinta iskudhufashada) $(a \times b) \times c = a \times (b \times c)$, halkaas oo a, b iyo c ay yihiin tirooyin idil.

Tusaale 7: $(4 \times 7) \times 5 = 28 \times 5 = 140$

$$(4 \times 7 \times 5) = 4 \times 35 = 140.$$

Markaynu ka nimaadno taasi waxaynu ku gabo-gabaynaynaa.

$$(4 \times 7) \times 5 = 4 \times (7 \times 5).$$

Astaamaha kala dhiga iskudhufashada ee iskugaynta:

$a \times (b + c) = a \times b + a \times c$, halkaas oo a, b iyo c ay yihiin tirooyin idil.

Tusaale 7: $2 \times (6 + 12) = 2 \times 18 = 36$

$$2 \times 6 + 2 \times 12 = 12 + 24 = 36.$$

Tusaale 8: Ma u fiirsatay in habka aynu u adeegsano iskudhufashada ay samayso adeegsiga astaanta kala dhiga?

126

× 89

1134 126×9

+1008 126×80

11214 $126 \times (80 + 9) = 126 \times 80 + 126 \times 9 = 11214.$

Tirada idil ee lagu dhufto eber had iyo jeer waxay ku siisaa eber.

Astaanta eber: haddii “a” ay tahay tiro idil, markaa $ax0 = 0$.

Tusaale 9: $5 \times 0 = 0 = 0 \times 5$; $0 \times 0 = 0$.

Tirada idil ee 1 lagu dhufatay had iyo jeer waxay ku siisaa tiradii lafteeda:

Astaanta hal: $a \times 1 = 1 \times a = a$, oo a ay tahay tiro kasta oo idil.

Tusaale 10: $2568 \times 1 = 1 \times 2568 = 2568$.

Adeegsiga Qiimayaasha ugu Dhaw:-



Waxaynu isticmaalnaa qiimaha ugu dhaw, marka aynu sheegayno qiyaasta iskudhufashada tirooyinka waawayn.

Kaba soo qaad waxaad doonaysay inaad ogaato inta dad ee daawanayay filim cusub. Markaa, waxaad waydiisay saaxiibka kaas oo filimka arkay. Ka dib markuu waxoogaa fikiray, wuxuu yidhi, hoolka waxa yaalay 1600 oo kursi, oo ugu yaraana 1000 ka mid ah waa la camiray, markaa ilaa 1000 qof bay ahaayeen; markaa

kadibna waxaad waydiisay ninkii tigidhada iibinayay, wuxuuna kuu sheegay inuu iibiyay 1400 tigidh. Saaxiibkaa wuxuu kuu sheegay tiradii ugu dhawayd ee kuraasida la camiray. Sidoo kale waxaynu u adeegsanaa ugu dhawaanta iskudhufashada tirooyinka waawayn.

Markaan ugu dhawaanta adeegsanayno waxa kale oo aynu galnaa khalado. Khaladka ah farqiyu u dhexeeya tirada dhabta ah iyo qiyaasta.

Tirooyinka leh eberada ayaa ugu fudud in loo adeegsado. Taasi waa sababta aynu ugu dhawaanshaha tirooyinka ugu soo saxeexo, ugu dhawaan kowaadka, tobnaadka, boqlaadka iwm.

Summada “~” ayaa loo isticmaalaa ugu dhawaanshaha, tusaale ahaan waxaynu qornaa 42 ~ 40, si aynu u sheegno 42 waxaa lagu qiyaasay 40.

Tusaale 11: shaxda 10, tirooyinkan hoose waxaa lagu qiyaasaa iyadoo lagu soo saxeexa tirada ugu dhaw ee tobnaad, boqlaad iyo kumaad.

Shaxda 10

Ku soo saxeexda tiro idil ugu dhawaan dhufsanayaasha toban (tobnaad, boqlaad IWM.)			
Tobnaadka ugu dhaw, haddii godka ugu horeeyaa uu kawayn yahay 4, markaa 1 ayaa lagu dari godka tobnaad, godkii koowaadna eber ayaa lagu badali.	Haddii godka koowaad uu kayar yahay 5, godkii tobnaad sidiisa ayuu ahaanayaa oo godkii koowaad waxaa lagu badali eber.	$A = 657,7 > 4$	660
			$A = 654, 4 < 5$ 650
Boqlaadka ugu dhaw: haddii godka tobnaadku uu ka wayn yahay 4, 1, ayaa lagu darayaa godka boqlaadka ah, oo dhamaan godadka midig ka xigana waxa lagu badali eber.	Haddii uu godka tobnaad uu ka yaraado 5, markaa godka boqlaad sidiisii ayuu ahaanayaa oo dhamaan tirooyinka midigta kaxigana waxaa lagu badali eber.	$4567, 6 > 5$	4600
		$4539, 3 < 5$	4500
Kumaadka ugu dhaw ~ haddii godka boqlaad uu ka weynaado 4, markaa 1, ayaa lagu darayaa godka kumaadka ah, oo dhammaan godadka midig ka xigaana waxaa lagu badali eber.	Haddii godka boqlaadku uu ka yaraado 5, markaa godka kumaadku sidiisii ayuu ahaanayaa, oo dhamaan godadka midig ka xigaana waxaa lagu badali eber.	$43176, 1 < 5$	43000
		$43576, 5 > 4$	44000

Tusaale: $6127 \times 2563 \sim 6000 \times 3000 = 18,000,000$.

labadaba waxaa lagu soo saxeexay kumaadka ugu dhaw.

