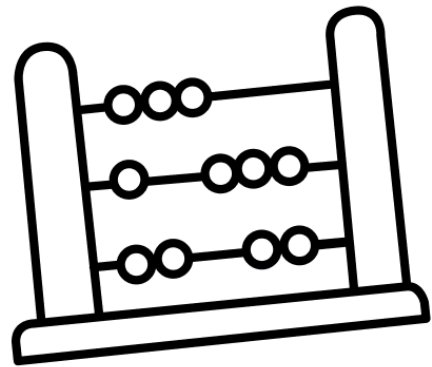


Isticmaalka jaantuska Venn si loo muujiyo natiijooyinka in ka badan laba dhacdo

Maths

Cutub: Itimaalka (Probability): natiijooyinka suurtagalka ah



Natiijo

Waxaan si nidaamsan u heli karaa dhammaan natiijooyinka suurtagalka ah ee in ka badan laba dhacdo adigoo isticmaalaya jaantuska Venn.

Erayada muhiimka ah

Jaantusyada Venn waa matalaad loo isticmaalo in lagu qaabeeyo su'aalaha tirakoobka/itimaalka. Caadi ahaan goobo ayaa loo isticmaalaa in lagu matalo dhacdooyinka.

Isticmaalka jaantuska Venn si loo muujiyo natiijooyinka
in ka badan laba dhacdo



Jaantusyada Venn



Natiijooyinka ka yimaada jaantuska Venn

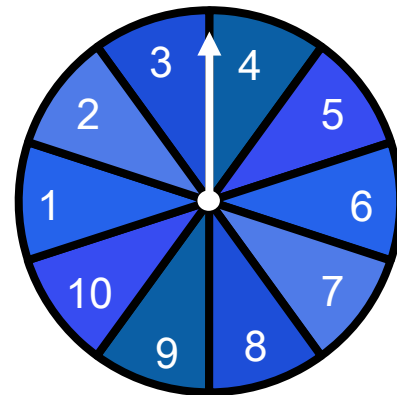
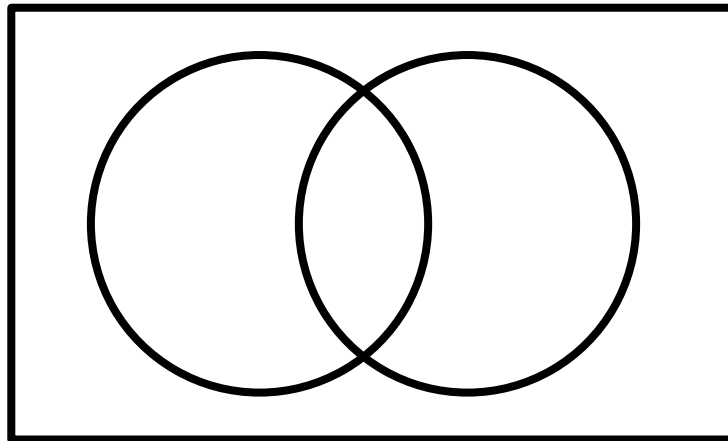
Marka wareejintan la wareejiyo natiijooyinka waa {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}, waxaan ugu yeernaa booska muunadda (sample space).

Natiijooyinka waxaa lagu kala saari karaa jaantuska Venn ee laba dhacdo.

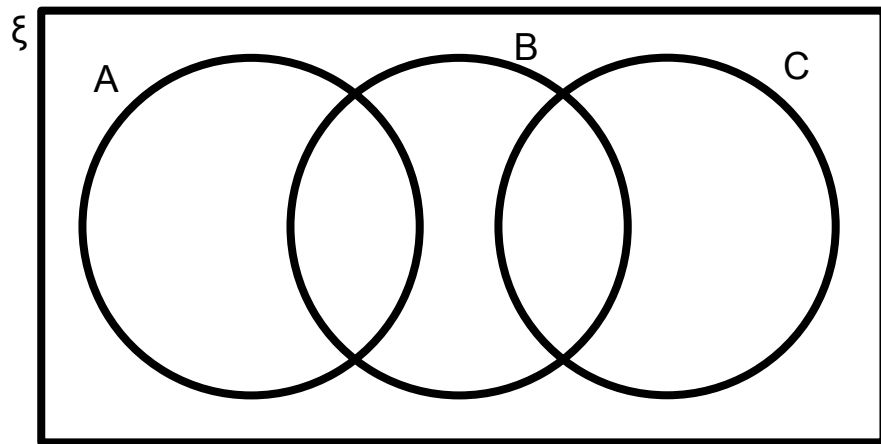
Tusaale: Dhacdo A = {nambar togan (even number)}

Dhacdo B = {qaybiyaha 20 (factor of 20)}

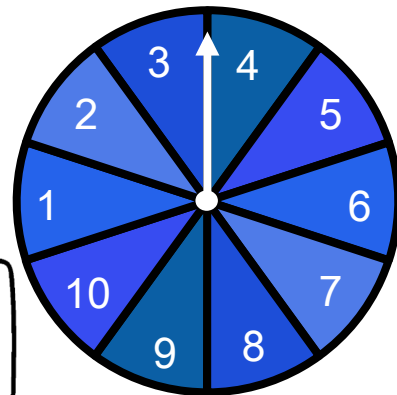
Haddii dhacdo saddexaad {nambar labajibbaaran (square number)} lagu daro, ma jirtaa hab lagu muujiyo jaantuska Venn?



Haddii dhacdo $A = \{\text{nambar togan}\}$, dhacdo $B = \{\text{qaybiyaha 20}\}$ iyo dhacdo $C = \{\text{nambar labajibbaaran}\}$.



Waxaa laga yaabaa in qaabka jaantuska Venn uu noqdo sidan, kaliya goobo dheeri ah.



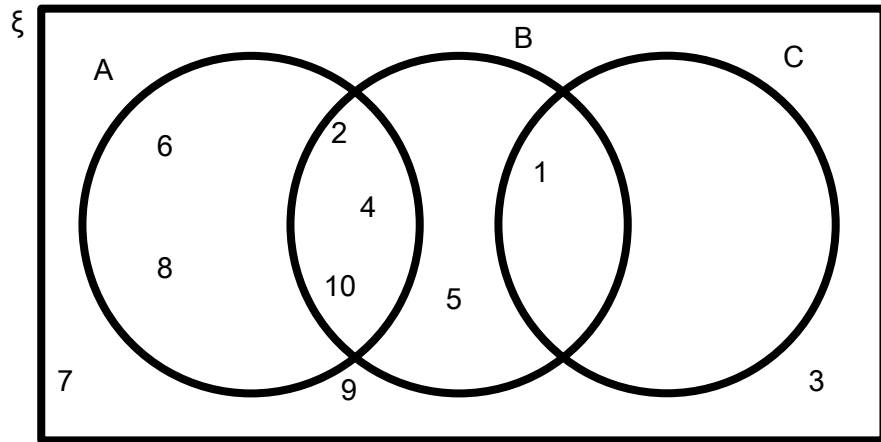
Ma dhacdo kastaa waxay leedahay natiijooyinka saxda ah?

Maya, $\{4\}$ waa nambar labajibbaaran sidoo kale waa togan iyo qaybiyaha 20.

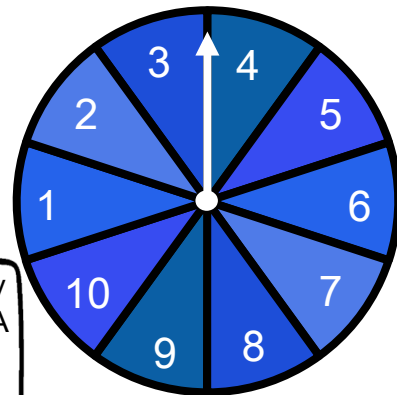


Isra

Haddii dhacdo $A = \{\text{nambar togan}\}$, dhacdo $B = \{\text{qaybiyaha 20}\}$ iyo dhacdo $C = \{\text{nambar labajibbaaran}\}$.



Marka, dhacdada (event) C waa inay isgoysaa (intersect) labada dhacdo A iyo B. Ma jirtaa qaab loo sameeyo?



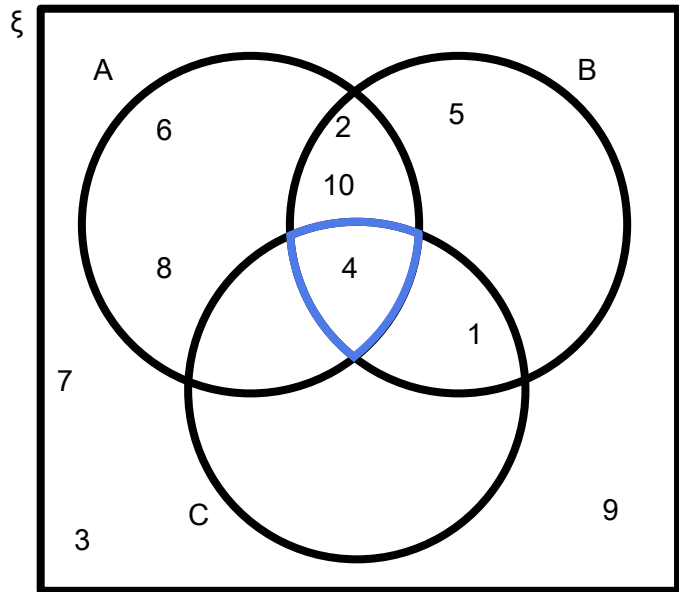
Dhacdo kasta ma leedahay natiijooyinka (outcomes) saxda ah?

Maya, $\{4\}$ waa tiro labajibbaaran (square number) sidoo kalena waa xitaa (even) iyo qaybiye (factor) 20.



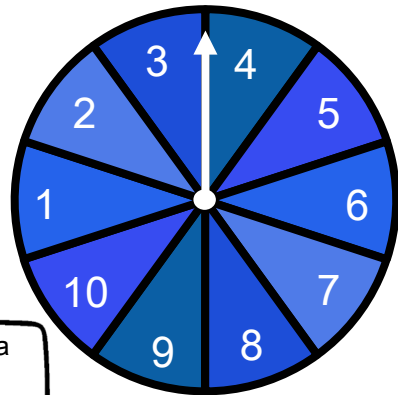
Isra

Haddii dhacdada A = {tiro xitaa}, dhacdada B = {qaybiye 20} iyo dhacdada C = {tiro labajibbaaran}.



