Cutubka
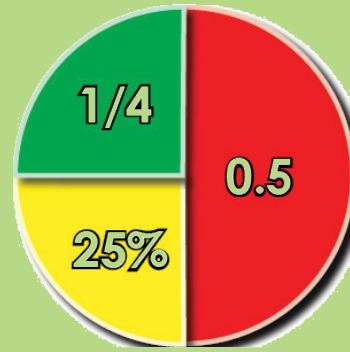
3aad

JAJABYADA, JAJAB TOBANLEYAASHA IYO AFARTA XISAABFAL

Dhamaadka cutubkani waxaad awoodi doontaa inaad

- *Ogaato noocyada jajabka.*

- *Fahanto fikirka boqolayda iyo xeerasha boqolayda oo loo badalo jajab iyo jajab tobanle.*

- *Ogaato habka isbar badhigidda jajabyada.*

- *Adeegsato afarta xisaab fal ee aasaasiga ah ee jajabyada iyo jajab-tobanleyaasha.*

TUSMOOYINKA MUHIIMKA AH

3.1 Noocyaha jajabyada

3.2 Boqolayda oo jajab ah

3.3 Isbar-bardhigida iyo horsanaanta jajabyada.

3.4 Xisaabfalada jajabyada

3.5 Xisaabfalada jajab-tobanleyaasha

Erayada furaha ah

Soo koobida

Laylisyada guud

HORDHAC

Xisaabtii fasalka Afraad waxaad ku soo barateen wax ka mid ah falan qaynta jajabyada, jajabyada isku dhigma iyo jajab toban laha ilaa iyo laba god oo jajab tobanle ah. Cutubkani waxaad ku baran doontaa noocyada jajabyada, boqolayda, isbar-bar dhiga jajabyada, jajabtobanlaha ilaa sadex god oo jajab toban leh ah iyo sida loogu badalo boqolayda jajabyo, iyo jajab tobanle. Waxaa intaasi dheer, waxaad baran doontaan sida la isku bar-bardhigo jajabyada iyo jajab tobanlaha.

3.1   NOOCYADA JAJABYADA

Fasalkii Afraad waxaad ku soo barateen waxyaabo ku saabsan jajabyada. Cutub hoosaadkana waxaad nakhtiimi doontaan jajabyada waxaanad si, faah-faahsan u baranaysiin noocyada jajabyada.

Hawlgalka 3.1

1   Haddii aad si isleeg ula qaybsato hal cananis saaxiibkaa maxay noqon doontaa qaybtaadu?

2   Hadii uu macalin siiyo arday $\frac{1}{2}$ liin ah abaal marin ahaan oo uu macalinku hayo $4\frac{1}{2}$ liin ah imisa arday ayaa abaal marinta heli kara?

3   Waa maxay jajab?

4   Waa maxay sareeyaha iyo hooseeyaha mid kasta oo jajajbyadan ah $\frac{3}{4}$, $\frac{5}{8}$, $\frac{7}{5}$ iyo $\frac{21}{13}$, waa noocma jajabka lamaanaha hore? Iyo lamaanaha labaad?

5   Si isleeg ugu qaybi 4 arday. Waa imisa qaybta arday kastaaba? Adeegso shaxan si aad u muujiso qaybta ardaygiiba helayo?

Hawlgalkaasi sare waxaa laga yaabaa in aad ku garateen waxa jajabku yahay, iyo sida loo sheego sareeyaha iyo hooseeyaha jajab lagu siiyay. Haddaba ciwaan hoosaadkani waxaad ku barandoontaan noocyada jajabka.

1   Jajabka uu sareeyihiisu ka yar yahay hooseeyihiisa waxa layidhaahdaa jajab qumane jajab qumanaha had iyo jeer waa uu ka yahay 1.

2   Jajabka uu sareeyihiisu ka weyn yahay hooseeyihiisa waxa loo yaqaanaa jajab ma qumane.

Tusaale 1: Eeg jajabkan lagu siiyay goobadan hoose si aad uga jawaabto mid kasta oo su'aalahan soo socda ah:

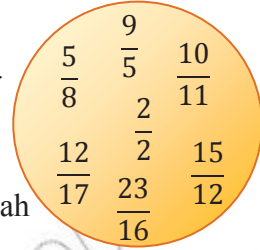 **b**   Tax jajabyada quman.   **t**   Tax jajab ma qumanaha.

Furfuris:

  b $\frac{5}{8}$, $\frac{12}{17}$ iyo $\frac{10}{11}$ waa jajab qumanayaal, sababtoo ah xaalad kasta sareeyuhu wuxuu ka yar yahay hooseeyaha.

Shaxanka 3.1

  t $\frac{9}{5}$, $\frac{2}{2}$, $\frac{23}{16}$ iyo $\frac{15}{12}$, waa jajab ma qumanayaal, sababtoo ah mid kasta oo ka mid ahi sarreeyuhu wuxuu ka weyn yahay ama leeg yahay hooseeyaha.

Tusaale 2: Sheeg sareeyaha iyo hooseeyaha mid kasta jajabyadan soo socda:

  b $\frac{49}{33}$ **t** $\frac{12}{3}$ **j** $\frac{23}{12}$

Furfuris:

	Jajabyo	Sarreeye	Hooseeye
b	$\frac{49}{53}$	49	53
t	$\frac{23}{12}$	23	12
j	$\frac{8}{8}$	8	8

> **Ogow**   Tirada ka kooban tiro idil iyo jajab quman waxaa loo yaqaan tiro dhafan.

Tusaale 3: Kuweebaa ah tirooyinka dhafan kuwan soo socda?

  b $\frac{3}{4}$ **t** $1\frac{2}{3}$ **j** $7\frac{5}{12}$ **x** $\frac{9}{13}$

Furfuris: **t** iyo **j** waa tirooyin dhafan sabatoo ah mid kastaaba waxaa uu ka kooban yahay tirooyin Idil iyo jajab qumane.

> **Ogow**   Jajab ma qumanaha waxaa loo qori karaa tiro dhafan, tirada dhafana waxaa loo qorikaraa jajab ma qumane.

Tusaale ahaan: $\frac{8}{3} = \frac{6+2}{3} = \frac{6}{2} + \frac{2}{3} = 2 + \frac{2}{3} = 2\frac{2}{3}$
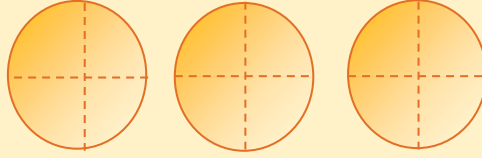
Sidaad darteed $\frac{8}{3} = 2\frac{2}{3}$ halkaas oo $\frac{8}{3}$ ay tahay jajab ma qumane oo $2\frac{2}{3}$ ay tahay tiro dhafan.

SHAQO KOOXEEDKA 3.1

1   Si isle'eg ugu qaybi sadex xabo oo liin ah Afar arday.

Waa inisa qaybta arday kastaaba? Koox-koox u shaqeeya oo naqil ama guuriya shaxanadan soo socda oo hadheeya qaybta halkii arday uu helayo.

Shaxanka 3.2

2   Adigoo adeegsanaya laydiyada shaxankan hoose hadhee qaybta tilmaamaysa jajabka $\frac{3}{8}$, marka kale hal qayba u sii qaybi shan qaybood oo isleeg, qaybtaasi oo u taagan jajabka $\frac{3}{5}$. Mid kastoo kooxdiina ka mid ahi sidaas ha u sameeyo inta kale ee hadhay. Falan-qeeya inta qayb yar oo kastaaba ay muujinayso. Marka la bar-bar dhigo laydiga oo dhan.
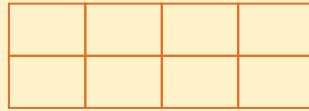
Shaxanka 3.3

Tusaale 4:   U badal jajab ma qumanayaashan tirooyin dhafan.

b $\frac{8}{5}$ **t** $\frac{25}{4}$

Furfuris:

b   Raadi tirada idil ee ugu wayn ee ka yar $\frac{8}{5}$, si aad u hesho tiradaasi raac

hanaankan soo socda: $\frac{8}{5} = \frac{5+3}{5} = \frac{5}{5} + \frac{3}{5} = 1 + \frac{3}{5} = 1\frac{3}{5}$

t   Raadi tirada idil ee ugu wayn ee ka yar $\frac{25}{4}$, si aan u dhamayno.

$\frac{25}{4} = \frac{24+1}{4} = \frac{24}{4} + \frac{1}{4} = 6 + \frac{1}{4} = 6\frac{1}{4}$

Tusaale 5: u badal mid kasta oo ka mid ah tirooyinka dhafan ee soo socda jajab ma qumane.

b $2\frac{1}{4}$ **t** $8\frac{2}{3}$

Furfuris:

b $2\frac{1}{4} = \frac{4 \times 2 + 1}{4} = \frac{8 + 1}{4} = \frac{9}{4}$

t $8\frac{2}{3} = \frac{3 \times 8 + 2}{3} = \frac{24 + 2}{3} = \frac{26}{3}$

> **Ogow** Tusaalaha sare waxaan ka go'aansaynaa hubaashan hoose. Haddii, a, b iyo c yihiin tirooyin tirsiimo ah oo ay b < c

Tusaale 6: U qor $\frac{15}{25}$, habkeeda ugu fudud.

> **Ogow** Jajab wuxuu hanaanka ugu fudud yahay hadii isir waynaha ay wadaagaan sareeyaha iyo hooseeyuhu uu yahay 1. Cutubkii koowaad waxaad ka xusuusan tahay in ka ugu wayn isirada ay wadaagaan laba tiro ama in ka badan waxaa loo yaqaan isirwaynaha ay wadaagaan tirooyinkaasi.

Furfuris: $\frac{15}{25} = \frac{3 \times 5}{5 \times 5} = \frac{3}{5} \times \frac{5}{5} = \frac{3 \times 1}{5} = \frac{3}{5}$

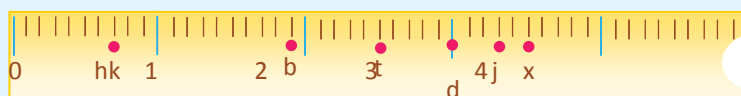Sidaas darteed. Habka ugu fudud ee $\frac{15}{25}$ waa $\frac{3}{5}$.

LAYLIS 3.1

1   U qor saansaanta ugu fudud ee jajab yadan soo socda.

b $\frac{9}{12}$ t $\frac{24}{30}$ j $\frac{75}{100}$ x $\frac{22}{18}$ kh $\frac{45}{25}$

2   Ku aadi xaraf kasta jajabyada soo socda ee shaxanka 3.4 ee hoose?

b $\frac{33}{10}$ t $\frac{23}{5}$ j $\frac{19}{10}$ x $\frac{7}{2}$ kh $\frac{3}{1}$ d $\frac{7}{10}$

Shaxanka 3.4

3   Kuwan soo socda kuweebaa ah jajab qumane?

b $\frac{8}{7}$ t $\frac{11}{12}$ j $\frac{24}{5}$ x $\frac{33}{4}$ kh $\frac{21}{23}$

4   U badal mid kastoo kuwan soo socda ah tirooyin dhafan?

b $\frac{22}{5}$ t $\frac{34}{6}$ j $\frac{11}{4}$ x $\frac{18}{7}$ Kh $\frac{43}{7}$

5   U badal mid kasta oo ka mid ah tirooyinkan dhafan jajab ma qumanayaal?

6 Kuwee baa ah jajab maqumanayaal ku wan soo socda?

b $\dfrac{20}{11}$ **t** $\dfrac{15}{17}$ **j** $\dfrac{52}{35}$ **x** $\dfrac{5}{3}$

7 8kg oo sonkor ah ayaa si isleeg loogu qaybiyay 12 qof. Raadi qaybta uu helay qof kastaa?

8 Naqil ama guuri oo buuxi shaxdan soo socota.

	Jajab	Dhafan, Qumane, Ma-qumane		
b	$2\dfrac{3}{4}$			
t	$\dfrac{7}{3}$			
j	$\dfrac{9}{10}$			
x	$\dfrac{24}{5}$			

3.2   BOQOLAYDA OO JAJAB AH

Ciwaan hoosaadkani waxaad ku baran doontaa waxa boqolaydu ay tahay iyo sida boqolayda loogu tilmaamo jajabyo iyo sida boqolayda loogu badalo jajab tobanle.