LAYLIS 1.12

- 1** Qiyaas taranta soo socota adigoo qiyaasaya tirooyinka ku dhuftayaasha ugu dhawaan tobnaadka, boqlaadka iyo kumaad oo raadi qaladaadka xaalad kasta.
- b** $39,827$ **t** $5,629,998$ **j** $32,651,777$
 $\times 245$ $\times 3728$ $\times 56984$
- 2** Adeegso astaanta kala dhiga iskudhufashada ee iskugaynta si aad u raadiso tirooyinka maqan ee mid kastoo kuwan soo socda ah.
- b** $8 \times (20 + 4) = (8 \times 20) + (8 \times \underline{\quad})$
t $28(10 + \underline{\quad}) = (28 \times 10) + (\underline{\quad} \times 9)$
j $56 \times \underline{\quad} = (56 \times 30) + (56 \times 4)$
- 3** Adeegso astaanta kala dhiga si ay kuu caawiso raadinta taramaha mid kasta oo kuwan soo socda ah.
- b** $(49 \times 7) + (21 \times 7)$ **t** $(92 \times 27) + (92 \times 23)$.
j $(75 \times 12) + (25 \times 12)$.
- 4** Qiimee:
b 2868×1 **t** 1×54863 **j** 967468×0 **x** 967468×0
- 5** Faadumo waxay leedahay 470 oo saf oo geedo liin ah oo mid kiiba ay ku yaalaan 34 geed. Waxay karajaynaysaa 27 sanbiil oo liin ah geedkiiba. Imisa sanbiil oo liin ah ayay Faadumo ka rajaynaysaa (ka filaysaa) dhamaan geedaha?
- 6** Guri wayn oo filimada lagu daawado ayaa wuxuu leeyahay 17 saf (line) oo kuraasi ah oo saf kastaba ay yaalaan 24 kursi. Dad tiradoodu dhantahay 343 ayaa hoolka soo fadhiistay. Imisa kursi ayaa bannaan?

1.2.3 ISUQAYBINTA TIROOYINKA IDIL**Hawlgalka 1.11****Ka fikir!**

- 1** Haddii aynu ugu qaybino 60,000 buug, 20 labreeri si isle'eg, waa imisa qaybta laybareeri kasataaba? Waa imisa hadday ahaan lahaayeen 300 labreeri?

Waa imisa hadday ahaan lahaayeen 6000 labreeri?

- 2** Ma heli kartaa tusaalayaal kuwaas oo tirada walxaha marka loo qaybiyo tirada dadka si isleeg oo aanay wax hadhaa ah yeelan?
- 3** Isuqaybi 58916 iyo 1300 oo ku qor jawaabtaada laba god oo jajab toban leh ah.

Waxaad horay ugu soo baratay casharadaadii fasaladii hoose sida la isugu qaybiyo tirooyinka idil ilaa iyo hal milyan. Markaynu tiro idil u qaybino tiro kale oo idil oo aan eber ahayn, waxaa lagayaabaa in hadhaagu uu eber noqdo ama uu ka duwanaado.

Haddaba qaybtani, waxaad ku arki doontaa sida loo soo bandhigo ama loo muujiyo iskuqaybinta oo lagu tibaaxo qaybta jajab tobanleh ku dhamaanaya laba god dhibicda dabadeed.

Tusaale: eeg sida isuqaybintan looga shaqeeyay.

$$\begin{array}{r}
 4.24 \\
 325 \overline{)1378} \\
 \underline{-1300} \\
 780 \\
 \underline{-650} \\
 1300 \\
 \underline{-1300} \\
 0000
 \end{array}$$

Ku dar "0" baaqiga 78, 78 uma qaybsami karto 325.

Ku dar "0" baaqiga 13 maadaama 13 aanay u qaybsamin

Tusaale: 13 beeralay ah ayaa dhul wada leh sanadkii hore waxay ku iibiyeen wax soo saarkoodii 1885 birr, raadi mid walba qaybtiisa haddii ay lacagta si isleeg u qaybsanayaan, dhammaan beeralaydaasi?

$$\begin{array}{r}
 145 \\
 13 \overline{)1885} \\
 \underline{-13} \\
 58 \\
 \underline{-52} \\
 65 \\
 \underline{-65} \\
 00
 \end{array}$$

Talaabooyinka:

- b** 18 ayaa loo qaybiyay 13 oo qaybtu waa 1
- t** 1 ayaa lagu dhuftay 13

- j** 13 ayaa laga jaray 18, baaqigu waa 5
x qor 8 halka uu yaal oo sidaa u sii wada hanaanka qaybinta.

LAYLIS 1.13

Ka shaqee

b $32 \overline{)4275584}$ **t** $70 \overline{)21755}$ **j** $89 \overline{)4251289}$

Astaamaha isuqaybinta:-

SHAQO KOOXEEDKA 1.4



- 1** **b** 6 u qaybi 3. **t** hada, 3 u qaybi 6
j jawaabaha b iyo t ma isku mid baa?
x iskuqaybintu miyay ogolaanaysaa astaanta hormogalinta.
- 2** Ka shaqee mid kasta oo kuwan soo socda ah.
b $(12 \div 6) \div 2$ **t** $12 \div (6 \div 2)$
j jawaabta b iyo t ma isku midbaa? Waayo?



Isu qaybintu hormogalinta iyo kala hormarinta midna ma aqbasho.