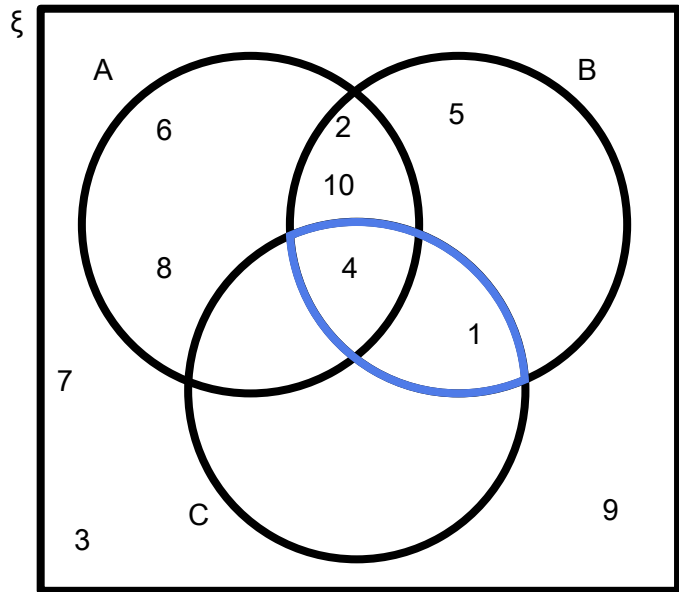
Natiijada {4} hadda waxay ku jirtaa isgoyska (intersection) dhammaan saddexda dhacdo.

Qaabdhismeedkani wuxuu u muuqdaa mid shaqeeya. Dhacdo kasta waxay isgoysaa dhacdo kasta oo kale.

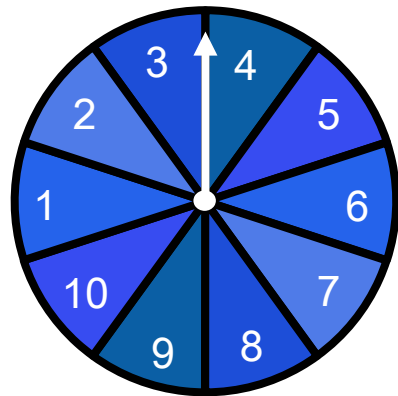


Isra

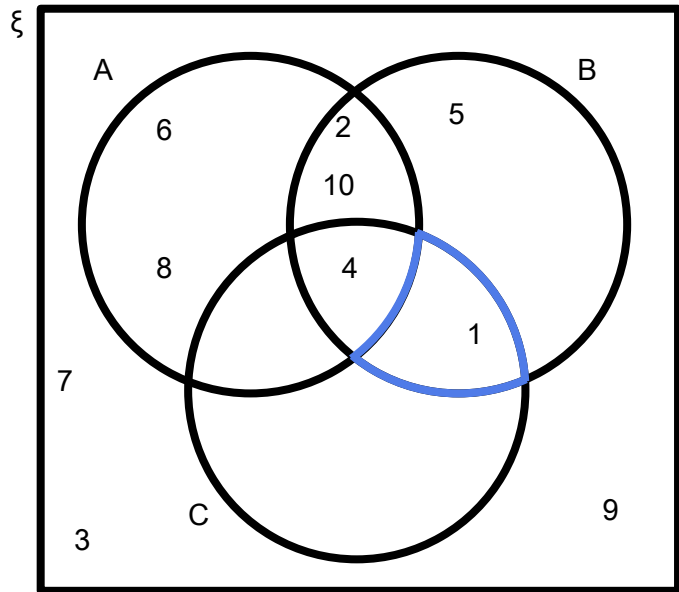
Haddii dhacdada A = {tiro xitaa}, dhacdada B = {qaybiye 20} iyo dhacdada C = {tiro labajibbaaran}.



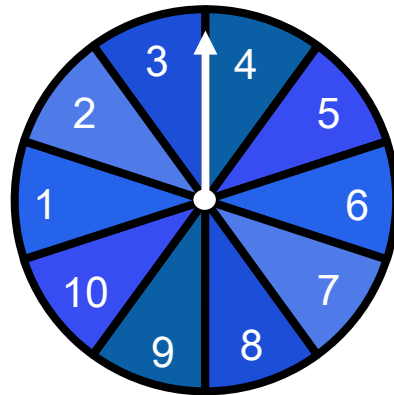
Isgoyskani wuxuu u yaal natiijooyinka dhacdada B iyo dhacdada C. Qaybiyeyasha 20 ee sidoo kale ah tirooyin labajibbaaran.



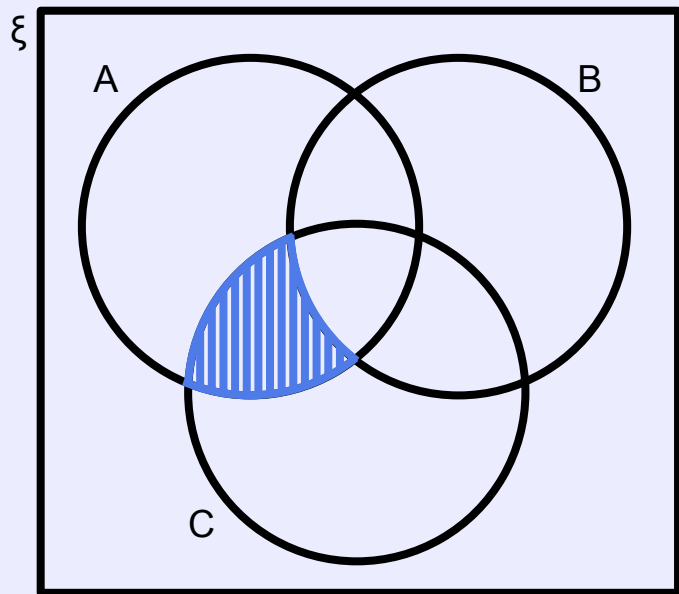
Haddii dhacdada A = {tiro xitaa}, dhacdada B = {qaybiye 20} iyo dhacdada C = {tiro labajibbaaran}.



Isgoyskani wuxuu u yaal natiijooyinka dhacdada B iyo dhacdada C laakiin kuma jiraan dhacdada A. Qaybiyeyasha 20 ee sidoo kale ah tirooyin labajibbaaran laakiin aan xitaa ahayn.

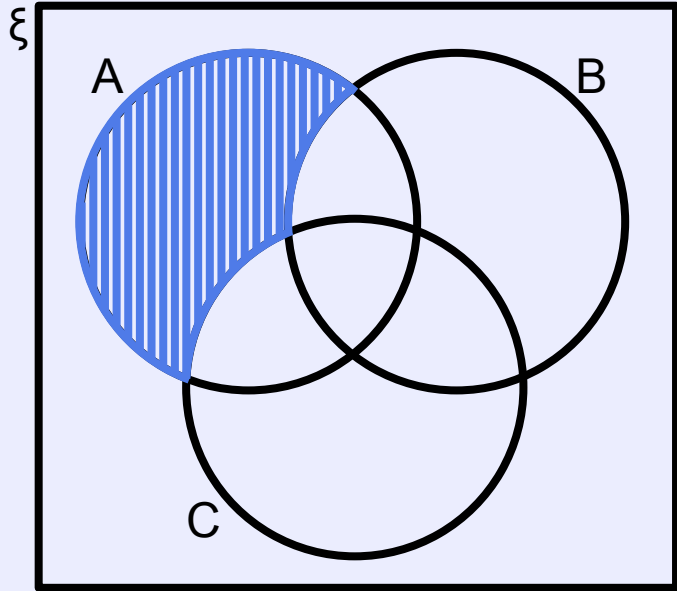


Maxay ka dhigan tahay qaybta hooska leh (shaded section) ee jaantuska Venn?



Natiijooyinka ku jira dhacdada A iyo dhacdada C laakiin kuma jiraan dhacdada B.

Maxay ka dhigan tahay qaybta hooska leh ee jaantuska Venn?



Natiijooyinka kaliya ku jira dhacdada A.

Jaantuskan Venn wuxuu matalaa arday qaar.

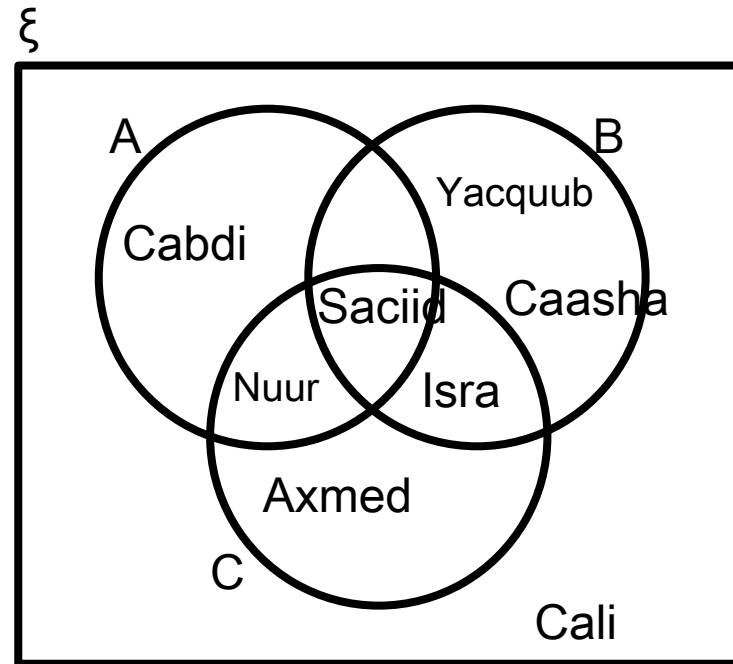
$A = \{\text{booqday Spain}\}$

$B = \{\text{booqday France}\}$

$C = \{\text{booqday America}\}$

Waxaan ka arki karnaa jaantuska Venn

- in 8 arday la matalay
- in 1 arday uusan booqan Spain, France iyo America midna
- in 4 arday booqdeen America
- in 2 arday booqdeen France iyo America labadaba



Jaantusyada Venn

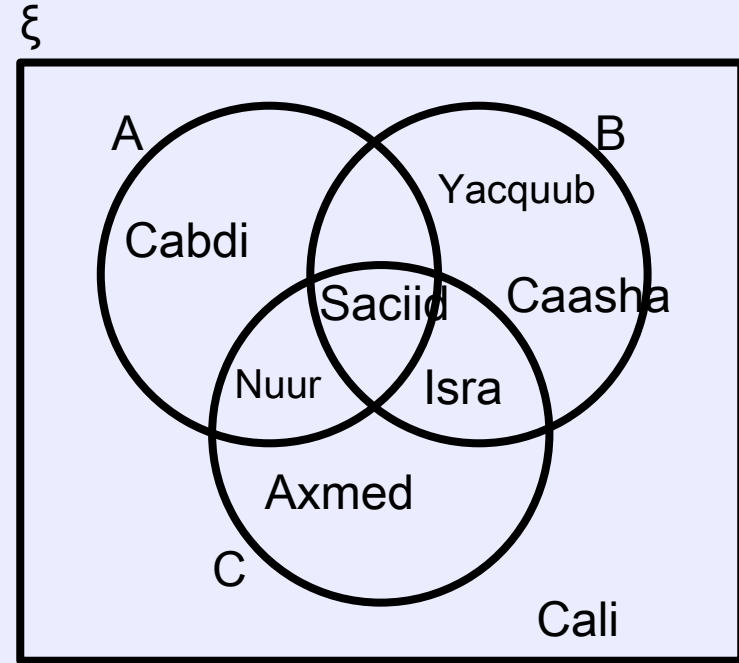
Jaantuskan Venn wuxuu matalaa arday qaar.