Hawlgalka 3.2

1 Eeg shaxanka 3.2 oo ka jawaan su'aalaha soo socda.

b waa maxay qaybta shaxanka ee lagu hadheeyay huruuda?

t qaybtee lagu hadheeyay casaan?

j jajabyadeebaa lagu qoray xuruufta A, B, C, D, E IYO F?

x jajabyadeebaa aan la hadhayn?
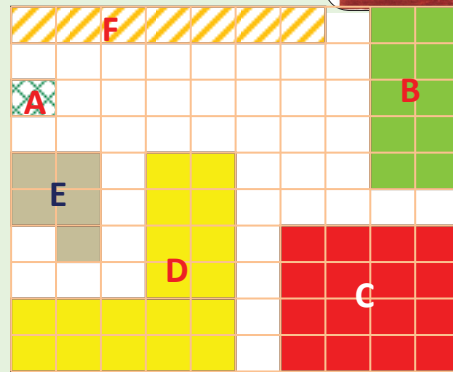
Shaxanka 3.5

2 Qayb kasta oo shaxanka 3.6 ka mid ahi waxay ka kooban tahay 10 buug

b imisa buug ayaa ku jira shaxanka?

t imisa buug ayaa ku jira qaybta hadhaysan?

j maxay jajab ahaan ka yihiin buugta ku jirta qaybta hadhaysan?
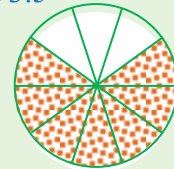
Shaxanka 3.6

1 Boqolaydu waa qayb ka mid ah hal shay oo idil (walax) loo qaybiyay 100 meelood oo isleeg.

2 Jajab uu hooseeyihiisu yahay 100 waxad loo yagaanaa Bogolay.

Tusaale: waxaynu u qornaa

$$18\% = \frac{18}{100} = 0.18$$

Boqolay   Jajab   Jajab tobanle

1 Boqolayda waxay ku koobantahay kuxisaabinta boqolaadka (bogolkiba).

2 Calaamada % macnaheedu waa boqolkiiba, halkaasoo $1\% = \frac{1}{100}$.

3 Boqolaydu waa jajab caadi ah sidoo kale waa jajab tobanle.

Tusaale 1: U qor boqolay ahaan.

b $\frac{24}{100} = \frac{24 \times 1}{100} = 24\%$ **t** $\frac{80}{100} = \frac{80 \times 1}{100} = 80\%$

Tusaale 2: Ku tibaax ama ku qor kuwan soo socda jajab ahaan:

b 25%   **t** 12%.

Furfuris: **b** $\frac{25}{100} = \frac{1 \times 25}{4 \times 25} = \frac{1}{4}$

$\frac{25}{100}$ waxaa loo yareeyay $\frac{1}{4}$, iyada oo sareeyaha iyo hooseeyaha loo qaybiyay 25.

Qaabka jajab ee 25% waa $\frac{1}{4}$

t $12\% = \frac{12}{100} = \frac{3 \times 4}{25 \times 4} = \frac{3}{25}$
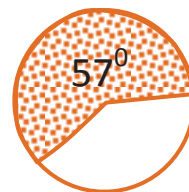
Tusaale 3: u badal 57% jajabtobanle.

Furfuris: $57\% = \frac{57}{100} = 0.57$

Shaxanka 3.7

$\frac{57}{100}$ waxaa loo fikiri karaa sida $\frac{57}{100}$, iyadoo loo rarayo barta jajab tobanle xaga bidix laba god waana sidan 0.57.

Tusaale 4: u badal mid kastoo boqolayda soo socota ah jajab tobanle.

b 92%   **t** 31%   **j** 9%

Furfuris:

b 92% $= \dfrac{92}{100} = 0.92$ **t** 31% $= \dfrac{31}{100} = 0.31$ **j** 9% $= \dfrac{9}{100} = 0.09$

Tusaale 5: Ku tibaax ama u qor mid kastoo jajabyadan soo socda ah boqolay ahaan.

b $\dfrac{1}{5}$ **t** $\dfrac{9}{20}$

Furfuris:

b $\dfrac{1}{5} = \dfrac{1 \times 20}{5 \times 20} = \dfrac{20}{100} = 20\%$

t $\dfrac{9}{20} = \dfrac{9 \times 5}{20 \times 5} = \dfrac{45}{100} = 45\%$

Ogow   Si aad jajab ugu badasho boqolay ku dhufo 100%.

Tusaale 6: waa maxay boqolayda maqan ee shaxanadan hoose ee 3.8?

b   **t**

Shaxanada 3.8

Furfuris: **b** 25% + 30% = 55%, boqolayda lahayaa waa 55%, boqolayda maqana waa 100% - 55% = 45%.

t 17% + 21% + 10% + 30% = 78%.

Wadarta boqolayda lahayaa waa 78% inta maqanina waa 100% - 78% = 22%.

LAYLIS 3.2

1 Ubadal jajabyo midkastoo ka mid ah boqolaydan soo socota.

   b 70%   **t** 60%   **j** 55%   **x** 26%   **kh** 33%

2 U badaljajab tobanle mid kastoo ka mid ah boqolaydan soo socota.

   b 2%   **t** 12%   **j** 175%   **x** 25%   **kh** 89%

3 Adeegsiga xaqiiqda ah p/100 = p%, raadi qiimaha P ee isle'egta.

   b $\dfrac{41}{100} = P\%$ **t** $\dfrac{24}{100} = P\%$ **j** $\dfrac{7}{50} = P\%$ **x** $\dfrac{11}{25} = P\%$

4 Waa maxay boqolayda shaxankan inta

    b   la hadheeyay?   **t**   Aan la hadhayn?

Shaxanada 3.9

5 Muuji in 25%, $\dfrac{1}{4}$, iyo 0.5 ay leeyihiin qiime isku mid ah.

6 Muuse wuxuu jeebka ku haystay 60 Birr, haddii uu shaadh ku soo iibsaday 30 birr. Waa imisa boqolkiiba inta uu isticmaalay lacagtii?

7 Imtixaan tijaabo ah, ayuu arday ka jawaabay 87 su'aalood 100kii su'aalood, ba waa maxay boqolkiiba inta uu ka jawaabay?

8 Goobo ku sawir oo hadhee 25% ka mid ah?

9 Imtixaan tijaabo ah oo higaadin ah, ayay Asma ka saxday 44 Eray. Waa imisa dhibicdeedu boqolkiiba?

10 420 arday ayaa iskuul kujira, 30% waa gabdho, inta hadhayna waa wiilal. Waa imisa wiilashu boqolkiiba?

3.3 ISBARBARDHIGIDA IYO HORSANAANTA JAJABYADA

Fasalkii hoose waxaad soo baratay sida la isku bar-bardhigo iyo sida horsanaan loogu qoro jajabyada iyo jajab tobanle, ilaa laba god. Ciwaan hoosaadkana waxaad ku baran doontaa waxyaabo badan oo ku saabsan isbarbardhiga iyo horsanaan u qorista jajabyada.

Hawlgalka 3.3

1 Midkeebaa wayn $\dfrac{2}{3}$ mise $\dfrac{4}{6}$?

Adeegso labadan shaxan 3.10 si aad uga jawaabto su'aasha.

$\dfrac{2}{3}$

$\dfrac{4}{6}$
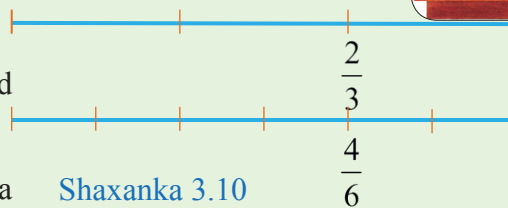
Shaxanka 3.10

2 Ku dhufo sareeyaha iyo hooseeyaha jajabkan $\dfrac{2}{3}$ laba. Waa maxay xidhiidhka u dhexeeya $\dfrac{2}{3}$ iyo jajabka aad heshay?

3   Eeg shaxankan 3.11 si aad uga jawaabto mid kastoo ka mid ah su'aalahan soo socda.

b   yaa ugu gaaban?   **t**   yaa ugu dheer?

Waxaan ahay $1\frac{2}{9}$ mitir

Waxaan ahay $1\frac{2}{5}$ mitir

Waxaan ahay $1\frac{7}{20}$ mitir

Daahir   Cali   Ayaan

Shaxanka 3.11

Hawl-galka 3.1 waxaad ku soo falanqayseen sida la isku bar-bardhigo jajabyada leh hooseeyayaal kala duwan. Waxa intaasi sii dheer oo aad baran doontaa jajabyada isku dhigma iyo sida la isku bar-bardhigo jajabyada.

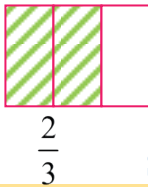> Jajabka iyo Jajabka laga helo iyada oo hooseeyihiisa iyo Saree Yihiisa lagu dhufanaya tiro isku mid ah oo idil oo aan eber ahayn waxa la yidhaahdaa jajabyo isu dhigma

Si aad u hesho jajab u dhigma $\frac{2}{3}$, ku dhufo sareeyaha iyo hooseeyahaba tiro isku mid ah oo aan eber ahayn, sida laguugu muujiyay shaxankani hoose ee 3.12.

$\frac{2}{3}$

Shaxanka 3.12

Taasi oo ah $\frac{2}{3} = \frac{2}{3}$ x $\frac{2}{2} = \frac{4}{6}$,∴ $\frac{2}{3}$ iyo $\frac{4}{6}$ waa jajabyo isku dhigma .

> **1**   Si jajab loogu badalo jajab kale oo u dhigma, ku dhufo sareeyaha iyo hooseeyaha jajabka tiro isku mid ah oo idil oo aan eber ahayn.
>
> **2**   Laba ama wax ka badan oo jajabyada isku dhigma ah waxay leeyihiin qiimo isku mid ah, xataa haddii sareeyayaasha iyo hooseeyayaashu ay kala duwan yihiin.

Tusaale 1:   Raadi jajabyada u dhigma $\frac{7}{10}$, adoo ku dhufanaya hooseeyaha iyo sareeyahaba 2 iyo 3 kolbamid.
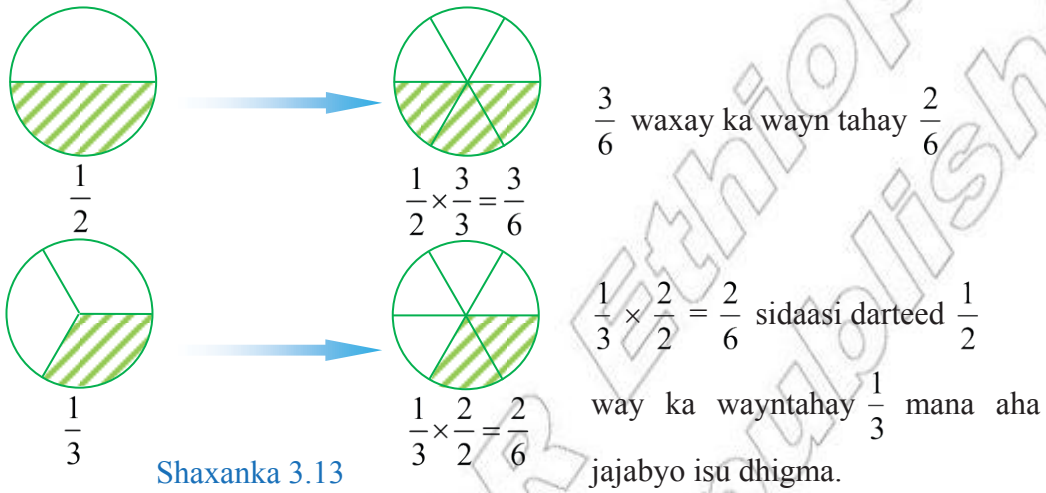
Furfuris:

b $\frac{7}{10} = \frac{7}{10} \times \frac{2}{2} = \frac{14}{20}$ ----- Waxaa lagu dhuftay $\frac{2}{2}$

t $\dfrac{7}{10} = \dfrac{7}{10} \times \dfrac{3}{3} = \dfrac{21}{30}$ ----- waxaa lagu dhuftay $\dfrac{3}{3}$

Furfuristaasi sare waxaad ku arkaysaa in $\dfrac{7}{10}$, $\dfrac{14}{20}$ iyo $\dfrac{21}{30}$ ay yihiin jajabyo isku dhigma.

Si la isku bar-bardhigo $\dfrac{1}{2}$ iyo $\dfrac{1}{3}$ ku dhufo sareeyaha iyo hooseeyaha ee labada jajab 3 iyo 2, siday u kala horeeyaan, ee lagu muujiyay shaxankan hoose 3.13.

$\dfrac{1}{2}$

$\dfrac{1}{2} \times \dfrac{3}{3} = \dfrac{3}{6}$

$\dfrac{1}{3}$

$\dfrac{1}{3} \times \dfrac{2}{2} = \dfrac{2}{6}$

Shaxanka 3.13

$\dfrac{3}{6}$ waxay ka wayn tahay $\dfrac{2}{6}$

$\dfrac{1}{3} \times \dfrac{2}{2} = \dfrac{2}{6}$ sidaasi darteed $\dfrac{1}{2}$ way ka wayntahay $\dfrac{1}{3}$ mana aha jajabyo isu dhigma.

> **Ogow**
> Haddii aad doonaysid inaad is bar-bar dhigto laba ama wax kabadan oo jajabyo ah, markaa mid kastaba u badal jajabyo isku dhigma oo leh hooseeye isku mid ah. Markaa jajabka wayni wuxuu noqon doonaa ka sareeyi hiisu weyn (badan) yahay.