Tusaale:

- b** $6 \div 2 = 2$ laakiin $3 \div 6$, suurta gal kuma aha adeegsiga tirooyinka idil, sababtoo ah uma qaybin karno saddex, lix oo ma heli karno qayb ah tiro idil.
- t** $(32 \div 16) \div 2 = 2 \div 2 = 1$ iyo $32 \div (16 \div 2) = 32 \div 8 = 4$
markaa $(32 \div 16) \div 2 \neq 32 \div (16 \div 2)$.

Sidaasi darteed iskuqaybintu ma ogolaato hormagalinta iyo sidoo kale astaanta kala horumarinta.

LAYLIS 1.14

- 1** Haddii Marwo Canab ay daqiiqadiiba garaaci karto 72 eray, imisa ayay ku qaadan inay garaacdo warbixin ka kooban 3600 oo eray?
- 2** Markii uu Cabdi joojiyay sigaar cabida, wuxuu bilaabay inuu lacag kaydsado. Haddii uu kaydsaday 4160birr dhammaadkii sanadka, imisa baakidh oo sigaar ah ayuu cabi jiray todobaadkii, haddii qiimaha halkii baakidh uu yahay 40 birr?

- 3** Qolka hurdada Jamiila bedkiisu waa 20mitir oo labajibaaran. Haddii rooga qolkaasi la dhigayo qiimihiisu yahay 1800birr, muxuu ahaa qiimaha halkii mitir labajibaar ee rooga ahi?
- 4** Haddii Muna ay 234 digaagado yar-yar ah oo ay ku iibsatay 8424, dabadeedna ay dib ugu iibsatay 9828birr. Imisay ku soo iibsatay halka xabo ee digaag ah? Imisay ku sii iibisay halkii xabo ee digaag ah.

1.2.4 MAS'ALOOYINKA KA KOOBAN DHAWR XISAABFAL

Hawlgalka 1.12



Ka fikir!

- 1** Waligaa ma aragtay tibaax leh hal xisaabfal wax ka badan
- 2** Iskuday tan $6 + 9 - 5 \times 9 \div 3 + 18 - 2 \times 4 + 10 \div 2 - 2$. Xageed ka bilawday tan? miyaad la kulantay wax dhibaato ah?



Haddii aad dabaakh waydiiso sida loo kariyo cunto gaar ah, wuxuu kuu sheegi doonaa waxyaabaha la isku geegeeyay iyo waliba horsanaanta ama sida ay isugu xigayaan wax yaalaha la igu geynayo si aad u hesho cuntadii loogu talo galay. Waydii hooyadaa siday u diyaarisoo Bariiska.

Waxa sidaas oo kale run ah iskudarida tirooyinka; halkaas oo ay jiraan calaamada kala duduwani. Waa inaad barataa sharciyo kale oo ku saabsan sida la iskugu darayo tirooyin leh calaamado kala duwan, calaamadeebaa marka ugu horaysa laga shaqeeyaa ama calaamadeebaa ugu danbaynta laga shaqeeya.

Masalooyinka inta badan waxay leeyihiin calaamado kala duwan iyo tirooyin. Haddii ay tibaaxdo ka kooban hal calaamo wax kabadan: iskugayn, kalagoynta, iskudhufasho iyo iskuqaybin, markaa waxaynu raaci habka hoos la inagu siiyay si aynu u fududayno tibaaxda.

Marka hore ka shaqee xisaab fallada ku jira qawska haddii wax qaws ahi ku jiro tibaaxda. Mar labaadka, ka shaqee iskuqaybinta iyo iskudhufashada marka saddexaadka, ka shaqee iskugaynta iyo kala goynta.

Tusaale 1: fududee mid kastoo kuwan soo socda ah:

b	$5 + 9 \times 3$	t	$6 + (11 - 3) \div 4$
j	$(3 + 4) \times 2$	x	$20 \div 2 - 2 \times 3 + 7$.

Furfuris:

b marka hore iskudhufashada $9 \times 3 = 27$
marka xiggana iskugaynta $5 + 27 = 32$

Sidaasi darteed $5 + 9 \times 3 = 5 + 27 = 32$.

t marka hore ka shaqee tibaaxda qoyska/bisha ku jirta : $11 - 3 = 8$

marka xigta isku qaybinta: $8 \div 4 = 2$

Sidaasi darteed, $6 + (11 - 3) \div 4 = 8$.

j marka hore qawska: $3 + 4 = 7$, haddana iskudhufashada,

$7 \times 2 = 14$

Sidaasi darteed, $((3 + 4) \times 2 = 14)$

x isku qaybinta marka hore $20 \div 2 = 10$

haddana iskudhufashada: $2 \times 3 = 6$

haddana kalagoynta $10 - 6 = 4$

haddana iskugaynta $4 + 7 = 11$

Sidaasi darteed, $20 \div 2 - 2 \times 3 + 7 = 11$

LAYLIS 1.15

1 Fududee midkastoo kuwan soo socda ah:

b $(20 + 16) \div 12 + 4$

t $21 - 15 \div 5 \times 5$

j $6 + (19 - 9) - 10$

x $39 - 19 = (18 - 9)$

kh $15 \times 4 - 10 \div 2 + 10 - 27 + 9$

d $(88 + 8) \times (88 - 8) + 8 \times 8$.

2 Ku samee bilaha ama qawsaska meesha ku habeen markaana tibaaxdu waxa ay leegtahay jawaabaha lagu siiyay.

b $43 + 7 \times 2$ jawaab = 100

t $4 \times 9 - 2$ jawaab = 28

j $8 + 9 - 2 \times 4$ jawaab = 36

x $15 - 13 - 8 \times 3$ jawaab = 0

kh $8 \times 3 + 2 \times 2$ jawaab = 80.