A = {booqday Spain}

B = {booqday France}

C = {booqday America}

Yaa booqday Spain?



Jaantusyada Venn (Venn diagrams)

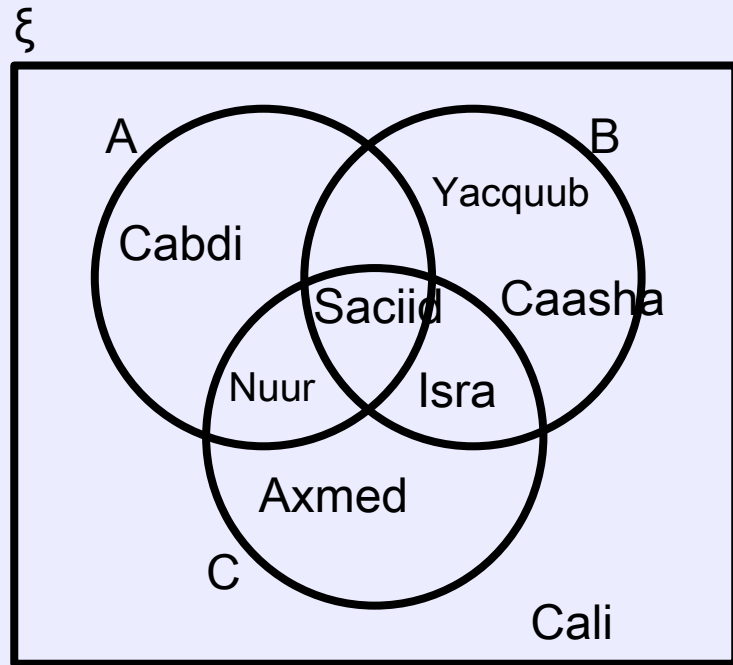
Jaantuskan Venn wuxuu muujinayaa arday qaar.

A = {booqday Spain}

B = {booqday France}

C = {booqday America}

Yaa booqday Spain, France iyo America?



Jaantusyada Venn (Venn diagrams)

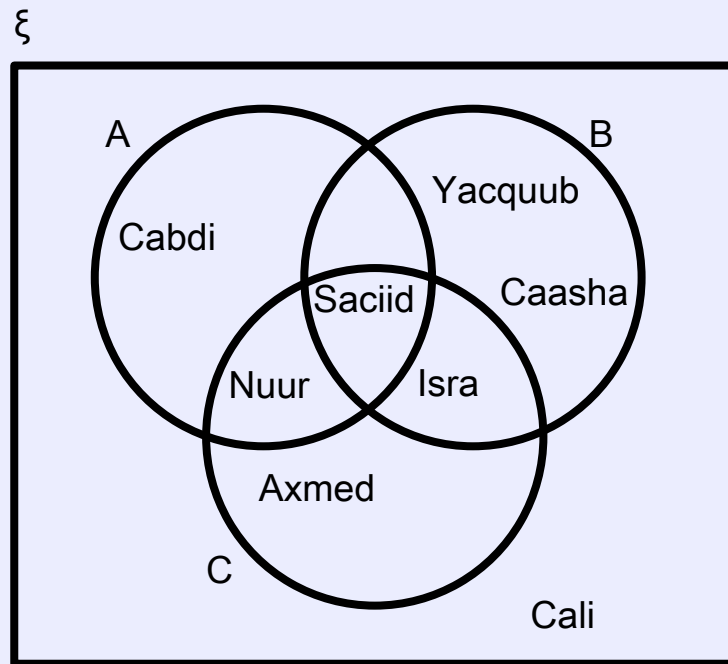
Jaantuskan Venn wuxuu muujinayaa arday qaar.

$A = \{\text{booqday Isbayn (Spain)}\}$

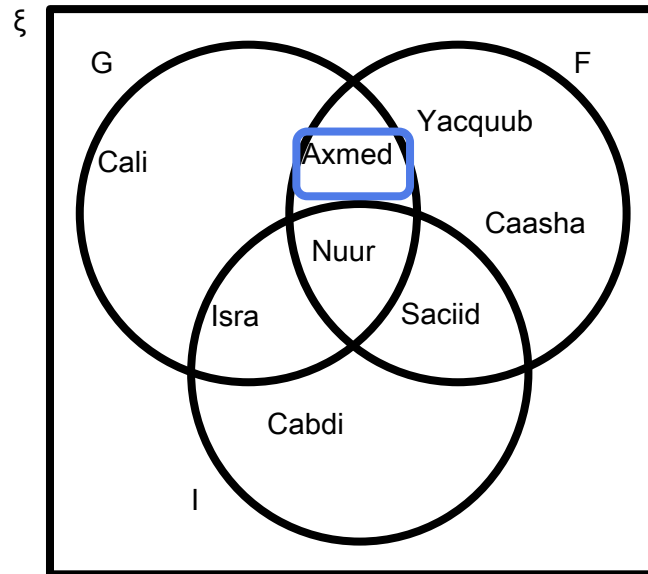
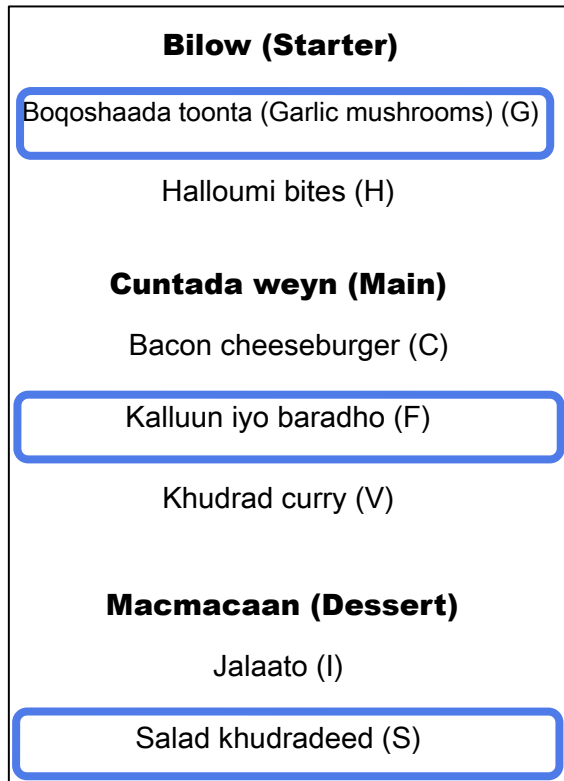
$B = \{\text{booqday Faransiiska (France)}\}$

$C = \{\text{booqday Ameerika (America)}\}$

Yaa kaliya booqday Faransiiska?



Jaantuska Venn wuxuu muujinayaa xulashooyinka menu ee 8 arday.



Waan ognahay saddexda cunto (courses) oo loo doortay qaar ka mid ah ardayda.

Jaantusyada Venn (Venn diagrams)

Jaantuska Venn wuxuu muujinayaa xulashooyinka cuntada ee 8 arday.

Bilowga cuntada

Garlic mushrooms (G)

Halloumi bites (H)

Cuntada weyn (Main)

Bacon cheeseburger (C)

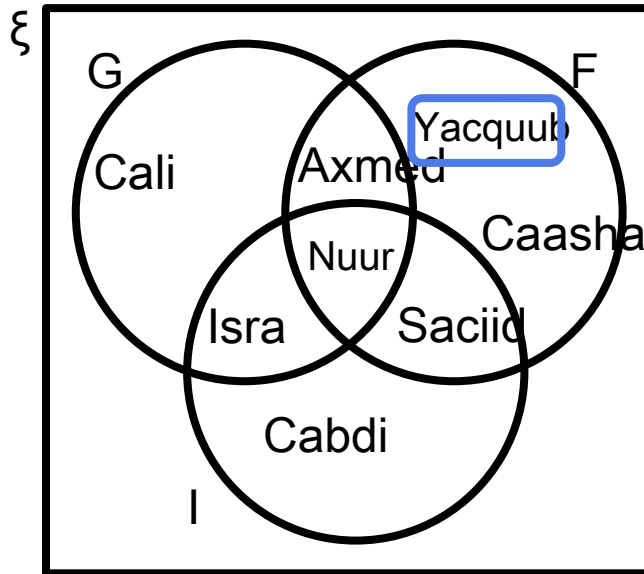
Kalluun iyo chips (F)

Curry khudrad (V)

Macmacaan

Jalaato (I)

Salad khudrad (S)



Waan ognahay saddexda cunto ee loo doortay qaar ka mid ah ardayda.

Jaantusyada Venn (Venn diagrams)

Jaantuska Venn wuxuu muujinayaa doorashada cuntada ee 8 arday.