Tusaale 2: Isbarbardhig jajabyadan soo socda, keebaa wayn?

b $\dfrac{3}{4}$ iyo $\dfrac{6}{4}$ t $\dfrac{7}{13}$ iyo $\dfrac{9}{13}$

Furfuris:

b $\dfrac{3}{4}$ iyo $\dfrac{6}{4}$ waxay leeyihiin hooseeye isku mid ah, maadaama 6>3 markaa

$\dfrac{6}{4} > \dfrac{3}{4}$.

t   Sidoo kale $\dfrac{7}{13}$ iyo $\dfrac{9}{13}$ waxay leeyihiin hooseeye isku mid ah markaa

$\dfrac{9}{13} > \dfrac{7}{13}$.

Tusaale 3: Isbar-bardhig jajabyadan soo socda, keebaa yar?

b $\dfrac{9}{10}$ iyo $\dfrac{8}{9}$ **t** $\dfrac{3}{4}$, $\dfrac{13}{15}$ iyo $\dfrac{5}{6}$.

Furfuris:

b $\dfrac{9}{10}$ iyo $\dfrac{8}{9}$, waxay leeyihiin hooseeyayaal kala duwan. Sidaasi darteed waa inaad midkood u badashaa jajab u dhigma oo leh hooseeye la mid ah.

$$\frac{9}{10} = \frac{9 \times 9}{10 \times 9} = \frac{81}{90} \quad \text{iyo} \quad \frac{8}{9} = \frac{8}{9} \times \frac{10}{10} = \frac{80}{90}$$

Maadaama $81 > 80$, $\dfrac{80}{90} < \dfrac{81}{9}$, ta ugu yari waa $\dfrac{8}{9}$.

t   Sidoo kale $\dfrac{3}{4}$, $\dfrac{13}{15}$ iyo $\dfrac{5}{6}$ waxay leeyihiin hooseeyayaal kala duwan, sidaasi darteed waa inaad mid kasta u badashaa jajab u dhigma oo leh hooseeye isku mid ah.

$$\frac{3}{4} = \frac{3 \times 15}{4 \times 15} = \frac{45}{60}$$

$$\frac{13}{15} = \frac{13 \times 4}{15 \times 4} = \frac{52}{60}$$

$$\frac{5}{6} = \frac{5 \times 10}{6 \times 10} = \frac{50}{60}$$

Markaas $45 < 50 < 52$ waxaad kalood haysaa,

$\dfrac{45}{60} < \dfrac{50}{60} < \dfrac{52}{60}$, taa macnaheedu waa

$$\frac{3}{4} < \frac{5}{6} < \frac{13}{15}$$

Jajabka ugu yari waa $\dfrac{3}{4}$.

> **Ogow**   Waxaa kale oo suurto gal ah in la isbar-bardhigo jajabyada iyadoo loo badalayo boqolay.

Tusaale 4: Axmed wuxuu galay saddex imtixaan, haddii natiijada imtixaankiisa lagu muujiyay shaxdan hoose, imtixaankee ayuu natiijo fiicnaa?

Furfuris: Si aad u hesho natiijada ugu fiican, waxaad u badali kartaa jajab kastaba boqolay ahaan si aad isku bar-bardhigto markaa.

$$\frac{6}{10} = \frac{6}{10} \times 100\% = 60\%$$

$$\frac{15}{25} = \frac{15}{25} \times 100\% = 60\%$$

$$\frac{13}{20} = \frac{13}{20} \times 100\% = 65\%$$

Imtixaanka 1^{aad}	Imtixaanka 2^{aad}	Imtixaanka 3^{aad}
$\frac{6}{10}$	$\frac{15}{25}$	$\frac{13}{20}$

Sidaasi darteed, wuxuu ugu natiijo fiicnaa imtixaanka sadexaad waana $\frac{13}{20}$.

Tusaale 5: Isbarbardhig lamaanayaasha jajabyada ah ee soo socda adigoo adeegsanaya calaamadaha "<" ">" ama "="

b $\quad \frac{3}{2} \underline{\quad\quad} \frac{4}{7}$ $\qquad$ **t** $\quad \frac{2}{3} \underline{\quad\quad} \frac{13}{6}$ $\qquad$ **j** $\quad \frac{5}{6} \underline{\quad\quad} \frac{7}{8}$

Furfuris:

b $\quad$ U badal $\frac{3}{2}$ iyo $\frac{4}{7}$ jajabyo leh hooseeye isku mid ah.

$$\frac{3}{2} = \frac{3 \times 7}{2 \times 7} = \frac{21}{14} \text{ iyo } \frac{4}{7} = \frac{4 \times 2}{7 \times 2} = \frac{8}{14}$$

Adiga oo isbarbar dhigaya 21 iyo 8, markaa soo 21>8, $\frac{21}{14} > \frac{8}{14}$. Taasi macnaheedu waa $\frac{3}{2} > \frac{4}{7}$

t $\quad$ U badal $\frac{4}{3}$ iyo $\frac{13}{6}$ jajabyo leh hooseeye isku mid ah, $\frac{2}{3} = \frac{2 \times 3}{3 \times 2} = \frac{4}{6}$.
Markaad isbarbar dhigto $\frac{4}{6}$ iyo $\frac{13}{6}$, 4 < 13, markaa $\frac{4}{6} < \frac{13}{6}$, taasi macnaheedu waa $\frac{2}{3} < \frac{13}{6}$.

j $\quad$ U badal $\frac{5}{6}$ iyo $\frac{7}{8}$, jajabyo leh hooseeye isku mid ah.

$$\frac{5}{6} = \frac{5 \times 4}{6 \times 4} = \frac{20}{24} \text{ iyo } \frac{7}{8} = \frac{7 \times 3}{8 \times 3} = \frac{21}{24}.$$

Markaa 20 < 21, $\frac{20}{24} < \frac{21}{24}$, taasi macnaheedu waa $\frac{5}{6} < \frac{7}{8}$.

Tusaale 6: Isugu aadi (hagaaji) jajabyadan $\dfrac{3}{4}, \dfrac{13}{15}, \dfrac{5}{6}$ iyo $\dfrac{11}{12}$ habka sii yaraanshaha.

Furfuris: U badal jajabyadan jajabyo u dhigma, $\dfrac{3}{4}, \dfrac{13}{15}, \dfrac{5}{6}$ iyo $\dfrac{11}{12}$ oo leh hooseeye isku mid ah, sidan hoos ku qoran:

$$\dfrac{3}{4} = \dfrac{3 \times 15}{4 \times 15} = \dfrac{45}{60}. \qquad\qquad \dfrac{13}{15} = \dfrac{13 \times 4}{4 \times 15} = \dfrac{52}{60}.$$

$$\dfrac{5}{6} = \dfrac{5 \times 10}{6 \times 10} = \dfrac{50}{60}. \qquad\qquad \dfrac{11}{12} = \dfrac{11 \times 5}{12 \times 5} = \dfrac{55}{60}.$$

Is barbar dhigida jajabyadan isku dhigma ee leh hooseeyaha isku midka ah, oo u qor habka sii yaraanshaha, waxaad heli sidan $\dfrac{55}{60}, \dfrac{52}{60}, \dfrac{50}{60}, \dfrac{45}{60}.$

Sidaasi darteed, habka siiyaraanshana ee jajabku waa $\dfrac{11}{12}, \dfrac{13}{15}, \dfrac{5}{6}, \dfrac{3}{4}.$

SHAQO KOOXEEDKA 3.2

Sameeya koox ka kooban 10, arday, waydii xafiiska diwaanka Iskuulkiina su'aalahan soo socda:

b   tirada ardayda fasalka shanaad ee la diwaangaliyay 3dii sano ee ugu dambeeyay.

t   tirada ardayda gabdhaha ah ee fasalka 5^{aad} ee la diwaan galiyay 5tii sano ee ugu dambaysay.

j   tirada ardayda wiilasha ee fasalka 5aad ee la diwaangaliyay 3dii sano ee ugu dambeeyay, wada falanqeeya si aad uga jawaabtaan su'aalahan soo socda:

    i   waa maxay jajabka ardayda gabdhaha ah?

    ii   waa maxay jajabka ardayda wiilasha ah?

LAYLIS 3.3

1   Ku dhufo sareeyaha iyo hooseeyaha mid kasta oo jajabyadan soo socda ah 3, si aad u hesho jajab u dhigma.

    b $\dfrac{5}{3}$ **t** $\dfrac{4}{7}$ **j** $\dfrac{11}{12}$ **x** $\dfrac{14}{15}$ **kh** $\dfrac{8}{3}$

2   Mid keebaa wayn 3/5 iyo 17/20?

3 Isbarbar dhig jajabyadan soo socda, adoo adeegsanaya calaamadahan (sumadahan) "<", ">" ama "="

b $\dfrac{3}{8}$——$\dfrac{1}{2}$ **t** $\dfrac{2}{3}$——$\dfrac{3}{5}$,   **j** $\dfrac{11}{10}$——$\dfrac{13}{10}$

x $\dfrac{3}{8}$——$\dfrac{2}{7}$ **kh** $\dfrac{5}{6}$——$\dfrac{45}{48}$.   **d** $\dfrac{7}{10}$——$\dfrac{69}{100}$
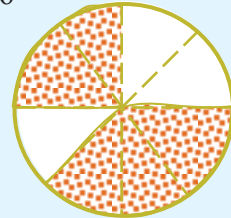
4 Isugu hagaaji jajabyada habka kordhaya,

b $\dfrac{2}{5}$, $\dfrac{23}{25}$, $\dfrac{3}{20}$, $\dfrac{3}{10}$ **t** $\dfrac{11}{3}$, $\dfrac{15}{4}$, $\dfrac{9}{7}$.

5 Isugu hagaaji jajabyada soo socoda habka sii yaraanshaha.

b $\dfrac{2}{5}$, $\dfrac{4}{9}$, $\dfrac{21}{50}$,   **t** $\dfrac{4}{5}$, $\dfrac{19}{25}$, $\dfrac{17}{20}$ **j** $\dfrac{4}{3}$, $\dfrac{5}{8}$, $\dfrac{7}{6}$.

6 Eeg shaxanka 3.14, oo ka jawaab midkastoo ka mid ah su'aalahan soo socda. (ka soo qaad in shaxanka loo qayb-qaybiyay qaybo is leeg).

Shaxanka 3.14

b waa maxay qaybta hadhaysaa ee shaxanka?

t waa maxay jajabka inta aan la hadhayn ee shaxanka?

7 Shaxanka 3.15, waa maxay qaybta tiirka la jabiyay. Waa maxay qaybta taagani?

4   6
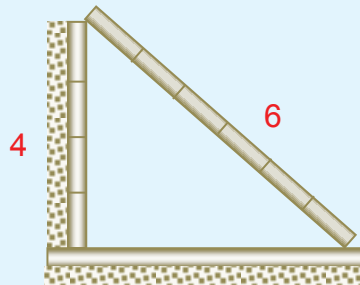
Shaxanka 3.15

8 Guuleed dherarkiisu waa $99\dfrac{1}{2}$ cm khaddar dhererkiisu waa $93\dfrac{1}{4}$ cm intee buu Guuleed ka dheeryahay Khadar?

9 Xariijinta AB ee hoose ayaa loo qaybiyay 20 qaybood oo isleeg, waa maxay qaybta AB, ee gobol kasta oo xariijintan u taagan?

b $\overline{AX}$ **t** $\overline{AY}$ **j** $\overline{AZ}$ **x** $\overline{BY}$ **kh** $\overline{XZ}$

A ┤──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┬──┤ B
A   X   Y   Z   B

Shaxanka 3.16

10 Lamaanayaasha jajabyada ah ee soo socda ku weebaa isku dhigma?

b $\dfrac{2}{3}, \dfrac{8}{12}$ **t** $\dfrac{3}{4}, \dfrac{15}{12},$ **j** $\dfrac{7}{9}, \dfrac{28}{36},$ **x** $\dfrac{1}{2}, \dfrac{75}{140}.$

11 Raadi tirooyinka maqan haddii ay jajabyadu isku dhigmaan.

b $\dfrac{1}{3} = \dfrac{\boxed{?}}{9}$ **t** $\dfrac{1}{\boxed{?}} = \dfrac{12}{24}$ **j** $\dfrac{\boxed{?}}{3} = \dfrac{5}{15}$ **x** $\dfrac{4}{5} = \dfrac{8}{\boxed{?}}$

3.4   XISAAB FALLADA JAJABYADA

3.4.1 ISKUGAYNTA IYO KALAGOYNTA JAJABYADA

Fasalkii 4^{aad} waxaad ku soo baratay isku gaynta iyo kalagoynta jajabyada hooseeyayaashoodu ay isku midka yihiin. Ciwaan hoosaadkuna waxaad ku barandoontaa iskugaynta iyo kalagoynta, jajabyada leh hooseeye isku mid ah iyo kuwo hooseeyayaashoodu ay kala duwanyihiin.