1.2.5 DHUFSANAYAASHA IYO ISIRADA (QAYBSHA YAALKA) TIROOYINKA IDIL

Hawlgalka 1.13

Ka fikir!



- 1** Waa noocma tirooyinka lagu tibaaxi (qeexi, ama cadayn) karo tibixda $2n$, oo n ay u taagan tahay tiro idil?
- 2** Tibaax 27, 81, 243, 333 iyo 12351 sida $3n$, oo sheeg qiimaha “ n ” ee xaalad kasta.
- 3** Qor midkastoo tirooyinka soo socda ah, 65, 75, 95, 80, 200, 160, 155, sida $5n$, oo “ n ” ay tahay tiro kasta oo idil? Raadi qiimaha “ n ” ee xaalad kasta?



Dhufsanayaasha b oo ah tiro idil oo aan eber ahayn waa tirooyinka qaabkan oo kale ah $b \times n$, halkaas oo $n = 1, 2, 3, \dots$
 Haddii $c = a \times b$, markaa waxaan odhan karnaa “ c ” waa dhufsanaha a iyo b sidoo kale a iyo b waa qaybshayaalka ama isirada “ c ”.

Tusaale.1: Qor lixda dhufsane ee ugu horeeya ee 14.

Furfuris: lixda dhufsane ee ugu horeeya ee 14 waa 14, 28, 42, 56, 70 iyo 84.

Tusaale 2: Qiimaha halkii qalin waa 3birr. Haddii aad doonaysid inaad iibsato 12 qalin, intee lacag ah ayaad u baahan tahay?

Furfuris: Buuxi shaxda hoose ilaa aad helayso qiimaha 12 qalin. Waxaad u baahan tahay xaddi lacag ah oo dhufsane u ah 3, waxayna lamid tahay $3 \times 12 = 36$ birr.

Tirada Qalimada	1	2	3	-----	12
Wadarta kharashka	3	6	9	-----	36

Tirooyinka 3, 6, 9, ..., 36 waxaa layidhaa waa dhufsanayaasha 3, waxaynu u baahanahay dhibcahan ..., si aynu u muujino in habyaalka dhufsanayaashu ay sii socdaan ilaa iyo inta tirada ugu danbaysa la helayo. Sidaasi darteed qiimaha 12 qalin waa 36birr.

Haddii ay “ b ” tahay tiro kasta oo tiro idil ah oo aan eber ahayn, waxaad u fiirsataa hadhaaga marka aynu isku qaybino bn ama nb iyo b , hadhaagu waa 0 , qaybtuna waa “ n ”. taa macnaheedu waxa weeyi marka tiro idil oo “ c ” ah loo qaybiyo tiro idil oo “ b ” ah, haddii uu noqdo eber, markaa “ c ” waa dhufsanaha “ b ”, oo “ b ”, na waa qaybshaha ama isirka c .

Tusaale 3: 7 miyay qaybshe u tahay 175? Maxaa kaloo lagu gabagabayn karaa tan?

Furfuris: Waxaanu isku qaybin 175 iyo 7, waxaynu helnay 25, oo ah qayb; iyo hadhaagii oo eber ah. Sidaasi darteed,

$$\begin{array}{r} 25 \\ 7 \overline{)175} \\ \underline{-14} \\ 35 \\ \underline{-35} \\ 00 \end{array}$$

7 waa qaybshaha 175, sababtoo ah hadhaagu waa eber. Ogow sidoo kalena 25 waa qaybshaha 175, sidaas darteed 175 waa dhufsanaha 7 iyo 25.

Tusaale: 234 ma dhufsanaha 4 baa?

Furfuris: maya, sababtoo ah markay iskuqaybino 234 iyo 4, hadhaagu waa 2, kaasi oo aan eber (0) ahayn.

$$\begin{array}{r} 58 \\ 4 \overline{)234} \\ \underline{-20} \\ 34 \\ \underline{-32} \\ 02 \\ \hline \hline \end{array}$$

LAYLIS 1.16

1 Maxay iskuqaybinta hoose kuu sheegaysaa? tiradee baa dhufsane ah? Keebaa qaybshe (isir) ah?

$$\begin{array}{r} 16 \\ 3 \overline{)48} \\ \underline{-3} \\ 18 \\ \underline{-18} \\ 00 \\ \hline \hline \end{array}$$

2 Tax shanta dhufsane ee ugu horaysa mid kasta oo tirooyinkan ah.

b 7 **t** 8 **j** 12 **x** 35

3 Tax dhufsanayaasha 3 ee u dhexeeya 40 iyo 50.

4 Qor dhufsanaha 6 kaas oo ugu dhaw mid kasta oo kuwan soo socda ah.

b 10 **t** 20 **j** 35 **x** 65

5 6957 ma dhufsanaha 3 baa? Waayo?

6 9 ma qaybshaha 7596 baa? waayo?