Bilow (Starter)

Garlic mushrooms (G)

Halloumi bites (H)

Cuntada weyn

Bacon cheeseburger (C)

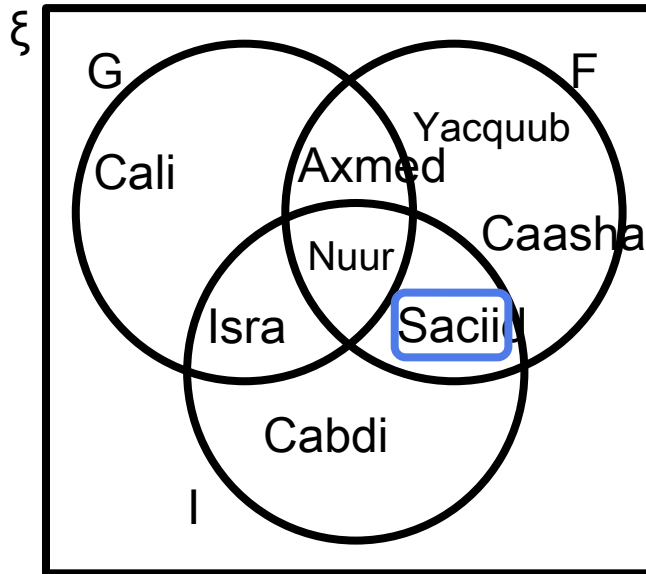
Kalluun iyo chips (F)

Vegetable curry (V)

Macmacaan (Dessert)

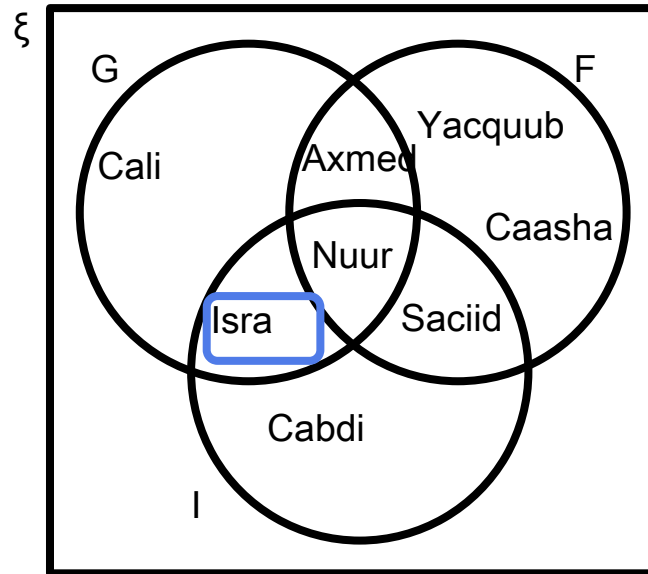
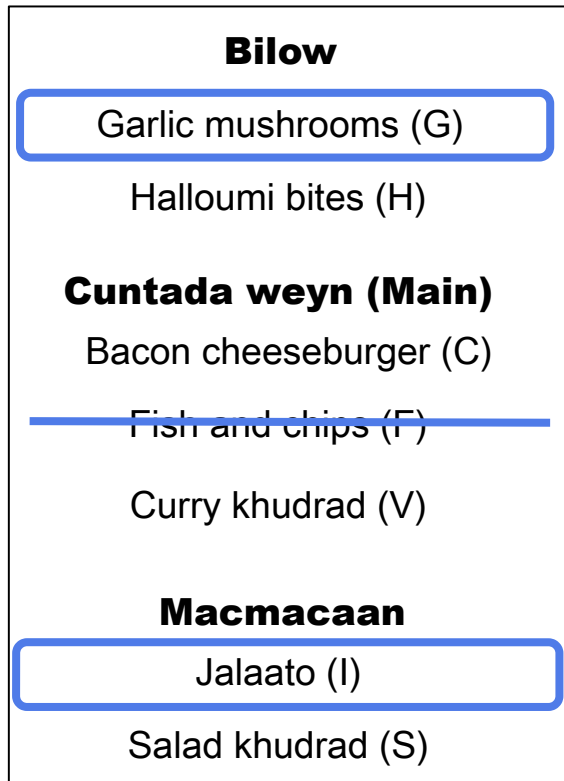
Ice Cream (I)

Fruit Salad (S)



Waan ognahay saddexda cunto (courses) oo loo doortay qaar ka mid ah ardayda.

Jaantuska Venn (Venn diagram) wuxuu muujinayaa xulashooyinka cuntada (menu) ee 8 arday.



Halka kuwa kalena aynaan u garanayn saddexda cunto.

Jaantuska Venn wuxuu muujinayaa xulashooyinka liiska cuntada ee 8 arday.

Bilow (Starter)

Mushroom toon (G)

Qaniinyada Halloumi (H)

Cuntada weyn

Bacon cheeseburger (C)

Kalluun iyo chips (F)

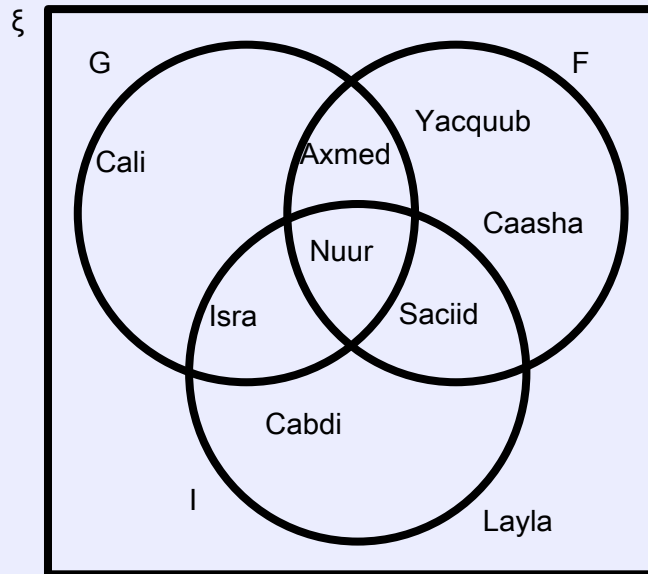
Curry khudrad (V)

Macmacaan (Dessert)

Jalaato (Ice Cream) (I)

Salad Khudrad (Fruit Salad) (S)

Layla hadda way u soo socotaa cuntada. Waxay dalbanaysaa halloumi, curry khudrad iyo salad khudrad. Ku dar jaantuska Venn.



1) Wareeg (spinner) ayaa leh natiijooyinka suurtagalka ah {3, 5, 6, 8, 10, 12, 15, 18, 20, 25}.

Dhacdada A = {tirooyin kisi (odd numbers)}, dhacdada B = {tiro qaybiyeyasha 30 (factors of 30)} iyo dhacdada C = {tirooyin dhufsane 3 (multiples of 3)}.

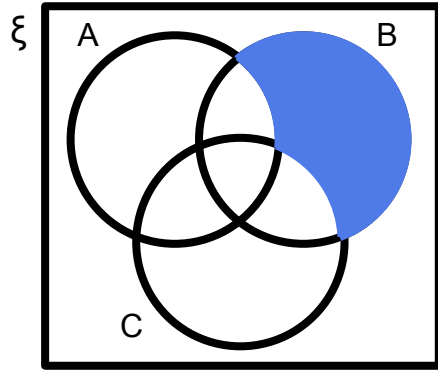
Sawir jaantus Venn oo muujinaya macluumaadkan.

2) Waxaa jira 20 kaad oo ciyaar ah. Kaad kasta waa midab cas (R) ama madow (B) iyo lambar 1 ilaa 10. Tusaale, R3 waa kaad cas lambar 3.

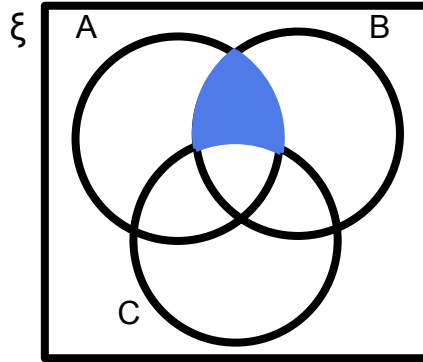
Dhacdada A = {kaad madow (black cards)}, dhacdada B = {lambar siman (even number)} iyo dhacdada C = {tiro qaybiye 10 (factor of 10)}.

Sawir jaantus Venn oo muujinaya macluumaadkan.

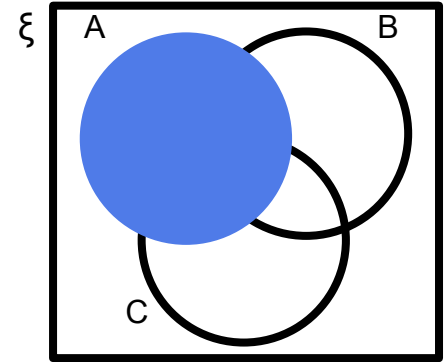
3) Ku xidh weedhaha meelaha hadhka leh.



natiiyooyinka dhacdada A



natiiyooyinka dhacdada B kaliya

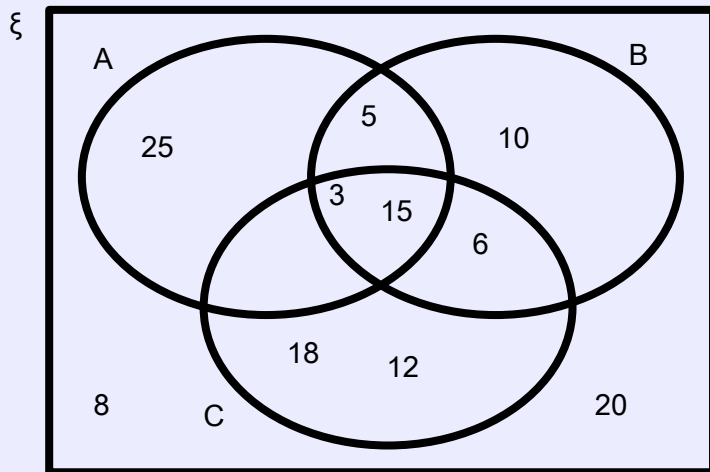


natiiyooyinka dhacdada A iyo dhacdada B laakiin ma aha dhacdada C

1) Wareeggu wuxuu leeyahay natiijooyin suurtagal ah {3, 5, 6, 8, 10, 12, 15, 18, 20, 25}.

Dhacdada A = {tirooyin khariijin ah}, dhacdada B = {tirooyinka 30 qaybiya} iyo dhacdada C = {tirooyinka 3 ku dhufan}.