A   **Naqtiinka iskugaynta iyo kalagoynta jajabyada leh hooseeye isku mid ah**

Hawlgalka 3.4

1   Ka shaqee kuwan soo socda:

b $\dfrac{11}{8} + \dfrac{3}{8}$ **t** $\dfrac{12}{47} - \dfrac{7}{47}.$

2   Sideed iskugu dartaa jajabyada hooseeyayaashoodu ay isku midka yihiin?

3   Sideed u kala jartaa jajabyada hooseeyayaashoodu ay isku midka yihiin?

Hawlgalkaasi sare waxaad ku aragtay iskugaynta iyo kalagaynta jajabyada leh hooseeye isku mid ah. Hawlgalkan waxaad ku arki doontaa tusaalooyin kale iyo laylisyo ku saabsan iskugaynta iyo kalagaynta jajabyada leh hooseeye isku mid ah.

Tusaale: ka shaqee oo fududee mid kastoo kuwan soosocda ah.

b $\dfrac{4}{8} + \dfrac{6}{8}$ **t** $\dfrac{13}{17} - \dfrac{6}{17}.$

Furfuris:

b $\dfrac{4}{8} + \dfrac{6}{8} = \dfrac{4+6}{8} = \dfrac{10}{8} = \dfrac{5 \times 2}{4 \times 2} = \dfrac{5}{4}$ **t** $\dfrac{13}{17} - \dfrac{6}{17} = \dfrac{13-6}{17} = \dfrac{7}{17}$

Tusaale: ka shaqee oo fududee mid kastoo kuwan soo socda ah.

b $\dfrac{11}{12} - \dfrac{3}{12}$ t $\dfrac{306}{65} - \dfrac{200}{65}$

Furfuris:

b $\dfrac{11}{12} - \dfrac{3}{12} = \dfrac{11-3}{12} = \dfrac{8}{12} = \dfrac{2 \times 4}{3 \times 4} = \dfrac{2}{3}$ t $\dfrac{306}{65} - \dfrac{200}{65} = \dfrac{306-200}{65} = \dfrac{106}{65}$

> **Ogow**
>
> **1** Jajab kasta oo Togan $\dfrac{a}{b}$ oo "c" ay tahay tiro idil oo aan eber ahayn,
>
> markaa $\dfrac{a}{b} = a \times \dfrac{c}{b \times c}$ markaa waxaanu nidhaa $\dfrac{a}{b}$ iyo $a \times \dfrac{c}{b \times c}$, waa jajabyo isku dhigma.
>
> **2** Haddii lagu siiyo jajabyo togan $\dfrac{a}{b}$ iyo $\dfrac{c}{b}$ markaa kuwan soo socda waa run.
>
> b $\dfrac{a}{b} + \dfrac{c}{b} = \dfrac{a+c}{b}$ t $\dfrac{a}{b} - \dfrac{c}{b} = \dfrac{a-c}{b}$, markaa $a > c$.

LAYLIS 3.4

1 ka shaqee oo fududee midkastoo kuwan soo socda ah.

b $\dfrac{2}{3} + \dfrac{5}{3}$ t $\dfrac{17}{49} + \dfrac{31}{49}$ j $\dfrac{53}{86} + \dfrac{47}{86}$

x $\dfrac{19}{97} + \dfrac{63}{97}$ kh $\dfrac{8}{87} + \dfrac{6}{87}$ d $\dfrac{5}{11} + \dfrac{7}{11}$

2 Ka shaqee midkastoo kuwan soo socda ah, oo fududee hadday suurtogal tahay

b $\dfrac{17}{16} + \dfrac{14}{16}$ t $\dfrac{21}{25} - \dfrac{14}{25}$ j $\dfrac{12}{10} - \dfrac{7}{10}$

x $\dfrac{155}{99} - \dfrac{110}{99}$ kh $\dfrac{13}{7} - \dfrac{8}{7}$ d $\dfrac{76}{2} - \dfrac{51}{2}$

3 ka dhig midkastoo kuwan soo socda ah tiro idil ama tiro dhafan.

b $\dfrac{7}{4} + \dfrac{2}{4}$ t $\dfrac{14}{5} + \dfrac{3}{5}$ j $\dfrac{5}{7} + \dfrac{4}{7} + \dfrac{6}{7}$ x $\dfrac{24}{11} - \dfrac{2}{11}$

B   Iskugaynta iyo kalagoynta jajabyada leh hooseeyayaal kala duwan

Ilaa hadda waxaad aragtay iskugeynta iyo kalagoynta jajabyada leh hooseeye iskumid ah. Casharkan xigana waxaad ku barandoontaa iskugeynta iyo kalagoynta jajabyada leh hooseeyaal kaladuwan.

Hawlgalka 3.5

1 b   Waa maxay qiimaha marka lagudhufto 4, sareeyaha iyo hooseeyaha jajabkan 1/3?

t   Waa maxay qiimaha marka lagudhfo 3 sareeyaha iyo hooseeyaha jajabkan ¼

j   Waa maxay wadarta natiijada aad ka heshay (b) iyo (t) ?

x   Waa maxay farqiga natiijada aad ka heshay (b) iyo (t)

2 Ka shaqee $\dfrac{7}{12} - \dfrac{1}{3}$ adigoo hadhaynaya qeybaha shaxanka 3.17, si aad umuujiso farqiga.

Shaxanka 3.17

Ogow
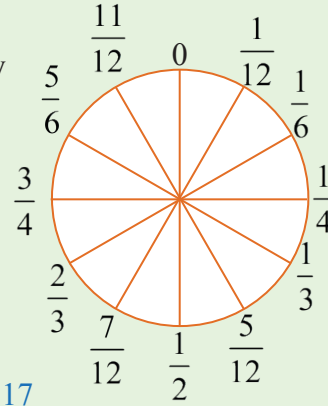
Si aad u hesho wadarta ama farqiga laba jajab oo hooseeyaashoodu kala duwan yahay, dib ugu magacow jajabyada leh hooseeye isku mid ah, dabadeena iskugee ama kalagoo oo fududee, hadii ay suurtoobayso.

Tusaale 1: Raadi wadarta midkastoo jajabydan soo socda ah

b $\dfrac{8}{5} + \dfrac{7}{6}$ **t** $\dfrac{9}{5} + \dfrac{7}{10}$

Furfuris:

b   U badal 8/5 iyo 7/6 jajabyo leh hooseeye isku mid ah.

$$\dfrac{8}{5} = \dfrac{8 \times 6}{5 \times 6} = \dfrac{48}{30} \text{ iyo } \dfrac{7}{6} = \dfrac{7 \times 5}{6 \times 5} = \dfrac{35}{30}$$

Hooseeyaha ay wadaagaan waa 30.

Sidaasi darteed , $\dfrac{8}{5} + \dfrac{7}{6} = \dfrac{48}{30} + \dfrac{35}{30} = \dfrac{48+35}{30} = \dfrac{83}{30}$

t   U badal $\dfrac{9}{5}$ iyo $\dfrac{7}{10}$, jajabyo leh hooseeye isku mid ah.

$$\dfrac{9}{5} = \dfrac{9}{5} \times \dfrac{2}{2} = \dfrac{18}{10} \text{ iyo } \dfrac{7}{10}$$

Hooseeyaha ay wadaagaan waa 10.

Sidaas darteed,

$$\dfrac{9}{5} + \dfrac{7}{10} = \dfrac{18}{10} + \dfrac{7}{10} = \dfrac{(18 + 7)}{10}$$

$$= \dfrac{25}{10} = \dfrac{5 \times 5}{2 \times 5} = \dfrac{5}{2} \times \dfrac{5}{5} = \dfrac{5}{2} \times 1 = \dfrac{5}{2}$$

Tusaale 2: ka shaqee midkastoo kuwan soo socda ah.

b $\quad \dfrac{4}{9} - \dfrac{2}{5}$ $\qquad$ t $\quad \dfrac{59}{7} - \dfrac{3}{2}$

Furfuris:

b $\quad \dfrac{4}{9} = \dfrac{4 \times 5}{9 \times 5} = \dfrac{20}{45}$ $\qquad\qquad$ t $\quad \dfrac{59}{7} = \dfrac{59}{7} \times \dfrac{2}{2} = \dfrac{118}{14}$

$\quad \dfrac{2}{5} = \dfrac{2 \times 9}{5 \times 9} = \dfrac{18}{45}$ $\qquad\qquad\qquad$ $\dfrac{3}{2} = \dfrac{3}{2} \times \dfrac{7}{7} = \dfrac{21}{14}$

Hooseeyaha ay wadaagaan waa 45 $\qquad$ Hooseeyaha ay wadaagaan waa 14

Markaa $\dfrac{4}{9} - \dfrac{2}{5} = \dfrac{20}{45} - \dfrac{18}{45}$ $\qquad$ Markaa $\dfrac{59}{7} - \dfrac{3}{2} = \dfrac{118}{14} - \dfrac{21}{14}$

$\qquad\qquad = \dfrac{(20 - 18)}{45} = \dfrac{2}{45}$ $\qquad\qquad\qquad = \dfrac{118 - 21}{14} = \dfrac{97}{14}$

Sidaas darteed $\dfrac{4}{9} - \dfrac{2}{5} = \dfrac{2}{45}$ $\qquad$ Sidaas darteed $\dfrac{59}{7} - \dfrac{3}{2} = \dfrac{97}{14}$

Tusaale haasi kor ku xusan waxaynu ka soo qaadan sidan

Ogow. Jajabyo kasta oo togan $\dfrac{a}{b}$ iyo $\dfrac{c}{d}$, markaa waxaa run ah.

1 $\quad \dfrac{a}{b} + \dfrac{c}{d} = \dfrac{a \times d + b \times c}{b \times d} = \dfrac{ad + bc}{bd}$

2 $\quad \dfrac{a}{b} - \dfrac{c}{d} = \dfrac{a \times d - b \times c}{b \times d} = \dfrac{ad - bc}{bd}$

Tusaale 3: ka shaqee kuwan soo socda:

b $\quad \dfrac{5}{6} + \dfrac{2}{3}$ $\qquad$ t $\quad \dfrac{15}{4} - \dfrac{2}{7}$

Furfuris: waxaa jira laba hab.

b $\quad$ Habka 1^{aad} hooseeyaha labada jajab oo iskumid laga dhigo oo haddana la isku daro,

$\dfrac{5}{6}$ iyo $\dfrac{2}{3} = \dfrac{2}{3} \times \dfrac{2}{3} = \dfrac{4}{6}$

Marka $\dfrac{5}{6} + \dfrac{4}{6} = \dfrac{5 + 4}{6} = \dfrac{9}{6} = \dfrac{3 \times 3}{3 \times 2} = \dfrac{3}{2}$

Sidaas darteed $\dfrac{5}{6} + \dfrac{2}{3} = \dfrac{9}{6} = \dfrac{3}{2}$

Habka 2^{aad} Adeegsiga dhufsana yaraha ay wadaagaan (Dh.Y.W) oo markaa la isku daro.

Dhufsanayaasha 6 waa 6,12, 18……

Dhufsanayaasha 3 waa 3,6,9,12,15,18,………

Dhufsanayaasha ay wadaagaan (Dh.Y.W) waa 6,

Markaa $\dfrac{5}{6} + \dfrac{2}{3} = \dfrac{5+4}{6} = \dfrac{9}{6} = \dfrac{3}{2} \times \dfrac{3}{2} = \dfrac{3}{2}$

t   Habka 1^{aad} hooseeya isku mid kadhig oo kala jar.

$\dfrac{15}{4} = \dfrac{15 \times 7}{4 \times 7} = \dfrac{105}{28}$ iyo $\dfrac{2}{7} = \dfrac{2}{7} \times \dfrac{4}{4} = \dfrac{8}{28}$

Markaa $\dfrac{105}{28} - \dfrac{8}{28} = \dfrac{105-8}{28} = \dfrac{97}{28}$

Sidaas darteed $\dfrac{15}{4} - \dfrac{2}{7} = \dfrac{97}{28}$

Habka 2^{aad} adeegso Dh.y.w oo kala goo,

dhufsanayaasha 4 waa: 8, 12, 16, 20, 24, 28,…,

Dhufsanayaasha 7 waa: 14, 21, 28, 35, 42,…,

Dh, y, w waa 28.

Markaa $\dfrac{15}{4} - \dfrac{2}{7} = \dfrac{7 \times 15 - 4 \times 2}{28} = \dfrac{105-8}{28} = \dfrac{97}{28}$

Sidaas darteed $\dfrac{15}{4} - \dfrac{2}{7} = \dfrac{97}{28}$

LAYLIS 3.5

1 Raadi wadarta, oo u qor jawaabtana saansaanta ugu fudud

b $\dfrac{8}{9} + \dfrac{1}{9}$ **t** $\dfrac{4}{10} + \dfrac{5}{10}$ **j** $\dfrac{7}{8} + \dfrac{4}{3}$ **x** $\dfrac{7}{16} + \dfrac{3}{8}$

kh $\dfrac{2}{7} + \dfrac{8}{4}$ **d** $\dfrac{8}{15} + \dfrac{2}{3} + \dfrac{1}{5}$ **r** $\dfrac{5}{6} + \dfrac{5}{12} + \dfrac{1}{4}$ **s** $\dfrac{7}{9} + \dfrac{11}{8} + \dfrac{14}{27}$

2 Ka shaqee jajabyadan soo socda oo fududee;

b $\dfrac{7}{8} - \dfrac{3}{5}$ **t** $\dfrac{8}{21} - \dfrac{2}{7}$ **j** $\dfrac{5}{6} - \dfrac{5}{12} - \dfrac{1}{4}$

3   Waxaan ku kharash gareeyaa saddex meelood laba ahaan dhakhligayga cunto, saddex meelood meel ahaana waxaan ku bixiyaa kirada guriga?

   b   haddii dakhligaygu yahay 600 birr, waa maxay jajab ahaan dakhliga ii soo hadhay?

   t   imisaan ku kharash gareeyay cunto?

   j   imisaane ku kharashgareeyay kirada?