7 Tax u qaybshayaalka mid kastoo tirooyinkan ah.

b 40 **t** 81 **j** 256 **x** 147

8 Kee baa tirooyinkan soo socda 4 uu u yahay qaybshe: 12, 17, 20, 29, 36, 456, 50, 52?

9 Anu waxaan ahay tiro dhaban oo, 50 ka yar, laba ka mid ah qaybshayaalkaygu waa 7 iyo 3; anu tiradee baan ahay?

1.2.6 JIBBAARADA TIROOYINKA IDIL

Hawlgalka 1.14



- 1 Ma u qori kartaa $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$, habkeeda gaaban?
- 2 Maxaad qabanaaysaa markaad tiro isku dhufato iyada lafteeda uun marmar badan, sida 10 jeer ama 200 jeer.
- 3 Fududee kuwan soo socda:

b $2^3 \times 2^3$

t $\frac{3^4}{3^2}$

marka tiro idil oo “m” ah la iskudhufto iyada lafteeda “n”jeer, halkaasoo “n” aanay ahayn eber, markaa waxaan nidhaahnaa natiijadaasi waa jibbaarka “m”, waxaana loo qoraa “mⁿ”.

Tibaaxda $m^n = m \times m \times m \times m \dots \times m$ (n-na waa isirada).



Tibaaxda “mⁿ” m, waxaa layidhaa salka nⁿ waxaa la yidhaahdaa jibbaar, mⁿ waxaa la yidhaahdaa tibax algebra.

Tusaale: 128 u qor qaab tibaax algebra oo u salkeedu yahay 2.

Furfuris: $128 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^7$

2^7 waxaa loo akhriyaa $\Rightarrow 2$ ku jibbaaran 7 ama $\Rightarrow 2$ la saaray 7”



Tiro kasta oo idil oo “m” ah oo aan eber ahayn, $M^0 = 1$.

Waan isku dhufan karnaa waanan iskuqaybin karnaa tibaaxaha aljabreed ee salalkoodu ay isku midka yihiin,

Tusaale 2: fududee kuwan soo socda.

b $5^4 \times 5^3$ **t** $\frac{2^5}{2^3}$

Furfuris:

b $5^4 \times 5^3 = (5 \times 5 \times 5 \times 5) \times (5 \times 5 \times 5) = 5 \times 5 \times 5 \times 5 \times 5 \times 5 = 5^7$
 $= 5^{4+3}$

Sidaasi darteed, $5^4 \times 5^3 = 5^{4+3}$.

Guud ahaan waxaynu haynaa $a^n \times a^m = a^{n+m}$. halkaas oo “a” ay tahay tiro idil oo aan eber ahayn oo “m iyo “n” ay yihiin tirooyin idil.

$$\begin{aligned} t \quad \frac{2 \times 2 \times 2 \times 2 \times 2}{2 \times 2 \times 2} &= \frac{2}{2} \times \frac{2}{2} \times \frac{2}{2} \times 2 \times 2 \\ &= 1 \times 1 \times 1 \times 2 \times 2 = 2 \times 2 \\ 2^2 &= 2^{5-3} \end{aligned}$$

$a^n/a^m = a^{n-m}$, m iyo n waa tirooyin idil, $n \geq m$ oo “a” na ay tahay tiro idil oo aan eber ahayn.

LAYLIS 1.17

- 1 Qor taranta soo socota adiga oo isticmaalaya habka jibbaarka.
 - b $5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5 \times 5$
 - t $8 \times 8 \times 8 \times 8 \times 8 \times 8 \times 8$.
- 2 Jibbaar kasta u qor sida taranta isiro isle’eg
 - b 3^4
 - t 10^6
 - j 7^2
- 3 Waa maxay tirada aan ahayn, haddii aan ahay jibbaarka 2, ee u dhaxaysa 50 iyo 70?
- 4 Waa maxay tirada aan ahayn, haddii aan ahay jibbaarka tiro u dhaxaysa 36 iyo 60?
- 5 Fududee kuwan soo socda.

b $3^2 \times 3^5$	t $7^1 \times 7^6$	j $5^3 \times 5^3$
x $\frac{2^8}{2^5}$	kh $\frac{10^7}{10^3}$	d $\frac{3^4}{3^4}$

DH.Y.W IYO I.W.W. ee tirooyinka idil

Dhufsana yaraha ay wadaagaan (DH.Y.W) tirooyinka idil

Hawlgalka 1.15

- 1 Raadi qaar ka mid dhufsanayaasha 2.
 - b Raadi qaar ka mid ah dhufsanayaasha 3.
 - t Tax dhufsanayaasha ay wadaagaan 2 iyo 3.
 - j waa maxay tirada ugu yar ee ku jira dhufsanayaasha ay wadaagaan laba tiro?



Dhufsane yaraha ay wadaagaan (DH.Y.W.) laba tiro ama in ka badan waa tirada ugu yar ee ku jirta dhufsanayaasha ay wadaagaan tirooyinka la siiyay.

Si loo helo DH.Y.W laba tiro oo tirooyinka idil ah, raac talaabooyinka soo socda:

- 1 Tax dhufsanayaasha labada tiro.
- 2 Dooro dhufsanayaasha ay wadaagaan.
- 3 Ka ugu yar dhufsanayaashaasi ay wadaagaan ayaa ah DH.Y.W.

Tusaale: Raadi DH.Y.W, 8 IYO 24.

Fur-furis:

Dhufsanayaasha 8 waa ;8,16,24,32,,40,48,56,64,72-----.

Dhufsanayaasha 24 waa; 24, 48, 72-----.

Dhufsanayaasha ay wadaagaan waa 24,48,72.

Dhufsane u yaraha ay wadaagaan waa 24.

Sidaasi darteed DH.Y.W.8 iyo 24 waa 24.



DH.Y.W. saddex tiro oo tiro idil ah sidaasi ayuunbaa loo xisaabin karaa.