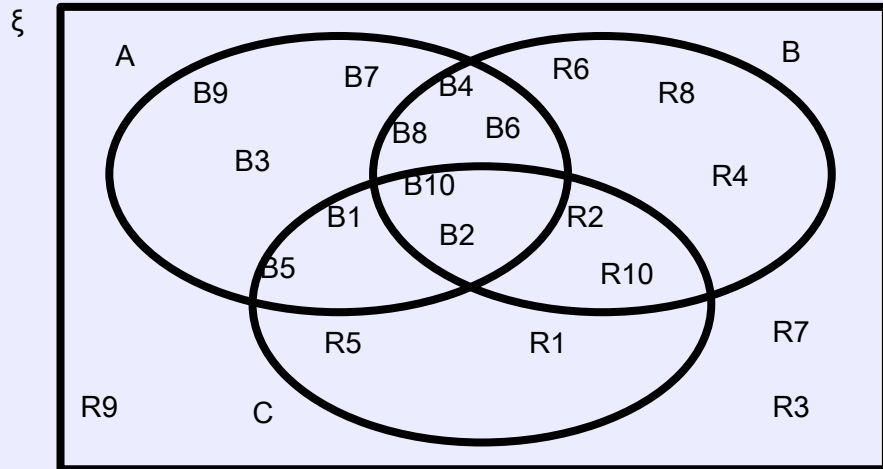
Sawir jaantus Venn (Venn diagram) si aad u muujiso macluumaadkan.



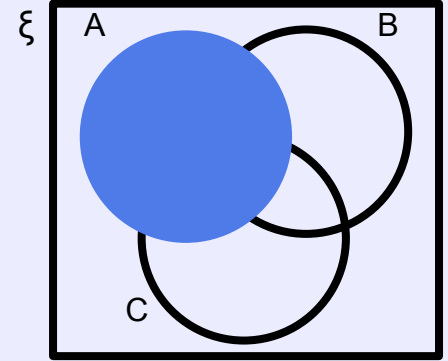
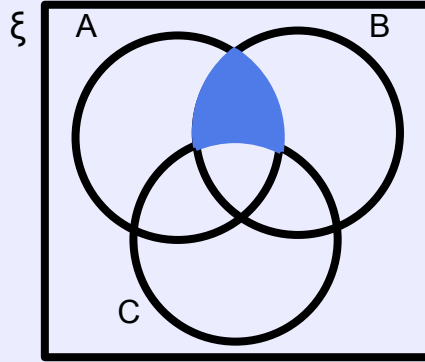
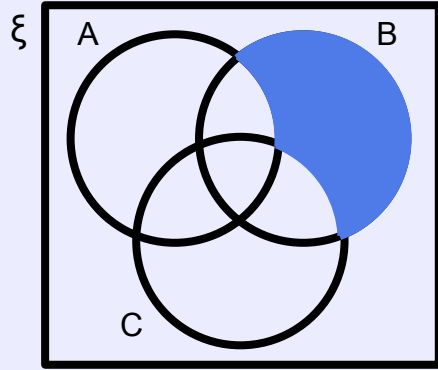
2) Waxaa jira 20 kaad oo ciyaar ah. Kaad kastaa waa mid cas (R) ama madow (B) iyo tiro 1 ilaa 10. Tusaale, R3 waa kaad cas oo tiro 3 ah.

Dhacdada $A = \{\text{kaadaha madow}\}$, dhacdada $B = \{\text{tirooyin siman}\}$ iyo dhacdada $C = \{\text{tirooyinka 10 qaybiya}\}$.

Sawir jaantus Venn (Venn diagram) si aad u muujiso macluumaadkan.



3) Ku xidh weedhaha meelaha hadhka leh.



natiijooyinka dhacdada A

natiijooyinka dhacdada B kaliya

natiijooyinka dhacdada A iyo dhacdada B laakiin ma aha dhacdada C

Isticmaalka jaantus Venn (Venn diagram) si loo muujiyo
natiijooyinka in ka badan laba dhacdo



Jaantusyada Venn (Venn diagrams)



Natiijooyinka ka soo baxa jaantus Venn (Venn diagram)

Halkan waa jaantus Venn (Venn diagram) oo loogu talagalay saddexda dhacdo A, B iyo C, halkaasoo:

$A = \{\text{ tiro koowaad (prime number)}\} = \{2, 3, 5, 7, 11\}$

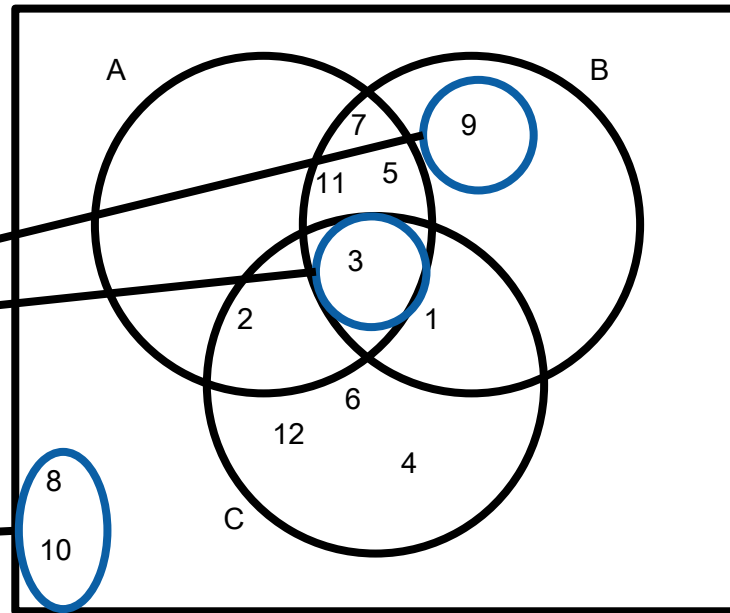
$B = \{\text{ tiro kisi (odd number)}\} = \{1, 3, 5, 7, 9, 11\}$

$C = \{\text{ qaybiyaha (factor) 12}\} = \{1, 2, 3, 4, 6, 12\}$

$\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12\}$

$\{3\}$ waa koowaad (prime), kisi (odd), iyo qaybiyaha (factor) 12

$\{8, 10\}$ ma aha koowaad (prime), kisi (odd), ama qaybiyaha (factor) 12



Dhacdo A = {qaybiyaha (factors) 10}

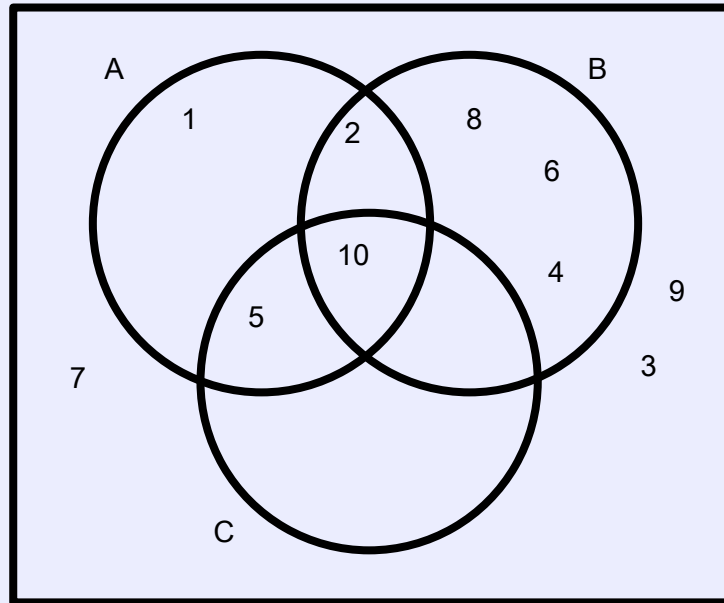
Dhacdo B = {tiro siman (even numbers)}

Dhacdo C = {tiro dhufsan (multiples) 5}

Natijjo (outcome) kee ayaa ku jira dhacdooyinka saddexda?

{10}

$\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$



Dhacdo A = {qaybiyaha (factors) 10}

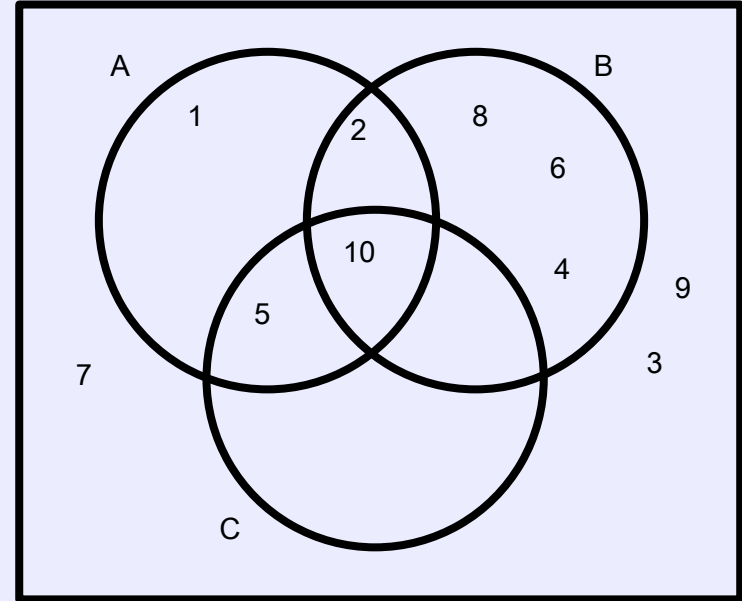
Dhacdo B = {tiro siman (even numbers)}

Dhacdo C = {tiro dhufsan (multiples) 5}

Natijjo (outcome) kee ayaa qaybiyaha (factor) 10 kaliya?

{1}

$\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$



Natijiyooyinka (outcomes) ka yimid jaantusyada Venn

Dhacdo A = {qaybiyaha (factors) 10}

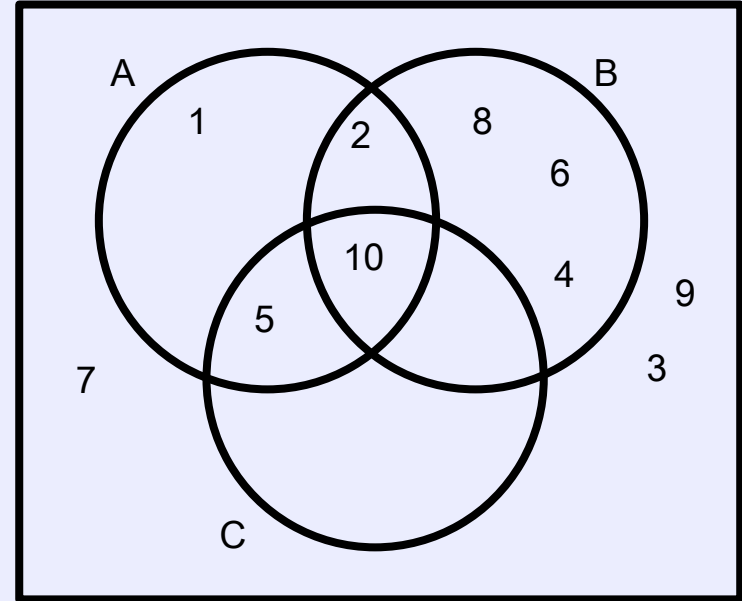
Dhacdo B = {tiro siman (even numbers)}

Dhacdo C = {tiro dhufsan (multiples) 5}

Natijiyooyinka (outcomes) kee ayaa ah qaybiyaha (factors) 10 iyo tiro dhufsan (multiples) 5 labadaba?