4   Marwo Rooda waxay isticmaashaa ¼ oo caronafaqeeye-yaal ah, hadii ay siisay 5/12 walaalkeed, waa maxay jajabka carro-nafaqeeyaha iyada iyo walaalkeed ay isticmaaleen?

5   Saddex nin ayaa qaybsaday liin oo cunay. Labadii nin ee ugu horeeyay waxay cuneen $\frac{1}{4}$ iyo $\frac{3}{11}$ ee liinta siday u kala horeeyaan.? Intee in le,eg oo liin ah ayuu cunay ka saddexaad ?

3.4.2 ISUDHUFASHADA IYO ISUQEYBINTA JAJABYADA

A   Iskudhufashada jajabyada

Ciwaan hoosaadkan waxaad ku baran doontaa sida la isugu dhufto laba jajab.

Hawlgalka 3.6

1   si aad u hesho taranta $\frac{1}{3}$ × $\frac{1}{4}$

saabaanka loo baahan yahay : warqado xariiqyada labajibbaaranaha ah leh, qalin qori midab leh, sanduuq joomateri, masterad.

Hanaanka:-

   i   fur warqada leh xariiqyada labajibaarne ah sawir ka kooban saddex jiif u tax iyo afar jog u tax.

   ii   Ku madoobee casaan jiif u tax.

   iii   Ku midabee joog utaxana huruud (midab jaale ah) oo ka jawaab su,aalahan soo socda.

      b   imisa gobol oo labajibbaaran ayuu shaxankani leeyahay?

      t   imisa gobol oo labajibbaaran ayaa labajeer la midabeeyey?

      j   waa imisa jajab ahaan labajibbaaranayaasha labada jeer la midabeeyay?
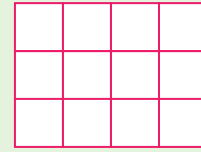
> **x**   ma u malaynaysaa in natiijada aad ka heshay c'' ay leeg tahay
>
> $\dfrac{1}{3} \times \dfrac{1}{4}$?
>
> **2**   naqil (guuri) oo hadhee qeybta labajibaarane ee xagan
>
> hoose lagugu siiyay si loomuujiyo $\dfrac{1}{3} \times \dfrac{2}{4}$
>
> (adeegso midabo kala duwan)

Shaxanka 3.18

Ogow   Si laysugu dhufto jajabyada, iskudhufo sareeyayaasha si aad u hesho taranta sareeyayaasha, oo iskudhufo hooseeyaasha si aad u hesho taranta hooseeyaasha.

Tusaale 1: raadi tarankasta

   b $\dfrac{2}{9} \times \dfrac{3}{4}$ **t** $\dfrac{15}{16} \times \dfrac{4}{5}$

Furfuruis :

   b   <u>Tallaabada 1:</u> iskudhufo sareeyaha waa $2 \times 3 = 6$

       <u>Tallaabada 2:</u> iskudhufo hooseeyaha waana $9 \times 4 = 36$

Sidaas daraadeed $\dfrac{2}{9} \times \dfrac{3}{4} = \dfrac{6}{36} = \dfrac{6 \times 1}{6 \times 6} = \dfrac{1}{6}$

   t   <u>Tallaabada 1:</u> iskudhufo sareeyaha waa $15 \times 4 = 60$

       <u>Tallaabada 2:</u> iskudhufo hooseeyaha waa $16 \times 5 = 80$

Sidaas daraadeed $\dfrac{15}{16} \times \dfrac{4}{5} = \dfrac{15 \times 4}{16 \times 5} = \dfrac{60}{80} = \dfrac{3 \times 20}{4 \times 20} = \dfrac{3}{4}$

Tusaale 2 : eeg shaxanka 3.19 hoose si aad uga jawaabto su,aalahan soo socda.

   b   waa imisa jajabka shaxanka inta la hadheeyey?

   t   waa imisa jajabka shaxanka inta aan la hadhayn?

   j   Raadi taranta geybaha hadhaysan iyo qaybaha aan hadhaysneyn?
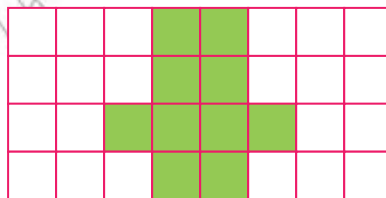
Shaxanka 3.19

Furfuris: wadarta qaybaha = 32

Qaybaha la hadheeyay = 10

Jajabka qaybta hadhaysan = $\dfrac{10}{32} = \dfrac{2 \times 5}{2 \times 16} = \dfrac{5}{16}$

b jajabka qaybta aan hadhaysnayn $\dfrac{22}{32} = \dfrac{2 \times 11}{2 \times 16} = \dfrac{11}{16}$

t taranta jajabka qaybta hadhaysan iyo qaybta aan hadhaysnayn

$$\dfrac{5}{16} \times \dfrac{11}{16} = \dfrac{5 \times 11}{16 \times 16} = \dfrac{55}{256}$$

Tusaale 3: Raadi taranta oo fududee:

b $\dfrac{3}{4} \times \dfrac{4}{5}$ **t** $\dfrac{5}{8} \times \dfrac{4}{6}$

Furfuris: **b** $\dfrac{3}{4} \times \dfrac{4}{5} = \dfrac{3 \times 4}{5 \times 4} = \dfrac{3}{5}$

t $\dfrac{5}{8} \times \dfrac{4}{6} = \dfrac{5 \times 4}{8 \times 6} = \dfrac{20}{48} = \dfrac{4 \times 5}{4 \times 12} = \dfrac{5}{12}$
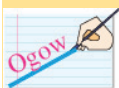
> **Ogow** Tusaalahaasi kor ku xusan waxaynu ka soo qaadaneynaa kuwan soo socda
>
> Hadii $\dfrac{a}{b}$ iyo $\dfrac{c}{d}$ ay tahay jajabkasta oo togan $\dfrac{a}{b} \times \dfrac{c}{d} = \dfrac{a \times c}{b \times d} = \dfrac{ac}{bd}$

Tusaale 4: Raadi taranta oo fududee: $2\dfrac{3}{4} \times 4\dfrac{2}{5}$

Furfuris : u badal $2\dfrac{3}{4}$ iyo $4\dfrac{2}{5}$ jajab maqumane taasi waa

$$2\dfrac{3}{4} = \dfrac{4 \times 2 + 3}{4} = \dfrac{11}{4} \quad \text{iyo} \quad 4\dfrac{2}{5} = \dfrac{5 \times 4 + 2}{5} = \dfrac{22}{5}$$

Markaa $2\dfrac{3}{4} \times 4\dfrac{2}{5} = \dfrac{11}{4} \times \dfrac{22}{5}$

$$= \dfrac{11 \times 22}{4 \times 5} = \dfrac{242}{20} = \dfrac{121}{10} = 12\dfrac{1}{10}$$

Sidaas darteed $2\dfrac{3}{4} \times 4\dfrac{2}{5} = 12\dfrac{1}{10}$
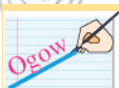
> **Ogow** Si la isugu dhufto laba tiro oo dhafan marka hore u badal tirooyinka jajab maqumane oo markaana iskudhufo, ubadal natiijada qaabka tiro dhafan.

LAYLIS 3.6

1   Raadi taranta midkastoo jajabyadan soo socda ah,

b $\dfrac{1}{4} \times \dfrac{5}{4}$ **t** $\dfrac{3}{2} \times \dfrac{4}{5}$ **j** $\dfrac{4}{4} \times \dfrac{1}{4}$ **x** $\dfrac{9}{12} \times \dfrac{4}{3}$

kh $\dfrac{1}{2} \times \dfrac{4}{3}$ **d** $\dfrac{8}{15} \times \dfrac{6}{5}$ **r** $\dfrac{8}{9} \times \dfrac{72}{5}$

2   Guuri (naqil) oo buuxi shaxdan soo socota .

	m	n	m×n
b	$\dfrac{4}{5}$	$\dfrac{2}{3}$	
t	6	$\dfrac{3}{2}$	
j	$4\dfrac{1}{2}$	$\dfrac{7}{9}$	

3   Iskudhufo oo fududee midkastoo kuwan soo socda ah.

b $8 \times \dfrac{1}{3}$ **t** $3 \times \dfrac{1}{8}$ **j** $5 \times \dfrac{1}{9}$ **x** $7 \times \dfrac{1}{12}$

kh $\dfrac{1}{4} \times 12$ **d** $\dfrac{2}{3} \times \dfrac{1}{2}$ **r** $\dfrac{20}{9} \times \dfrac{3}{5}$ **s** $\dfrac{3}{4} \times \dfrac{4}{3}$

4   Iskudhufo oo fududee midkastoo kuwan soo socda ah.

b $2\dfrac{1}{3} \times 5\dfrac{1}{6}$ **t** $\dfrac{2}{3} \times 2\dfrac{4}{9}$ **j** $8\dfrac{1}{2} \times 2\dfrac{1}{8}$

5   Guuri (naqil) shaxanka 3.20 oo hadhee gobolka u taagan $\dfrac{2}{3}$ ka $\dfrac{1}{5}$

Shaxanka 3.20

6   Imisa saacadood ayaa ku jira $2 \times \dfrac{1}{2}$ maalmood?

B   Isku qeybinta jajabyada

Ciwaan hooseedkani waxaad ku baran doontaan rogaalada iyo iskuqaybinta jajabyada.

Hawlgalka 3.7

1   Raadi taranta jajabyadan

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

2   Taranta 3/8 iyo midkale waa 1. waa tee tiradaasi?

3   Haddii $\dfrac{3}{4} \times \dfrac{c}{d} = 1$ markaa waa maxay qiimaha $\dfrac{c}{d}$?

Waa maxay xidhiidhka ka dhexeeya $\dfrac{3}{4}$ iyo $\dfrac{c}{d}$?

Ogow

1   haddii taranta labajajab ay tahay 1, jajabkastaaba waa rogaalka ka kale

2   rogaalka jajabka aan eber lahayni waa kala rogida tiradaasi.

Tusaale 1: raadi rogaalka jajabyadan soo socda .

b $\dfrac{13}{17}$ **t** $3 \times \dfrac{1}{2}$

Furfuris: **b**   rogaalka $\dfrac{13}{17}$ waa $\dfrac{17}{13}$

t   ubadal $3 \times \dfrac{1}{2} = \dfrac{3}{2}$, Rogaalkeeduna waa $\dfrac{2}{3}$

Tusaale 2: waa maxay rogaalka   **b** 1   **t** 0

Furfuris: **b**   rogaalka 1 waa 1, sababtoo ah $1 \times 1 = 1$

t   0 malaha rogaal sababtoo ah $\dfrac{1}{0}$ waa bilaa macno ama uma qaybin kartid tiro eber.

Ogow   Haddii $\dfrac{a}{b}$ iyo $\dfrac{c}{d}$ ay yihiin jajab togan

$\dfrac{a}{b}$ waa rogaalka $\dfrac{b}{a}$ iyo $\dfrac{b}{a}$ waa rogaalka $\dfrac{a}{b}$, markaa $\dfrac{a}{b} \times \dfrac{b}{a} = 1$

Tusaale 3: u qor jawaabaha sida taranta hal tiro oo lagu dhuftay rogaalka takale

  b $\dfrac{4}{9} \div \dfrac{3}{4}$ **t** $\dfrac{11}{13} \div \dfrac{7}{12}$ **j** $\dfrac{83}{71} \div \dfrac{49}{62}$

Furfuris:

  b $\dfrac{4}{9} \div \dfrac{3}{4} = \dfrac{4}{9} \times \dfrac{4}{3}$ **t** $\dfrac{11}{13} \div \dfrac{7}{12} = \dfrac{11}{13} \times \dfrac{12}{7}$ **j** $\dfrac{83}{71} \div \dfrac{49}{62} = \dfrac{83}{71} \times \dfrac{62}{49}$
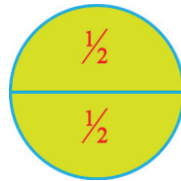
Ilaa iyo hadda waxaad aragtay xidhiidhka ka dhaxeeya jajabta iyo rogaalkeeda. Waxaynu baranayna isku qaybinta jajabyada inagoo adeegsanayna fikirka rogaalka.

Tusaale 4:   Shaxanka 3.21 (i) waxaa loo qaybiyay laba badh.