I.W.W. (isir waynaha ay wadaagaan) tirooyinka Idil

Hawlgalka 1.16



- 1 Raadi isirada 12 iyo 18.
- 2 Raadi isirada ay waagaan 12 iyo 18.
- 3 Waa maxay isirka ugu wayn ee ay wadaagaan 12 iyo 18.

Isir waynaha ay wadaagaan (I.W.M) laba tiro ama in ka badan oo tirooyinka idil ah waa tirada ugu wayn ee idil ee ku jirta isirada ay wadaagaan tirooyinka lagu siiyay.

Si loo IWM laba tiro oo idil raac tallaabooyinkan soo socda:

- 1 Raadi dhammaan isirada labada tiro.
- 2 Raadi isirada ay wadaagaan.
- 3 Ka dooro tirada ugu wayn isirada ay wadaagaan kaas oo ah IWM, labada tiro.

Tusaale 4: Raadi isir waynaha ay wadaagaan 18 iyo 24

Isirada 18 waa 1,2,3,6, 9 iyo 18.

Isirada 24 waa 1,2,3,4,6,12 iyo 24.

Isirada ay wadaagaan 18 iyo 24 waa 1,2,3, iyo 6

Isirka ugu wayn ee ay wadaagaan 18 iyo 24 waa 6.

Waxaynu u qornaa IWM (18, 24) = 6.

LAYLIS 1.18

- 1** Raadi DH.Y.W ee kuwan soo socda:
b 12 iyo 15 **t** 6 iyo 9 **j** 8 iyo 12 **x** 8,9 iyo 12,
- 2** Raadi IWW kuwan soo socda:
b 4 iyo 6 **t** 5 iyo 30 **j** 12 iyo 20.

Erayada Furaha ah

- | | |
|--|--|
| ⇒ Tiro idil | ⇒ Ka horeeyaha iyo ka dambeeyaha tiro idil. |
| ⇒ Tirooyinka dhabanka iyo kisiga ah ee tirada idil | ⇒ Qaybshe isir, dhufsane ee tirooyinka idil. |
| ⇒ Jibbaarada tirooyinka idil | ⇒ Salka, tirada jibbaarka ah. |
| ⇒ DH.Y.W, iyo IWM ee tirooyinka idil oo lagu siiyay. | |

Soo koobida cutubka 1

tiro kasta oo tiro idil ah waxay leedahay hal god ama wax ka badan, god kastaana waxaa uu buuxiyaa meel, waynu akhrinaa tirooyinka, inagoo adeeg sanayna meelaha uu god kastaa ka buuxiyo ama uu yaalo qiimaha meesha uu god kastaa buuxiyo ama uu yaalo ee tiro ayaa waxaa loo yaqaanaa qiimo rugeed.

Tusaale:

- b** tirada 51,676 waxaa loo akhriyaa konton iyo kow kun lix boqol todobaatan iyo lix.
- t** 195,675, waxaa loo akhriyaa boqol iyo sagaashan iyo shan kun lix boqol iyo todobaatan iyo shan.

Horsanaanta Tirooyinka idil:

Xisaabta, calaamado ayaa loo isticmaalaa si loo muujiyo xajmiga tirada la barbardhigayo ta kale. Calaamada haasi waxay yihiin < (ka yar), > (ka wayn) iyo = (waxay le'eg tahay).

- 1** Haddii ay labada tiro leeyihiin godad isku mid ah, isbar-bardhig godadka ugu ahmiyada badan ee tirooyinka oo qaado ka ugu godka wayn leh. Haddii godadka ugu ahmiyada badan ee labada god ay isku mid yihiin, isbarbardhig labada god ee kale ee ku xiga oo markaa go'aami adoo eegaya. Ku celceli hanaanka ilaa inta aad helayso laba god oo kala duwan oo isku god rugeed ah.

- 2** Haddii ay labada tiro ay leeyihiin tirooyin godad ah oo kala duwan, markaa midka ugu godka wayn leh ayaa ka wayn ka kale.

Ka horeeyaha iyo ka dambeeyaha Tirooyinka Idil:

Tirada idil ee ka yar ta kale oo tiro idil ah hal kaliya waa ka horeeyaheeda sidoo kale, tirada idil taasi oo ka wayn hal ku kale oo tiro idil ah markaa waa ka dambeeyaheeda.

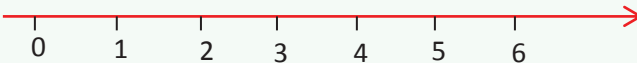
- ✓ Tira kasta oo tiro idil ah “n” waxay leedahay ka dambeeye kaasi oo la mid ah $n+1$.
- ✓ Tiro kasta oo tiro idil ah “n” oo aan ahayn eber waxay leedahay ka horeeye kaasi oo ah $n-1$.
- ✓ Ma jiro tiro ugu wayn oo tiro idil ah, maadaama tiro kasta oo idil “n” ah ay leedahay k oo la mid ah $n+1$.
- ✓ Eberku waa tirada ugu yar tirooyinka idil, sidaasi darteed ma laha ka horeeye kaasi oo tiro idil ah.

Habka fidinta ee tirooyinka Idil :

Tibaaxida wadaraaha taranta godadka tiro ee kubeegan qiimo rugeedyada ayaa waxaa loo yaqaanaa ku tibaaxida tirada habka kala bixinta.