{5, 10}

$\xi = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$



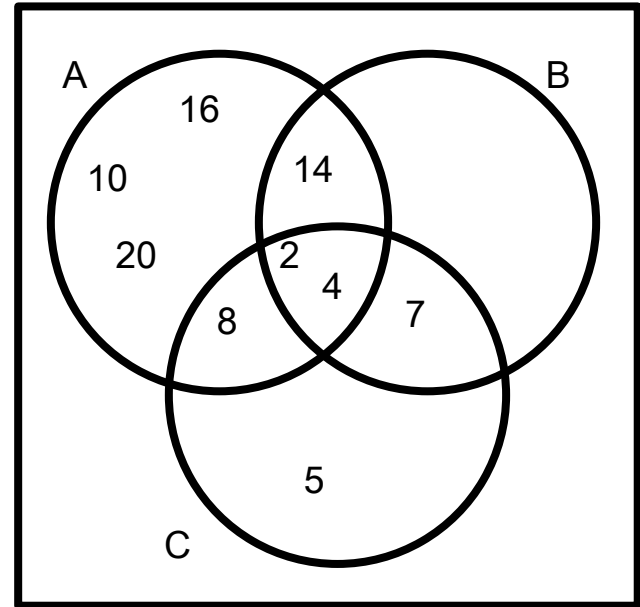
Jaantuska Venn waa la dhammeeyey saddex dhacdo, A, B iyo C.

Waxaan ka arki kamaa jaantuska Venn

⋮

in ay jiraan 7 natiijo oo ku jira dhacdada A
in ay jiraan 4 natiijo oo ku jira dhacdada B
in ay jiraan 5 natiijo oo ku jira dhacdada C
in aysan jirin natiijooyin aan ku jirin dhacdada A, B ama C

ξ



Buuxi meelaha bannaan.

Jaantuska Venn wuxuu muujinayaa in ay jiraan:

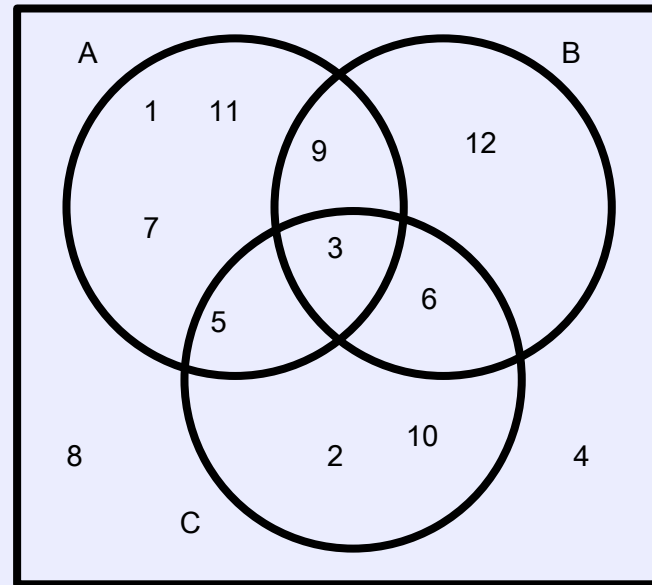
- natijoooyin ku jira dhacdada A
- natijoooyin ku jira dhacdada A iyo B
- natijoooyin ku jira dhacdada C kaliya

6

2

2

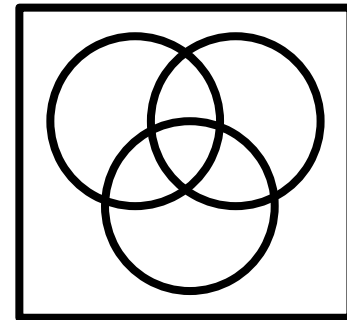
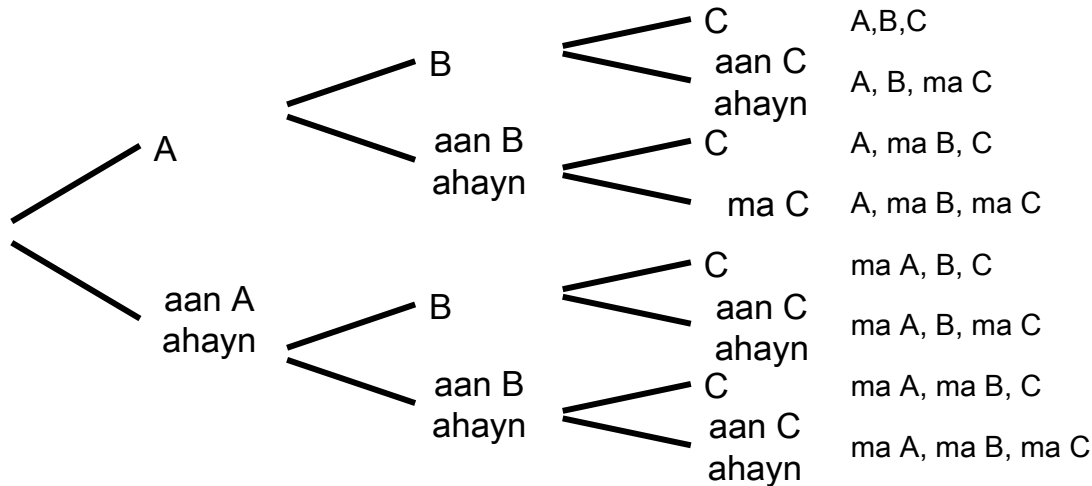
ξ



Geedkan natijadu wuxuu leeyahay saddex dhacdo: A, B iyo C. No natiijooyinka.



Adoo tixgelinaya halka dhacdo kasta ku taal jaantuska Venn (Venn diagram), waxaan sidoo kale dhigi karnaa natijjooyinkan jaantuska Venn.

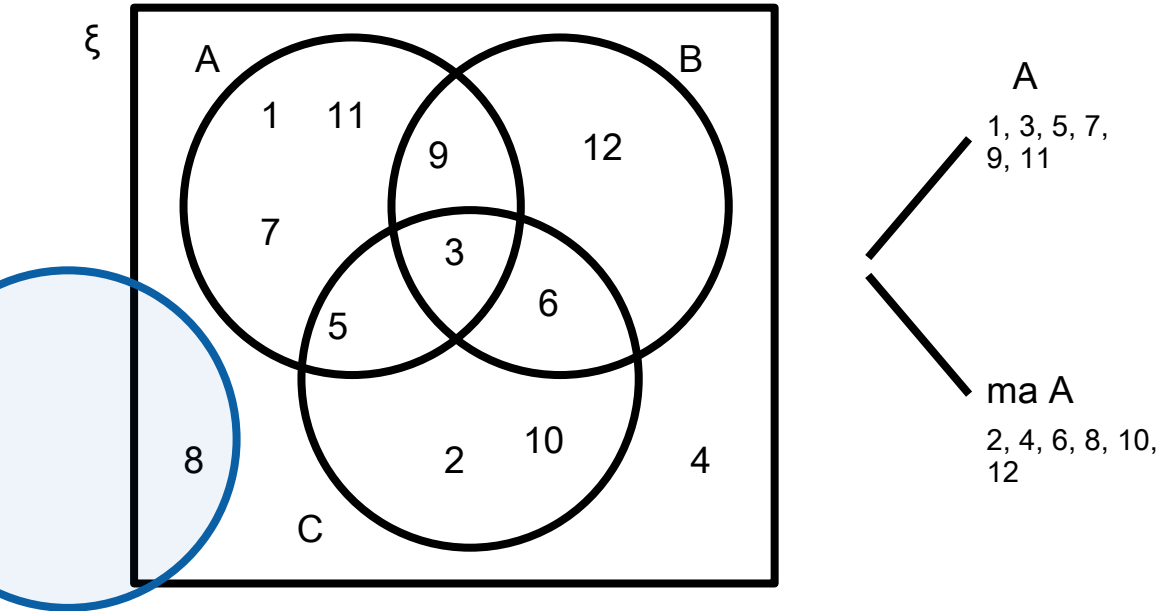


Jawaabaha:

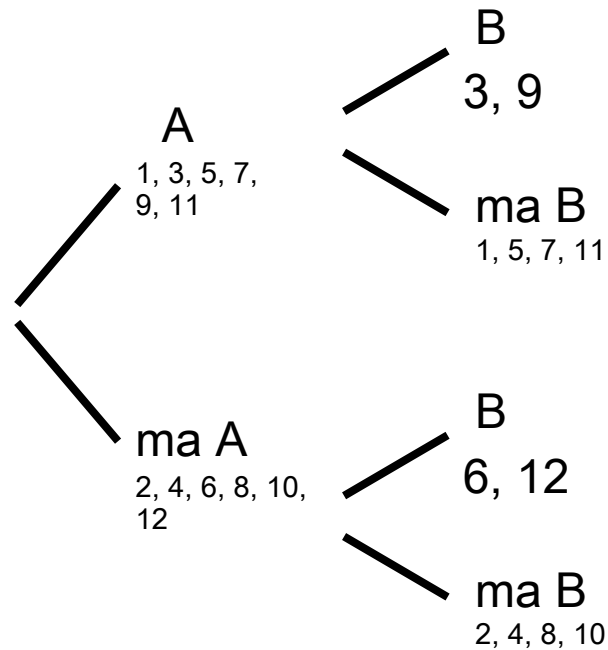
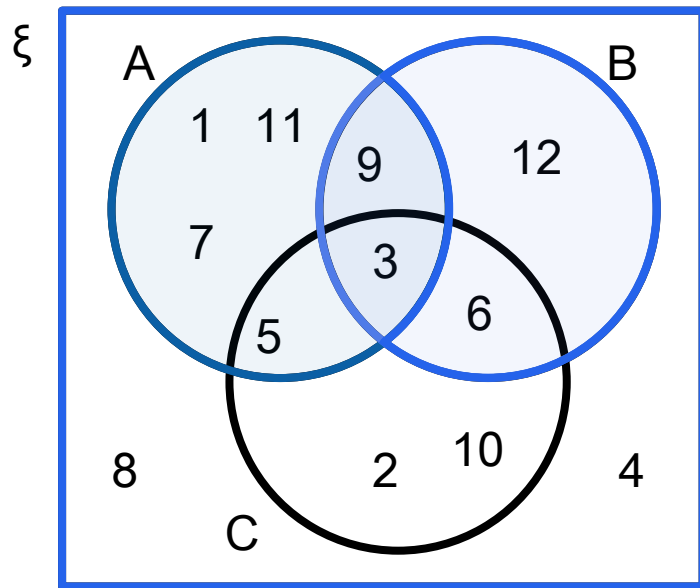
1 2 ξ B A 3 2 6 4 4 1 5 3 5 7 6 8 C 7