            Shaxanka 3.21 (ii) waxaa loo qaybiyay afar

            Shaxanka 3.21 (iii) waxaa loo qaybiyay sideed.

     Adeegsiga shaxanada sidalooga jawaabo su'aalaha,
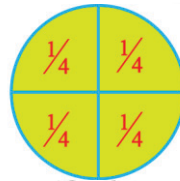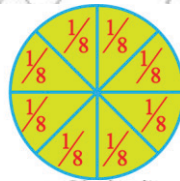
         i   ii   iii

Shaxanka 3.21

  b   imisa afraad baa ku jirta hal badh ?

  t   imisa sideedaad ayaa ku jira hal- badh ?

Furfuris: **b** $\dfrac{1}{2}$ waxaa ku jira 2 meelood oo min ¼ ah

         waa sidan $\dfrac{1}{2} \div \dfrac{1}{4} = \dfrac{1}{2} \times \dfrac{4}{1} = \dfrac{4}{2} = 2$

      t $\dfrac{1}{2}$ waxaa ku jira 4 meelood oo min $\dfrac{1}{8}$ ah

         waa sidan $\dfrac{1}{2} \div \dfrac{1}{8} = \dfrac{1}{2} \times \dfrac{8}{1} = \dfrac{1 \times 8}{2 \times 1} = \dfrac{8}{2} = 4$

Tusaale 5: u qor qaybta saansaanta ugu fufud.

  b $\dfrac{4}{6} \div \dfrac{2}{3}$ **t** $\dfrac{6}{7} \div \dfrac{3}{4}$ **j** $\dfrac{1}{2} \div \dfrac{5}{4}$

Furfuris: **b** $\dfrac{4}{6} \div \dfrac{2}{3} = \dfrac{4}{6} \times \dfrac{3}{2}$ $= \dfrac{4 \times 3}{6 \times 2}$ $= \dfrac{12}{12} = 1$

        t $\dfrac{6}{7} \div \dfrac{3}{4}$ $= \dfrac{6}{7} \times \dfrac{4}{3}$ $= \dfrac{6 \times 4}{7 \times 3}$ $= \dfrac{24}{21} = \dfrac{8 \times 3}{7 \times 3}$ $= \dfrac{8}{7}$

$$\mathbf{j} \quad \frac{1}{2} \div \frac{5}{4} \quad = \frac{1}{2} \times \frac{4}{5} \quad = \frac{4}{10} = \frac{2 \times 2}{5 \times 2} = \frac{2}{5} \times \frac{2}{2} = \frac{2}{5} \times 1 = \frac{2}{5}$$

markaa waxayu qori karnaa xeerkan guud

Ogow

Haddii $\frac{a}{b}$ iyo $\frac{c}{d}$ ay yihiin jajabkasta oo togan $\dfrac{\frac{a}{b}}{\frac{c}{d}} = \frac{a}{b} \times \frac{d}{c} = \frac{ad}{bc}$

LAYLIS 3.7

1 Raadi rogaalka jajabyadan soo socda:

b $\quad \frac{6}{5}$ **t** $\quad \frac{4}{3}$ **j** $\quad \frac{5}{13}$

x $\quad \frac{53}{18}$ **kh** $\quad \frac{43}{16}$ **d** $\quad \frac{7}{8}$

2 guuri (naqil) oo buuxi shaxdan soo socota. Maxaad ku aragtay shaxda?

	$\frac{m}{n}$	$\frac{n}{m}$	$\frac{m}{n} \times \frac{n}{m}$
b	$\frac{1}{6}$		1
t	$\frac{5}{7}$		
j		$\frac{3}{8}$	
x	$\frac{15}{2}$		

3 raadi qaybta oo fududee

b $\quad \frac{1}{4} \div \frac{1}{5}$ **t** $\quad \frac{1}{7} \div \frac{1}{14}$ **j** $\quad \frac{4}{5} \div \frac{3}{6}$

x $\quad \frac{5}{7} \div \frac{11}{10}$ **kh** $\quad \frac{18}{2} \div \frac{9}{4}$ **d** $\quad \frac{22}{33} \div \frac{8}{3}$

4 ka shaqee (bildhaamin : u badal tirooyinka dhafan jajabyo)

b $\quad 3\frac{1}{2} \div \frac{7}{8}$ **t** $\quad 4\frac{1}{4} \div \frac{17}{8}$ **j** $\quad \frac{7}{5} \div 2\frac{4}{9}$

x $\quad 4 \div \frac{8}{11}$ **kh** $\quad 2\frac{1}{2} \div 1\frac{1}{4}$

5 Qaybta laba tiro ayaa ah $\frac{4}{3}$, haddii tirada wayni ay tahay $\frac{7}{2}$, raadi tirada yar?

6 Tiro ayaaba ah uun rogaalkeedii, waa maxay tiradaasi? Waa maxay tirada aan lahayn wax rogaal ah?

3.5   XISAAB FALLADA JAJAB TOBANLE YAASHA

3.5.1 ISUGAYNTA IYO ISKUDHUFASHADA JAJAB TOBANLEYAASHA

A   **Naqtiin iskugaynta jajab tobanleyaasha leh ilaa laba god**

Hawlgalka 3.8

1   **b**   raadi qaabka jajab ee 0.3

   t   raadi qaabka jajab ee 0.6

   j   raadi wadarta jajabyada aad ka heshay b) iyo t), waa maxay wadarta jajab toban lahu?

   x   miyuu jiraa wax xidhiidha oo ka dhaxeeya wadarta aad ka heshay c) iyo 0.3 + 0.6 ?

2   **b**   waa maxay qaabka jajab ee 0.23?

   t   waa maxay qaabka jajab ee 0.15?

   j   kala jar jajabta 0.25 iyo jajabta 0.23 waa maxay natiijada jajab tobanle ee aad heshay ?

   x   miyuu jiraa wax xidhiidha oo ka dhaxeeya wadarta aad ka heshay c) iyo 0.23 -0.15?

Ogow

Si la isugu daro jajab tobanlaha

✓   jajab toban laha u badal jajab , oo isu gee, markaana wadarta u badal jajab tobanle. Ama

✓   Jajab tobanlaha isku hoos qor iskuna aadi dhibcaha oo iskugee.

Tusaale 1: iskugee midkastoo kuwan soo socda ah.

   b $0.3 + 0.5$ **t** $0.2 + 0.37$

 Furfuris:

   b $0.3 + 0.5 = 0.8 = \dfrac{3}{10}$ iyo $0.5 = \dfrac{5}{10}$

Sidaas darteed

$$0.3 + 0.5 = \frac{3}{10} + \frac{5}{10} = \frac{3+5}{10} = \frac{8}{10} = 0.8$$

t $0.2 = \dfrac{20}{100}$ iyo $0.37 = \dfrac{37}{100}$

Sidaas darteed

$$0.2 + 0.37 = \dfrac{20}{100} + \dfrac{37}{100} = \dfrac{20 + 37}{100} = \dfrac{57}{100} = 0.57$$

Tusaale 2: ka shaqee kuwan soo socda:

    b $0.45 + 1.2$ **t** $3.1 + 6.74$

Furfuris:

b $\dfrac{45}{100} + \dfrac{12}{10} = \dfrac{165}{100} = 1.65$

Sidaas darteed $0.45 + 1.2 = 1.65$

t $3.1 + 6.74 = \dfrac{31}{10} + \dfrac{674}{100} = \dfrac{984}{100} = 9.84$

Sidaas darteed $3.2 + 6.74 = 9.84$

B   **Iskugaynta iyo kalagoynta jajabtobanle ilaa iyo saddex go**

Hawlgalka 3.9

1 **b**   raadi qaabka jajabka ee 1.3 iyo 2.1

   t   waa maxay wadarta qaabka jajab ee 1.3 iyo 2.1?

   j   waa maxay qaabka jajab toban leh ee wadarta (b)?

   x   miyuu jiraa wax xidhiidh ah oo ka dhaxeeya wadarta qaabka jajabtobanle iyo 1.3 + 2.1 ?

2 **b**   raadi qaabka ee 0.341 iyo 0.127

   t   kalagoo qaabka jajab ee 0.127 iyo 0.341

   j   waa maxay jajab tobanlaha natiijada?

   x   miyuu jiraa wax xidhiidh ah oo ka dhaxeeya natiijada aad ka heshay (b) iyo 0.341 − 0.127?

Tusaale 1:   ka shaqee midkastoo kuwan soo socda adigoo isku hoos qoraya ?

   b $0.74 + 0.4$ **t** $2.51 + 8.62$ **j** $9.341 + 2.154$

Furfuris:-   joog u tax u qor markaana isku dar

       0.74   2.51   9.341

b   +0.40   **t**   +8.62   **j**   + 2.154

       1.14   11.13   11.495

Tusaale 2:   ka shaqee kuwan soo socda adigoo is hoos dhigaya

b $9.1 - 3.3$ **t** $22.75 - 8.85$ **j** $10.431 - 6.792$

 Furfuris: isku hoos qor jajab tobanlaha oo kalagoo.

b
$$\begin{array}{r} 9.1 \\ -3.3 \\ \hline 5.8 \end{array}$$

t
$$\begin{array}{r} 22.75 \\ -8.85 \\ \hline 13.90 \end{array}$$

j
$$\begin{array}{r} 10.431 \\ -6.792 \\ \hline 3.639 \end{array}$$

Tusaale 3:   Bashiir 2 kiiloo oo sonkor ah ayaa wuxuu ku iibsaday 29.50 birr, 3 killoo oo baasta ahna wuxuu ku iibsaday 24.75 birr iyo 5 xabo oo saabuun ah oo uu siistay 27.5 birr.

b   waa imisa wadarta kharashkiisu ?

t   waa maxay farqiga u dhaxeeya kharashka sonkorta iyo baastada ?

 Furfuris:

b   qiimaha 2 kg ee sonkorta ah = 29.50 bir

Qiimaha 3 kg ee baastada ah = 24.75 bir

Qiimaha saabuunta = 27.50

Wadarta kharashka waa = 81.75 birr

Wadarta kharashka ee bashiir

t   farqiga u dhaxeeya qiimaha sonkorta iyo baastadu waa
$29.50 - 24.75 = 4.75$ birr.

Tusaale 4:   haddii M = 5.24 iyo N= 4.61 markaa qiimee kuwan soo socda :-

b   m + n   **t**   m - n

Furfuris:

b $m + n = 5.24 + 4.61 = 9.85$ **t** $m - n = 5.24 - 4.61 = 0.63$
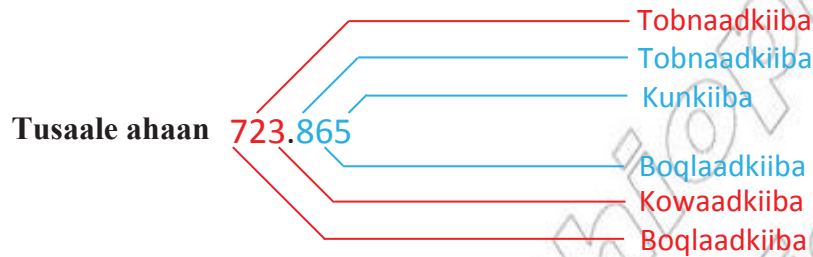
Isugaynta iyo kalagoynta jajab tobanle waxaa looga shaqeyn karaa ;

1   In jajab tobanlaha la isku hoos qoro iyadoo la isku aadinayo barta dhibicda , ama

2   Jajab toban laha u badal jajab oo iskugee, markaana wadarta u siibadal jajab tobanle.

Shaxanada qiimo- rugeedka ee tirooyinka jajab tobanle.

Boqol	Tobnaad	Koowaad	Barta jajab tobanle	Tabankiiba	Boqolkiiba	Kun kiiba
100	10	1	.	$\dfrac{1}{10}$	$\dfrac{1}{100}$	$\dfrac{1}{1000}$
	1	6	.	3	4	
7	2	3	.	8	6	5

Tusaale ahaan 723.865

- Tobnaadkiiba
- Tobnaadkiiba
- Kunkiiba
- Boqlaadkiiba
- Kowaadkiiba
- Boqlaadkiiba

Tusaale 5: ka shaqee midkasta oo kuwan soo socda ah, adigoo jajab tobanlaha u badalaya jajab.

    b   0.8 + 0.9   **t**   0.241 + 7.658

Furfuris:

    b   ubadal 0.8 iyo 0.9 jajab

$0.8 = \dfrac{8}{10}$ iyo $0.9 = \dfrac{9}{10}$

$0.8 + 0.9 = \dfrac{8}{10} + \dfrac{9}{10} = \dfrac{8 + 9}{10} = \dfrac{17}{10} = 1.7$

Sidaas darteed 0.8 + 0.9 = 1.7

    t   u badal 0.241 iyo 7.658 jajab

$0.241 = \dfrac{241}{1000}$ iyo $7.658 = \dfrac{7658}{1000}$

Markaa $0.241 + 7.658 = \dfrac{241}{1000} + \dfrac{7658}{1000} = \dfrac{241 + 7658}{1000} = 7.899$

Tusaale 6: ka shaqee midkasta oo kuwan soo socda ah , adigoo u badalaya jajab.

    b   4.51 – 2.95   **t**   0.981 – 0.61

Furfuris:

    b   jajab tobanlaha u badal jajab oo kalagoo

$4.51 = \dfrac{451}{100}$ iyo $2.95 = \dfrac{295}{100}$

Markaa $4.51 - 2.95 = \dfrac{451}{100} - \dfrac{295}{100} = \dfrac{451 - 195}{100} = \dfrac{156}{100} = 1.56$

Markaa $4.51 - 2.95 = 1.56$

t   jajab tabanlaha u badal jajab oo kalagoo

$$0.981 = \dfrac{981}{1000} \text{ iyo } 0.61 = \dfrac{610}{1000} = 0.371$$

Markaa $0.981 - 0.610 = \dfrac{981}{1000} - \dfrac{610}{1000} = \dfrac{371}{1000} = 0.371$

Sidaas darteed $0.981 - 0.61 = 0.371$

SHAQO KOOXEEDKA 3.3

Marka aynu ku shaqaynano jajab tobanle waxaad ubaahan tahay inaad ogaato waxa godkasta oo tirada ka mid ahi ay u taagan tahay. U fiirso tirada jajab tobanlaha ah 231.456, koox ahaana ka jawaaba midkastoo su, aalahani soo socda ah.