Tusaale: Habka kala bixinta ee 4827 waxaa loo qoraa sidan:

$$4 \times 1000 + 8 \times 100 + 2 \times 10 + 7 \times 1.$$

Falaada tirada: 

Fallaadha tirada dusheeda tirada idil had iyo jeer waxay ka yar tahay tira kasta oo xagga midig ka xigta.

Tiro kasta oo idil oo aan eber ahayn waxay had iyo jeer ka wayn tahay tiro kasta oo bidix ka xigta.

Tirooyinka Dhabanka ah iyo Tirooyinka Kisiga ah:

- ✓ Tirada idil ee u qaybsami karta 2, hadhaa la'aan waxaa la yidhaahdaa tiro dhaban.
- ✓ Tiro idil waa kisi haddii aanay dhaban ahayn.
- ✓ Wadarta laba tiro oo dhaban ahi waa dhaban, taasi oo ah dhaban + dhaban = dhaban.
- ✓ Wadarta laba tiro oo kisi ahi waa dhaban, taasi oo ah kisi + kisi = dhaban.

Isugaynta iyo kalagoynta tirooyinka idil

Iskugayntu waa hanaan xisaabeed la isugu daro walxaha, waxaynu isku darnaa tirooyinka idil ee “m” iyo “n” inagoo tirinayna inta “n” tahay, kadib “m”, ee fallaadha tirada dusheeda. Taasi oo u gudbaysa tirooyinka idil ee $m + 1$, $m + 2$, $m + 3 \dots$

Waxaynu gaadhaynaa oo aynu istagaynaa $m+n$. sidaasi darteed $m+n$ waa wadarta m iyo n .

Astaamaha isugaynta:

- ✓ Wadarta laba tiro oo idil waa tiro idil, astaantan waxaa la yidhaa astaanta oodnaanshaha iskugaynta.
- ✓ Astaanta kala hormarinta ee iskugaynta: a iyo b haddii ay yihiin laba kasta oo tiro idil ah
- ✓ Astaanta hormo galinta ee tirooyinka idil: a , b iyo c oo ah saddax kasta oo tirooyin idil ah

Kala govnta Tiroovinka idil:

- ✓ Kalagoyntu waa bixinta, kharash garaynta ama ka qaadida, waxogaa xaddi ah, haddii a iyo b ay yihiin tirooyin idil, halkaas oo $a > b$ dabadeedna $a - b = c$, markaa “c” waa tiro idil waxaana la yidhaahdaa faraqa “a” iyo “b”, haddii $a - b = c$, markaa $a = b + c$ oo a iyo b ay yihiin tirooyin idil, halkaas oo $a > b$.

Isudhufashada Tiroovinka Idil:

- ✓ Isku dhufashadu had iyo jeer waxbay badisaa, laakiin waa hab deg- deg badan hadii n iyo m ayihiin tirooyin idil markaa

Astaamaha Iskudhufashada:

$$\text{astaanta kala dhiga } a + b = b + a$$

$$a + (b + c) = (a + b) + c$$

- ✓ Astaanta asalmadoorshaha ee eber:

$$A + 0 = 0 + a = a, \text{ oo 'a' ay tahay tiro kasta oo idil}$$

$$m \times n = n + n + \dots + n \text{ (m jeer) ama } m + m + \dots + m \text{ (n jeer).}$$

$$a \times b = b \times a.$$

- ✓ astaanta hormogalinta iskudhufashada.
 $(a \times b) \times c = a \times (b \times c)$, halkaas oo a, b iyo c ay yihiin tiro idil,
- ✓ astaanta kala hormarinta iskudhufashada ee tirooyinka idil.
- ✓ iskudhufashada ee iskugaynta.
 $a \times (b + c) = a \times b + a \times c$, halkaas oo a, b, c ay yihiin tirooyin idil.
- ✓ Haddii “a” tahay tiro idil, markaa $a \times 0 = 0$.
- ✓ $a \times 1 = 1 \times a = a$, oo “a” ay tahay tiro kasta oo idil.
- ✓ Iskuqaybinta tirooyinka idil.
- ✓ Isku qaybintu waa qaybta shay lagu siiyay si isleeg.
- ✓ Iskuqaybintu ma noqoto kala hormarin iyo hormo galin midna.

Fur-furista tibaaxaha leh dhawr calaamadood:

haddii ay tibaaxdu leedahay hal calaamad ah wax kabadan, sida iskugaynta, kala goynta iskudhufashada iyo iskuqaybin markaa waxaynu raacaynaa nidaamkan hoose si aynu u fududayno tibaaxda.

Marka hore ka shaqee kuwa ku jira qawska, haddii uu wax qaws ahi jiro. Marka labaad, ka shaqee isku qaybinta iyo isku dhufashada sida ay u kala horeeyaan. Marka saddexaad, ka shaqee isugeynta iyo kala goynta siday u kala horeeyaan.

Ka soo qaad in “a” ay “b” ay yihiin tiro idil oo aan eber ahayn, markaa haddii $c = a \times b$, markaa waxaaan odhanaynaa ‘c’ waa dhufsanaha a iyo b oo markaana “a” iyo “b” waa u qaybsanayaasha ama isirada “c”.

Dhufsanayaasha aan eber ahayn ee tirooyinka idil ee “b” waa qaabkani bxn , halkaasoo $n = 1, 2, 3, \dots$. Tiro idil oo kasta oo aan eber ahayn oo “b” ahayn oo ‘b’ ah, waxaa laga yaabaa inaad aragto in hadhaagu uu eber yahay markaynu isku qaybino $b \times n$ iyo b, oo qaybtuna ay noqoto n. taa macnaheedu waxa weeyi haddii hadhaagu yahay eber markaas la isku qaybiyo laba tiro oo idil ee ‘c’ iyo ‘b’, markaa ‘c’ waa dhufsane ‘b’ oo ‘b’ duna waa isirka ‘c’.