Natijoooyinka jaantusyada Venn (Venn diagrams)

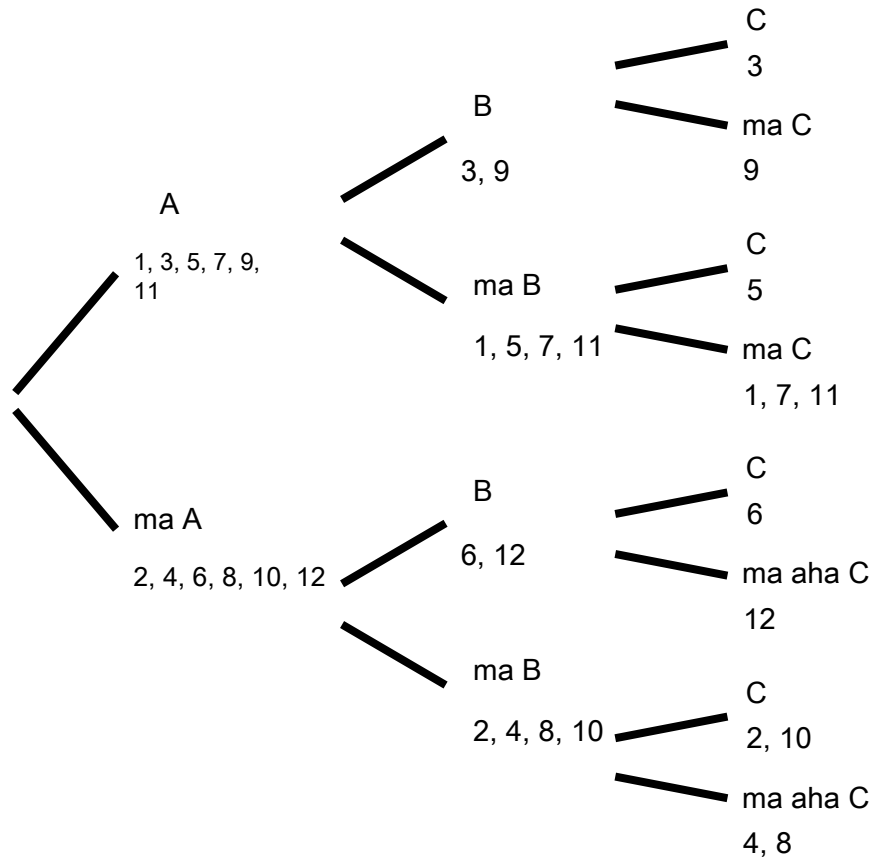
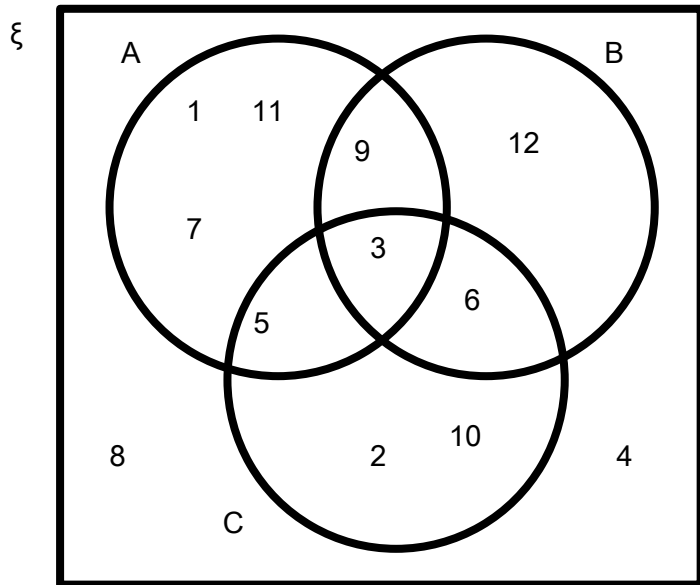
Sidoo kale, waxaan ka soo saari karnaa geed natiijo (outcome tree) jaantuska Venn.



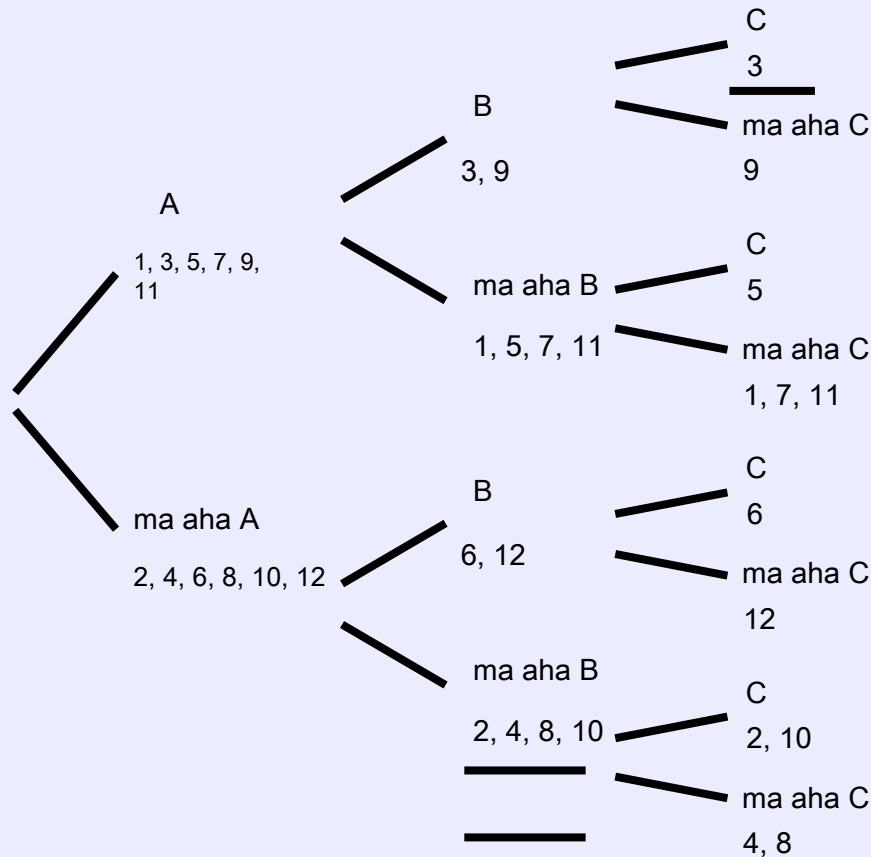
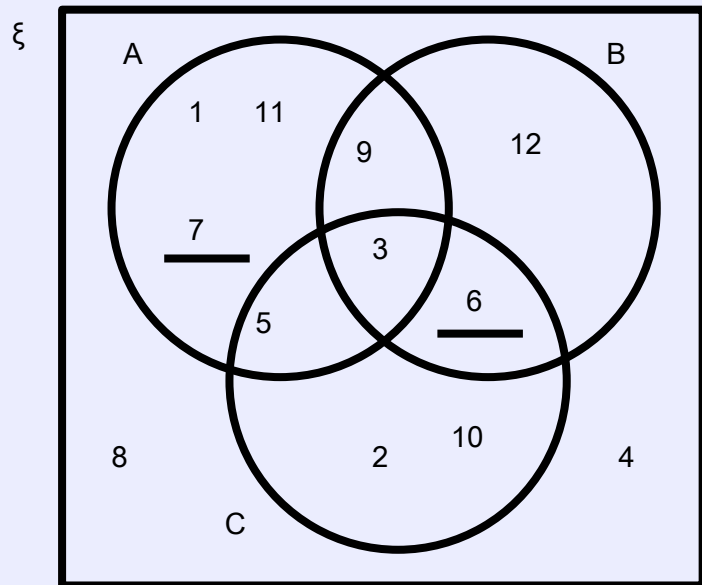
Natijoooyinka jaantusyada Venn (Venn diagrams)



Muuqaal kee ayaad door bidaysaa?



Buuxi natijoooyinka maqan.



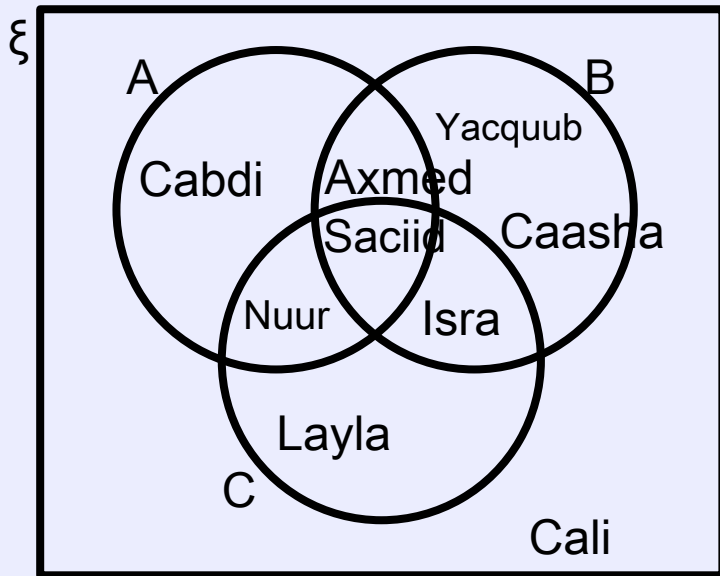
Natiijooyinka ka soo baxa Venn diagrams

Venn diagram-kani wuxuu matalayaa arday qaar.