1   tirada kor ugu dhawaaq oo maqashii kooxdaada.

2   sheeg god rugeedka godkasta oo ka mid ah jajab tobanlaha lagusiiyay

3   iswaydaarsada natiijada kooxda, kooxda kale oo falanqeeya.

LAYLIS 3.8

1   iskugee jajab tobanlaha soo socda;

    b $23.1 + 32.5$ **t** $0.11 + 0.32$ **j** $4.7 + 3.42$

    x $0.528 + 2.4$ **kh** $7.459 + 4.507$ **d** $62.05 + 3.74$

2   Raadi faraqa.

    b $5.1 - 4.4$ **t** $8.59 - 4.64$ **j** $8.701 - 5.815$

3   Guuri (naqil) oo buuxi shaxdan soo socota

	ℓ	m	n	$\ell + m - n$
b	8.1	3.2	5	
t	0.55	4.21		2.54
j	2.1	0.8	1.66	
x		32.5	23.42	61.92
kh	0.4		0.734	4

4   Waa maxay farqiga u dhaxeeya 0.91 iyo 0.20?

5 Markaad tiro ka jarto 30, natiijadu waa 11.25. Waa maxay tiradaasi?

6 Guuri (naqil) oo dhamaystir shaxdan soo socota.

	Jajab tobanle	Qiimo rugeedka tobnaad	Qiima rugeeka kumaad
b	4563.7	3.2	
t	38.95	4.21	2.54
j	503.846	0.8	

7 Rooda waxay iibsatay 20.5kg oo sonkor ah. Waxay siisay 5.35 kg hooyadeed, 9.40 kg waxay siisay walaasheed. imisa kg oo sonkor ah ayaa u soo hadhay?

8 Xamda waxay ku kharash garaysay 48.75 birr, hilib, 24,85 birr caano, 2.35 birr, macmacaan. Muxuu ahaa wadarta kharashkeedu?

9 cabdi culayskiisu waa 75.6 kg, maxamed culayskiisu waa 98.45 kg.

    b waa maxay wadarta culaysyada labada nin?

    t waa maxay farqiga u dhaxeeya culaysyada cabdi iyo maxamed.

10 buuga xisaabaadka ee bangiga ay Faadumo ku leedahay waxaa ugu jira 695.93 birr oo kayd ah. 381.35 birr oo hubin ah, waa maxay wadarta bangiga u taala?

11 walaashay waxay haysataa 4.75 birr, aniguna waxaan haystaa 3.50 birr waa imisa wadarta aanu wada haysanaa?

3.5.2 ISKUDHUFASHADA JAJAB TOBANLE

Jajab tobanlaha waa in la iskudhuftaa si la mid ah sidii tirooyinka idil.

Ciwaan hooseedkan waxaad ku baran doontaa iskudhufashada jajab tobaleyaasha.

Hawlgalka 3.10

1 Si aad u hesho taranta 2×0.3

    b raadi qaabka jajab ee 0.3

    t ku dhufo 2 qaabka jajabka ee 0.3 waa maxay natiijadu?

    j waa maxay jajab tobanlaha taranta (t)?

    x waa maxay xidhiidhka u dhaxeeya taranta qaabka jajab tobanle iyo 2×0.3?

2 si aad u hesho taranta 0.4×0.5.

    b raadi qaabka jajab ee 0.4?

    t raadi qaabka jajab ee 0.5?

    j waa maxay taranta qaabka jajab ee 0.4×0.5?

    x waa maxay natiijada (c) ? Marka qaab jajab tobanle loo qoro.

    kh waa maxay xidhiidhka ka dhaxeeya natiijada qaabka jajab tobanle iyo 0.4×0.5?

Howlgalka 3.10 waxaad ku soo falanqayseen sida la isugu dhufto jajab tobanlaha iyo tiro hal god oo idil ah. Waxaa intaa dheer oo aad barandoontaan in badan oo ah iskudhufashada jajab tobanle.

> **Ogow** Si aad isgu dhufato jajab tobanle waa inaad raacdaa talaabooyinka hoose:
>
> **1**   Iskudhufo jajab tobanlaha sidii tiro idil oo kale adigoon waxba tixgalinayn dhibicda.
>
> **2**   Tiri godadka dhibcaha ee labadaba ku dhuftaha iyo lagu dhuftahaba oo dhig dhibicda taranta dhexdeeda adigoo xaga midig ka soo tirinaya oo u socda xaga bidix.

Tusaale 1: Raadi taranta kuwan soo socda.

>   **b** 5×0.35 **t** 3.4×7 **j** 4.154×2

Furfuris:

b
$$\begin{array}{r} 0.35 \\ \times\ \ 5 \\ \hline 1.75 \end{array}$$
godadka dhibcaha leh ee xaga midig.

1.75   tiri tiro isku mid ah oo godad ah ee taranta.

t
$$\begin{array}{r} 3.4 \\ \times 7 \\ \hline 23.8 \end{array}$$
halgod oo xagga midig dhibicda ka xigga.

23.8 tiri tiro isku mid ah oo godad ah ee taranta.

j
$$\begin{array}{r} 4.154 \\ \times\ \ 2 \\ \hline 8.308 \end{array}$$

> **Ogow** Kudhufo jajab tobanlaha 10, oo jibbaarka 10 ayaa lagu samayn karaa hab gaaban iyada oo barta dhibicda laga soo rarayo xagga bidix ilaa xagga midig hadba intii tiro eber wadata oo lagu dhufto.

Tusaale 2:   Raadi taranta midkasta;

>   **b** 3.05×10 **t** 2.81×100 **j** 1.234×1000

Furfuris: **b** $3.05 \times 10 = 30.5$ ---- hal god ayay dhibicdu guurtay.

>   **t** $2.81 \times 100 = 281$ ---- 2 god ayay dhibicdu guurtay.

>   **j** $1.234 \times 1000 = 1234$ ---- 3 god ayay dhibicdu guurtay.

Iskudhufashada jajab tobanlahu wuxuu u baahan yahay talaabooyinka soo socda.

1 isugu dhufo jajabtoban laha sida tiro idil oo kale .

2 tiri godadka xagga midig ka xiga dhibicda ee lagudhuftaha iyo ku dhuftaha.

3 tiri tiro isku mid ah ee godadka xagga midig ilaa xagga bidix ee taranta

Tusaale 3: iskudhufo jajabtobanlahan soo socda .

b 0.6×0.9 **t** 1.2×3.5

$$\begin{array}{r} 0.6 \\ \times\, 0.9 \\ \hline 0.54 \end{array}$$

Furfuris: **b** $\dfrac{\times\, 0.9}{0.54}$ laba godbaa xagga midig ka xiga

laba godbaa xagga midig ka xiga dhibicda ee taranta .

Tusaale 4: haddii qiimaha hal buug uu yahay 4.25 birr, waa imisa qiimaha 9 buug?

Furfuris: 1 buug qiimihiisu waa 4.25?

9 buug qiimahoodu waa = $4.25 \times 9 = 38.25$ bir

LAYLIS 3.9

1 qor wadarta jajab tobanlaha 3.51 + 3.51+ 3.51 sidii taranta.

2 jalxad ayaa waxaa ku jira 20.05 litir oo biyo ah.Imisa litir oo biyo ah ayay qaadi karaan toban jalxadood oo ay isku mug yihiin tani?

3 raadi taranta jajab tobanlaha, soo socda;

b 2×0.25 **t** 0.115×4 **j** 1.5×8

x 1.8×3.2 **kh** 1.13×3.4

4 raadi taranta;

b 3.42×10 **t** 8.88×100 **j** 34.2×1000

x 0.1×3 **kh** 0.01×2.1

5 guuri (naqil) oo dhamaystir shaxdan soo socota ;

	e	f	e × f
b	2.5	3	
t	7.4	10	
j	9.21	100	
x	0.981	1000	

6 qiimaha halkii mitir ee waaraadka ah waa 23.50 birr waa imisa qiimaha 10 mitir oo la nooc ah taasi?

3.5.3 Iskuqaybinta jajab tobanlaha

Ciwaan hoosaadkan waxaad ku baran doontaa jajab tobanle fufud iyo halgod oo tiro tirsiimo ah, iskuqaybinta halgod oo tiro tirsiimo ah iyo jajab tobanle fudud iyo iskuqaybinta jajab tobanlaha ilaa 3 dhibcood oo jibbaarada 10.

Hawlgalka 3.11

1   raadi qaybta midkastoo kuwan soo socda ah.

   b $\dfrac{4}{0.5}$ **t** $\dfrac{0.6}{3}$ **j** $\dfrac{6.44}{14}$

2   raadi qaybta;

   b $\dfrac{7.5}{10}$ **t** $\dfrac{71.5}{100}$ **j** $\dfrac{71.5}{1000}$

3   tax tallaabooyinka iskuqaybinta jajab tobanlaha.

Hawlgalkaasi sare waxaad ku soo falanqayseen iskuqaybinta jajabtobanle fudud iyo halgod oo tiro tirsiimo ah iyo iskuqaybinta jajabtobanle loo qaybshay jibbaarka toban. Waxaa intaasi sii dheer oo aad barandoontaa waxyaabo badan oo ku saabsan iskuqaybinta jajab tobanlaha.

> Ogow
>
> Tallaabooyinka iskuqaybinta jajabtobanlaha marka ugu horeysa u badal qaybiyaha tiro idil, adigoo kudhufanaya qaybiyaha iyo laqaybiyaha 10 ama jibbaarka toban.
>
> **1**   U dhig barta dhibicda ee qaybta dhexdeeda si toos ah, xaga toos uga sareysa barta la qaybiyaha.
>
> **2**   Haddii aanay tiro idil ku jirin laqaybiyaha, dhig eber xaga sare ee qaybta oo sidaasi usiiwad hanaanka ilaa aad ka gaadhsiiso ama aad dhigto saddex god dhibicda dabadeed.

Tusaale 1: raadi qaybta midkastoo kuwan soo socda ah :

   b $\dfrac{3}{0.6}$ **t** $\dfrac{0.8}{4}$ **j** $\dfrac{0.48}{0.4}$

Furfuris: **b** $\dfrac{3}{0.6} = \dfrac{3}{0.6} \times \dfrac{10}{10} = \dfrac{30}{6} = 5$

Sidaas darteed $\dfrac{3}{0.6} = 5$, hubin $0.6 \times 5 = 3$.

t $\dfrac{0.8}{4} = \dfrac{0.8}{4} \times \dfrac{10}{10} = \dfrac{8}{40} = \dfrac{4 \times 2}{4 \times 10} = \dfrac{2}{10} = 0.2$

Sidaas darteed $\dfrac{0.8}{4} = 0.2$.   Hubin , $0.2 \times 4 = 0.8$.

j $\quad \dfrac{0.48}{0.4} = \dfrac{0.48}{0.4} \times \dfrac{100}{100} = \dfrac{48}{40} = \dfrac{4 \times 12}{4 \times 10} = \dfrac{12}{10} = 1.2$
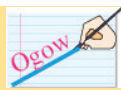
Sidaas darteed $\dfrac{0.48}{0.4} = 1.2$

Tusaale 2: isku qaybi midkasta oo jajabtobanlaha ah

b $\quad \dfrac{0.4}{10} \qquad$ **t** $\quad \dfrac{12.8}{100}$

Furfuris:

b $\quad \dfrac{0.4}{10} = 0.04$, halgod dhibicda u rar xagga bidix.

t $\quad \dfrac{12.8}{100} = \dfrac{12.8}{100} = 0.128$, halgod dhibicda u rar xagga bidix.

Ogow   Si aad ugu qaybiso jajabtobanle 10,000 ama 1000 xagga bidix dhibicda u rar hadba inta eber ee aad haysato.