Jibbaarada Tirooyinka Idil:

Marka tiro idil iyada lafteeda la isku dhufto. n jeer, halkaasi oo ‘n’ ay tahay tiro idil oo aan eber ahayn, markaa waxaaan odhanaynaa natiijadu waa jibbaarka m, waxaana loo qoraa m^n waana jibbaarka m.

Tibaaxda m^n , “m” waxaa layidhaa salka “n” waxaa layidhaahdaa tirada ku jibbaarkan “ m^n ” waa tibaax aljebraad.

Waynu isku dhufan karnaa oo aynu isku qaybin karnaa jibbaarada salalkoodu isku midka yahay.

Isku dhufashada iyo isku qaybinta jibbaarada:

Guud ahaan waxaynu haysanaa $a^n \times a^m = a^{n+m}$, halkaasoo ‘a’ ay tahay tiro idil oo aan ahayn eber m iyo n ay yihiin tirooyin idil.

$$\frac{a^n}{a^m} = a^{n-m}, \text{ m iyo n waa tirooyin idil,}$$

$n > m$ oo ‘a’ ay tahay tiro idil oo aan eber ahayn.

Dhufsane varaha ay wadaagaan (Dh.y,w) ee tirooyinka idil:

Si loo helo dh.y.w, ee laba tiro.

- ✓ Hel dhufsanayaasha tirooyinka lagu siiyay.
- ✓ Ka dooro ka ugu yar dhufsanayaasha ay wadaagaan.

I.W.W. (Isir waynaha ay wadaagaan) tirooyinka idil:

Si loo helo I.W.W, laba tiro oo idil,

- ✓ Raadi dhamaan isirada (u qaybsanayaasha) ee tirada lagu siiyay.
- ✓ Raadi isirada ay wadaagaan.
- ✓ Ka dooro tiro tirada ugu wayn ee ku jirta isirada ay wadaagaan.

Laylis guud

1 Afar arday ayaa ka doortay qiimo rugeedka godad lagu qoray sabuurada.

Xagan hoose: ku muuji tirooyinka uu arday kastaa doortay:

Abaadir: tiradaydu waxay kaga jiraa 11 god rugeed.

Caasha: tirada waxay kaga jirtaa 6 todobada godka kumaad.

Xasan: tiradan waxay leedahay 9 god rugeedka oo 3 boqlaad kun.

Waris: tirada maaha boqlaad iyo tobnaad.



2 U qor tirooyinka soo socda eray ahaan:

- b** 199,983 **t** 39,245 **j** 65
x 2,762 **kh** 89,991,1467

3 U qor kuwan soo socda tiro ahaan.

- b** sodon iyo laba kun iyo afar boqol
t afartan iyo afar
j shan kun iyo laba boqol iyo afartan iyo lix.
x shan milyan lix boqol oo kun laba boqol iyo sagaashan iyo sideed.

4 adeegso calaamadaha dheeliga < ama > inta u dhaxaysa lamaanayaashan soo socda:

- b** 373 __ 3730 **j** 67342159 ____ 673432159
t 887 _____ 8888 **x** 2456701235 _____ 2456701234

5 god-dambeedkeeda, ku buuxi shaxda qiimayaasha maqan. Joog utaxa ugu dambeeya waa wadarta jiif utax kasta.

God-horaad			23,678,913		
Tirada oo caadiya	1,899,900	60,000,000			99,999,896
Tirada oo eray ahaan ah					
God-dambeedka				9,925,301	

6 ka shaqee isku dhufashadan soo socota.

- b** $398,345 \times 576$ **t** 5629×3728 **j** 32651×56984

$$\begin{array}{r}
 15 \quad \mathbf{b} \quad 2845 \\
 6437 \\
 \hline
 4095
 \end{array}
 \quad
 \begin{array}{r}
 \mathbf{t} \quad 1934 \\
 2888 \\
 \hline
 2642
 \end{array}
 \quad
 \begin{array}{r}
 \mathbf{j} \quad 8305 + 97,446 + 28,943,261 =
 \end{array}$$

Isku dar tirada dadka ku nool Gobolada kala duduwan ee Itoobiya ee shaxdan hoos ku qoran:

Diridhaba	Gambela	Harar	Oromiya	Somalii	Adisababa	Tigray	Canfar	Amhara	Bini shan gul	Dhabuub xisboj
342,827	306,916	183,344	27,158,471	4,439,147	2,737,248	4,314,456	17,214,056	17,214,056	670,847	15,042,531

16 Nin beeralay ah ayaa leh 2800 sac, 100 faras, 800 dibi iyo 4000 riyaad. Raadi tirada xoolaha uu haysto ninka beeralayda ahi?

17 Fududee kuwan soo socda:

$$\mathbf{b} \quad 2^3 \times 2^8 \quad \mathbf{t} \quad 7^3 \times 7^2 \quad \mathbf{j} \quad 5^3 \times 5^4$$

18 Raadi dh.y.w tirooyinkan soo socda:

$$\mathbf{b} \quad 3 \text{ iyo } 5 \quad \mathbf{t} \quad 8 \text{ iyo } 12 \quad \mathbf{j} \quad 9 \text{ iyo } 15.$$