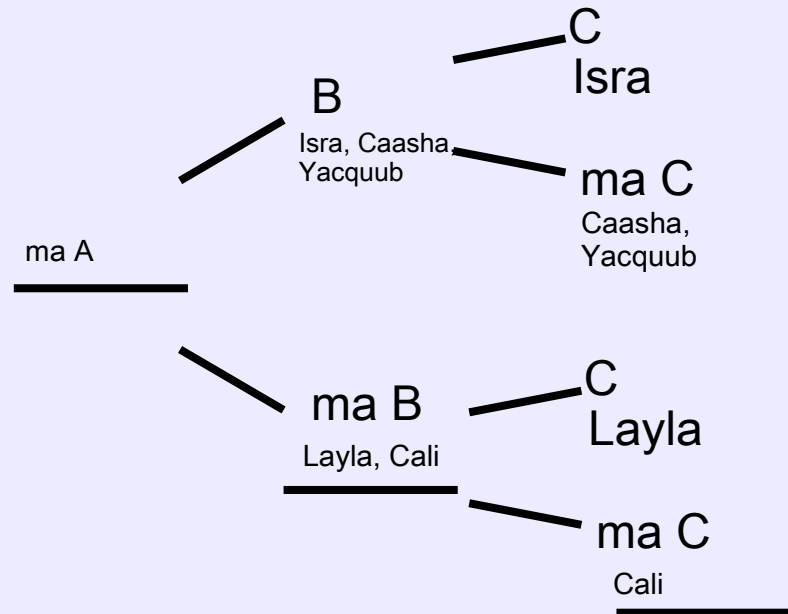
A = {booqday Spain}

B = {booqday France}

C = {booqday America}



Waa qayb ka mid ah geedka natiijada (outcome tree) si aad u dhamaystirto.



1) Isticmaal jaantuskan Venn si aad uga jawaabto su'aalahan soo socda:

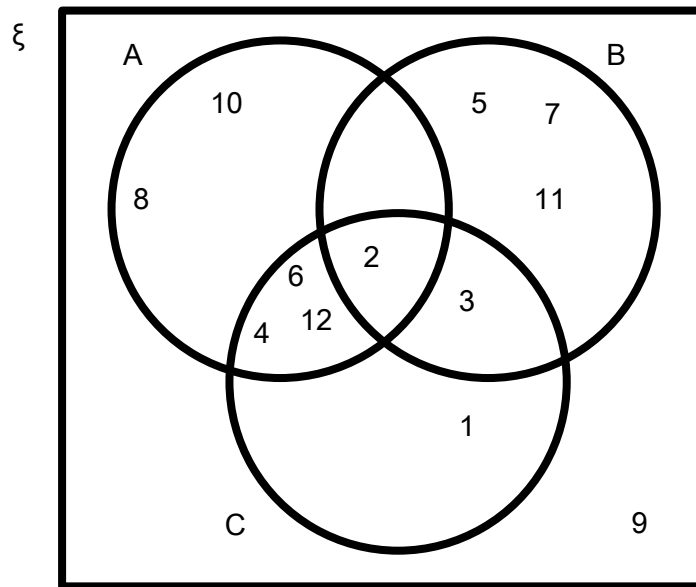
a) Liis garo natijjooyinka ku jira dhacdada A (event A)

b) Liis garo natijjooyinka ku jira dhacdada C (event C)

c) Liis garo natijjooyinka ku jira labada dhacdo B iyo C (event B and event C)

d) Liis garo natijjooyinka kaliya ku jira dhacdada B (event B)

e) Liis garo natijjada aan ku jirin mid ka mid ah dhacdooyinka (events)

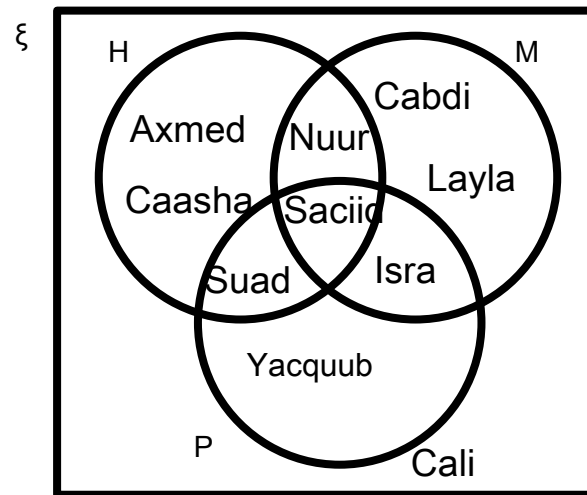
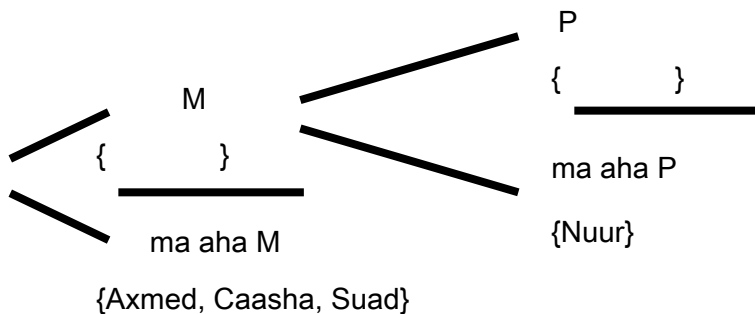


2) Jaantuska Venn, wuxuu muujinayaa ardayda doortay taariikhda (H), xisaabta (M) ama cilmi-nafsiga (P) doorashadooda GCSE.

a) Ardaydee baa doortay inay bartaan taariikhda?

b) Ardaydee baa doortay inay bartaan taariikhda iyo cilmi-nafsiga?

c) Buuxi qaybtan geedka natijjada



1) Isticmaal jaantuska Venn si aad uga jawaabto su'aalahan soo socda:

a) Liis garay natiijooyinka dhacdada A

{2, 4, 6, 8, 10, 12}

b) Taxo natiijooyinka dhacdada C

{1, 2, 3, 4, 6, 12}

c) Taxo natiijooyinka dhacdada B iyo dhacdada C labadaba

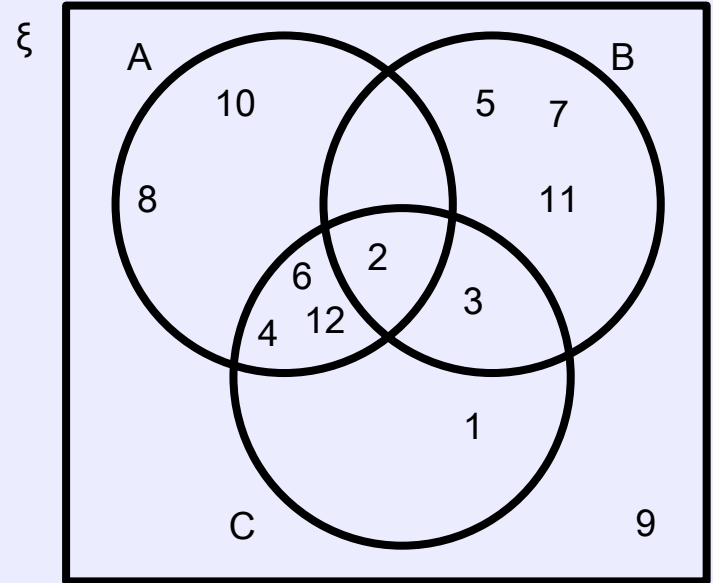
{2, 3}

d) Taxo natiijooyinka kaliya ee dhacdada B ku jira

{5, 7, 11}

e) Taxo natiijada aan ku jirin dhacdo kasta

{9}



2) Jaantuska Venn (Venn diagram) wuxuu muujinayaa ardayda doortay taariikhda (H), xisaabta (M) ama cilmi-nafsiga (P) doorashadooda GCSE.

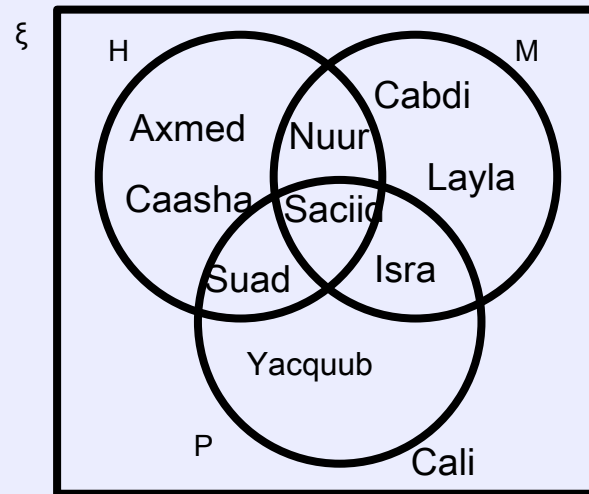
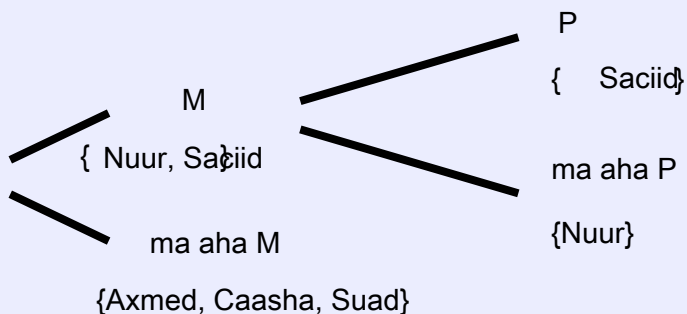
a) Ardaydee ayaa doortay inay bartaan taariikhda?

{Axmed, Caasha, Nuur, Saciid, Suad}

b) Ardaydee ayaa doortay inay bartaan taariikhda iyo cilmi-nafsiga?

{Suad, Saciid}

c) Buuxi qaybtan geedka natijada (outcome tree)



Soo koobid

Isticmaalka jaantuska Venn si loo muujiyo natiijooyinka in ka badan laba dhacdo

Natiijooyinka suurtagalka ah ee in ka badan laba dhacdo waxaa lagu muujin karaa jaantuska Venn.

Natiijooyinka suurtagalka ah ee liis ama geed natiijo ayaa dhali kara jaantuska Venn.

Jaantuska Venn wuxuu dhali karaa liis natiijooyin suurtagal ah ama geed natiijo.