LAYLIS 3.10

1 raadi qaybta

b $\quad \dfrac{2}{0.8} \qquad\qquad$ **t** $\quad \dfrac{0.27}{3} \qquad\qquad$ **j** $\quad \dfrac{8}{6.4}$

2 raadi qaybta midkasta oo ka mid ah kuwan soo socda ;

b $\quad \dfrac{0.125}{0.5} \qquad$ **t** $\quad \dfrac{3.04}{0.8} \qquad$ **j** $\quad \dfrac{3}{0.5}$

x $\quad \dfrac{0.7}{0.35} \qquad$ **kh** $\quad \dfrac{4}{0.25} \qquad$ **d** $\quad \dfrac{6}{1.5}$

3 guuri (naqil) oo dhammaystir shaxdan soo socota.

	d	2.3		1.11	0.8	
b	10d					13.2
t	100d					
j	1000d		420			

4 Khadar waxaa uu iibsaday 5.5 kg oo tamaandho ah lacag dhan 55.00 birr, waa imisa qiima halkii kg ee tamaandhada ahi?

5 raadi qaybkasta.

b $\quad 0.21 \div 10 \qquad$ **t** $\quad 10.4 \div 100 \qquad$ **j** $\quad 0.178 \div 1000$

6 aniga iyo saaxiibkay waxaan shalay xoogsanay 30.5 birr, maantana 25.40 birr, lacagtii si isleeg ayaan uqaybsanay. Imisa ayaan helay?

Erayada Furaha ah

- Badalida boqolayda
- Badalida jajabka
- boqolay
- dhufsana yaraha ay wadaagaan
- Farqi
- Hoose
- Hooseeyaha isku midka ah
- Isbarbardhig
- iskudhufashada jajabka

- iskugaynta jajabyada
- Iskuqaybinta jajabka
- jajab
- jajab maqumane iyo tiro dhafan
- Jajab tobanle
- Jajabyada iskudhigma
- Kalagoynta jajabka
- ku dhufte
- lagudhufte

- Laqaybiye
- qayb
- rogaal
- sareeye
- siiyarayn
- taran
- Uqaybsame
- wadar

Soo koobida cutubka 3

✓ jajabku waa qayb ka mid ah wax idil

✓ jajabka quman waa jajabka sareeyuhu uu ka yar yahay hooseeyaha.

✓ jajab maqumanuhu waa jajabka uu sareeyuhu ka wayn yahay ama leeg yahay hooseeyaha.

✓ tiro dhafan waa abyoone uu lasocdo jajab quman.

✓ sareeyuhu waa tirada sare ee jajabka hooseeyuhuna waa tirada hoose ee jajabka.

✓ rogaalka jajabku waa jajabka oo la kala wareejiyo.

✓ qiimaha jajabku ismabadalayo haddii sareeyaha iyo hooseeyahaba lagu dhufto tiro isku mid ah oo aan eber ahayn, jajabyada noocaas ah waxaa la yidhaa jajabyada iskudhigma

✓ haddii a,b iyo c yihiin tirooyin idil. Halkaas oo $b < c$, $a \times \dfrac{b}{c} = (c \times a) \times \dfrac{b}{c}$.

✓ boqolaydu waa qaybta ka mid ah wax idil oo loo qaybshay 100 qaybood oo isleeg.

✓ haddii aad rabto inaad isbarbardhigto laba ama wax ka badan oo jajabyo ah, midkasta waxaad u badashaa jajabyo isku dhigma oo leh hooseeye iskumid ah , markaa jajabka wayni wa midka leh sareeyaha ugu wayn.

✓ haddii $\dfrac{a}{b}$, ay tahay tiro aan eber ahayn, markaa $\dfrac{a}{b}$ waa rogaalka $\dfrac{b}{a}$ oo $\dfrac{b}{a}$ waa rogaalka $\dfrac{a}{b}$.

✓ dhamaan jajabyada togan $\dfrac{a}{b}$ iyo $\dfrac{c}{b}$, markaa kuwan soo socda waa run.

b $\dfrac{a}{b} + \dfrac{c}{b} = \dfrac{a+c}{b}$ **t** $\dfrac{a}{b} - \dfrac{c}{b} = \dfrac{a-c}{b}$

j $\dfrac{a}{b} + \dfrac{c}{d} = \dfrac{ad + bc}{bd}$

x $\dfrac{a}{b} - \dfrac{c}{d} = \dfrac{ad - bc}{bd}$ halkaas oo ad > bc.

✓ dhamaan jajabyada toga nee $\dfrac{a}{b}$ iyo $\dfrac{c}{b}$, markaa kuwan soo socda waa run.

b $\dfrac{a}{b} \times \dfrac{c}{d} = \dfrac{ac}{bd}$ **t** $\dfrac{a}{b} \div \dfrac{c}{d} = \dfrac{a}{b} \times \dfrac{d}{c} = \dfrac{ad}{bc}$

✓ iskugaynta iyo kalagoynta jajab tobanlaha waxaa looga shaqeyn karaa:

b   isku hoos qorida jajabyada iyadoo toos la isugu aadinayo barta dhibcaha ee jajabka ee mid kasta ama .

t   ubadalida jajabtobanlaha jajab oo markaana la isku daro ama la kalagooyo oo ugu danbayn tana natiijada loo badalo jajab tobanle.

Laylis guud

1   Kuwan soo socda kuweebaa ah jajab qumman ?

b $\dfrac{5}{6}$ **t** $\dfrac{24}{11}$ **j** $\dfrac{71}{100}$ **x** $\dfrac{25}{14}$ **kh** $\dfrac{92}{47}$

2   Kuwee baa ah jajab maqumane su, aasha (1) ?

3   Fududee midkasta oo jajabyadan soo socda ah

b $\dfrac{34}{51}$ **t** $\dfrac{19}{57}$ **j** $\dfrac{46}{50}$ **x** $\dfrac{75}{100}$ **kh** $\dfrac{88}{33}$

4   Ubadal jajabyadan soo socda tiro dhafan.

b $\dfrac{5}{3}$ **t** $\dfrac{23}{5}$ **j** $\dfrac{18}{7}$ **x** $\dfrac{31}{9}$ **kh** $\dfrac{892}{9}$
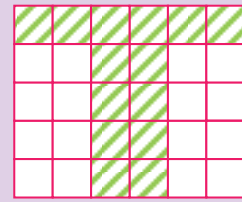
5   Raadi laba jajab oo u dhigma midkastoo kuwan soo socda ah.

b $\dfrac{3}{2}$ **t** $\dfrac{8}{7}$ **j** $\dfrac{19}{4}$ **x** $\dfrac{9}{10}$ **kh** $\dfrac{69}{31}$

6   Tixraac shaxanka 3.22 oo ka jawaab su, aalahan soo socda.

   b   waa maxay boqolkiiba inta la hadheeyay shaxanka ?

   t   waa maxay qaybta aan lahadhayn ee shaxanku ?

<div align="right">Shaxanka 3.22</div>

7   Raadi wadarta

   b $\dfrac{3}{7} + \dfrac{5}{7}$ **t** $\dfrac{4}{9} + \dfrac{7}{9}$ **j** $\dfrac{5}{6} + \dfrac{3}{8}$ **x** $\dfrac{3}{4} + \dfrac{2}{25}$

   kh $\dfrac{3}{10} + \dfrac{4}{7}$ **d** $\dfrac{3}{8} + \dfrac{4}{7}$ **r** $\dfrac{11}{42} + \dfrac{14}{60}$ **s** $\dfrac{3}{133} + \dfrac{4}{95}$

8   Kalagoo midkastoo kuwan soo socda ah .

   b $\dfrac{8}{7} - \dfrac{7}{11}$ **t** $\dfrac{7}{9} - \dfrac{3}{4}$ **j** $\dfrac{8}{5} - \dfrac{3}{7}$

   x $\dfrac{3}{10} - \dfrac{5}{40}$ **kh** $\dfrac{11}{21} - \dfrac{3}{14}$

9   Raadi rogaalka midkastoo kuwan soo socda ah.hadii ay suurtogal tahay.

   b $\dfrac{4}{13}$ **t** $\dfrac{8}{41}$ **j** $\dfrac{99}{100}$ **x** $\dfrac{1}{22}$ **kh** 1 **d** $\dfrac{0}{2}$

10   Guuri (naqil) oo buuxi shaxdan soo socota.

	Taranta	Jajabyo		qayb
	$\ell \times m$	ℓ	m	$\ell \div m$
b		$\dfrac{7}{8}$	$\dfrac{5}{6}$	
t		$\dfrac{5}{9}$	$\dfrac{10}{11}$	
j		$\dfrac{3}{40}$	$\dfrac{5}{8}$	
x		$\dfrac{11}{13}$	$\dfrac{17}{22}$	

11   U qor kuwan habka siiyaraanshaha

   b $\dfrac{1}{3}, \dfrac{2}{9}, \dfrac{5}{12}$ **t** $\dfrac{3}{11}, 1, \dfrac{2}{13}, \dfrac{1}{5}$

12 Weedhahan soo socda kuweebaa run ah? Kuwee baa been ah?

b rogaalka $\dfrac{2}{3}$ waa $\dfrac{12}{8}$.

t $\dfrac{2}{0}$ waa jajab

j $\dfrac{3}{11}$ way ka wayn tahay $\dfrac{3}{12}$

x $\dfrac{8}{7}$ waa jajab qumman.

13 Raadi taranta

b $\dfrac{2}{3} \times \dfrac{6}{4}$

t $\dfrac{24}{35} \times \dfrac{7}{6}$

j $\dfrac{105}{39} \times \dfrac{13}{7}$

x $5\dfrac{2}{3} \times 4\dfrac{3}{5}$

kh $2\dfrac{1}{3} \times 2\dfrac{1}{2}$

d $3\dfrac{3}{4} \times 2\dfrac{5}{6}$

14 Raadi qaybta midkastoo kuwan soo socda ah.

b $\dfrac{5}{9} \div \dfrac{4}{3}$
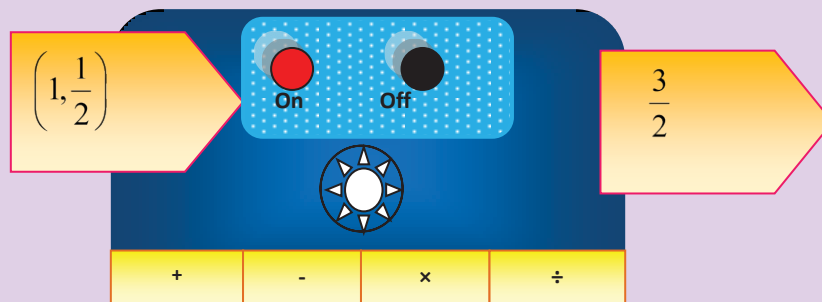
t $\dfrac{13}{2} \div \dfrac{8}{3}$

j $\dfrac{15}{11} \div \dfrac{20}{33}$

x $4\dfrac{1}{5} \div 5\dfrac{3}{8}$

kh $2\dfrac{1}{3} \div 1\dfrac{1}{2}$

d $3\dfrac{1}{6} \div 2\dfrac{3}{4}$

15 Adeega mishiinka furfurista masalooyinka ee shaxanka 3.23, si aad ugu badasho labadan tiro ee soo socda ee lammaanaha ah, wadarta, farqiyo, tarano iyo qaybo. Ogow markaa wareeg sameeyaha waa la badalayaa jog u tax kasta.

Shaxanka 3.23

16 Ka shaqee kuwan soo socda oo fududee,

b $1.78 + 4.7$

t $6.14 + \dfrac{15}{92}$

j $1.304 + 12.457$

x $6.4 - 3.9$

kh $9.71 - 2.84$

d $14.361 - 5.015$

r 2.3×0.6

s 3.21×1.1

sh $0,315 \times 4.2$

dh $\dfrac{6}{0.5}$

c $\dfrac{60.48}{1.2}$

g $\dfrac{0.072}{0.36}$

17   Qiimaha hal ukun ah waa 1.40 birr, waa imisa qiimaha 17 xabo oo ukun ah?

18   Haddii qiimaha toban digaagadood ay yihiin 526.50 birr, waa imisa qiimaha halkii digaag?

19   Culayska Aadan waa 68.5kg, culayska Daa, uudna waa 72.75kg, waa imisa wadarta culaysyadoodu ?

20   Kharashka tukaamaysiga ee bilaha ah ee Aamina ayaa lagu taxay shaxdan hoose. Tixraac shaxda oo ka jawaab su, aalahan soo socda.

Noocyada tukaamaysinga	Sonkor	Saabuun	Bun	Cusbo
Qiimaha	28.50	24.75	27.50	5.10

b   waa maxay wadarta kharashka ee tukaamaysiga Aamina ?

t   waa maxay farqiga u dhaxeeya kharashka ugu badan iyo kharashka ugu yar ee alaabaha?

21   Waa in tiradee lagu dhuftaa tani 2.45, si loo helo 245?

22   Waa imisa haddii 27.6 loo qaybiyo 10? 100?