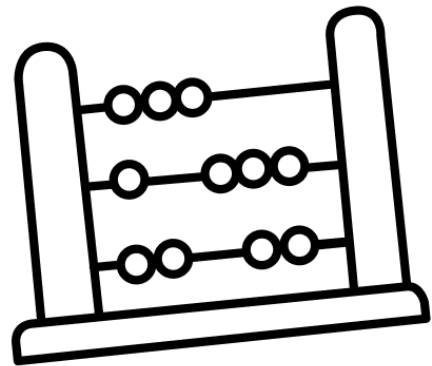


Isticmaal geed natiijo si loo muujiyo natiijooyinka in ka badan laba dhacdo

Maths

Cutub: Itimaalka: natiijooyinka suurtagalka ah



Natiijo

Waxaan si nidaamsan u heli karaa dhammaan natiijooyinka suurtagalka ah ee in ka badan laba dhacdo adigoo isticmaalaya jaantus geed natiijo.

Erayada muhiimka ah

Jaantusyada geedku waa matalaad loo isticmaalo su'aalaha tirakoobka/filmaalka. Laamuhu waxay matalaan dhacdooyin ama natiijooyin kala duwan.

Laan kasta oo geed natiijo ah waxay muujinaysaa natiijo suurtagal ah oo ka timid dhacdo ama heer tijaabo. Geedka natiijada oo dhammaystiran wuxuu muujinayaa dhammaan natiijooyinka suurtagalka ah.

Meel muunad (sample space) waa dhammaan natiijooyinka suurtagalka ah ee tijaabo. Jaantuska meesha muunadku waa hab nidaamsan oo lagu soo saaro meel muunad.

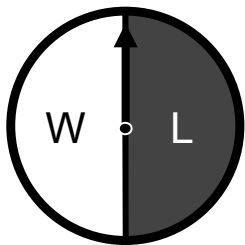
Isticmaal geed natiijo si loo muujiyo natiijooyinka in ka badan laba dhacdo



Geedaha natiijada ee tijaabooyinka heerar badan



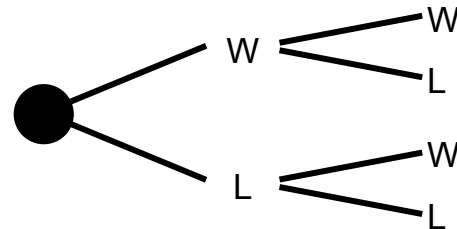
Geedaha natiijada ee dhacdooyinka badan



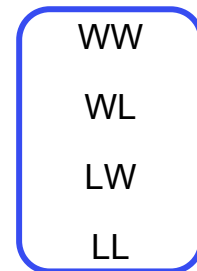
Nuur wuxuu wareeji doonaa wareejintan laba jeer.

Wuxuu u matalayaa natiijooyinka suurtagalka ah ee tijaabadan laba heer ah isagoo isticmaalaya laba matalaad oo kala duwan.

	W	L
W	WW	WL
L	LW	LL



geed natiijo (outcome tree)



Ma suurtagal baa in natiijooyinka oo dhan lagu qoro jaantus natiijo (outcome table) ama geed natiijo (outcome tree) haddii aar saddex jeer wareejiyo wareejiyaha (spinner)?

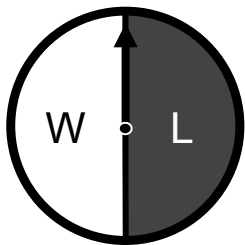


Nuur

Geedaha natiijo (outcome trees) ee tijaabooyin badan (multi-stage trials)



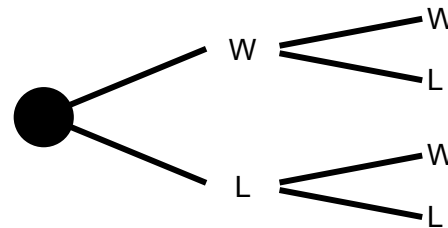
Sharaxaad



Nuur wuxuu laba jeer wareejin doonaa wareejiyahan (spinner).

	W	L
W	WW	WL
L	LW	LL

jaantus natiijo (outcome table)



geed natiijo (outcome tree)

WW

WL

LW

LL

Lakabka koowaad ee laamuhu (first layer of branches) wuxuu muujinayaa wareejinta koowaad, lakabka labaadna wuxuu muujinayaa wareejinta labaad...

Wax meel kale ah oo lagu muujiyo wareejinta saddexaad ma jiraan...

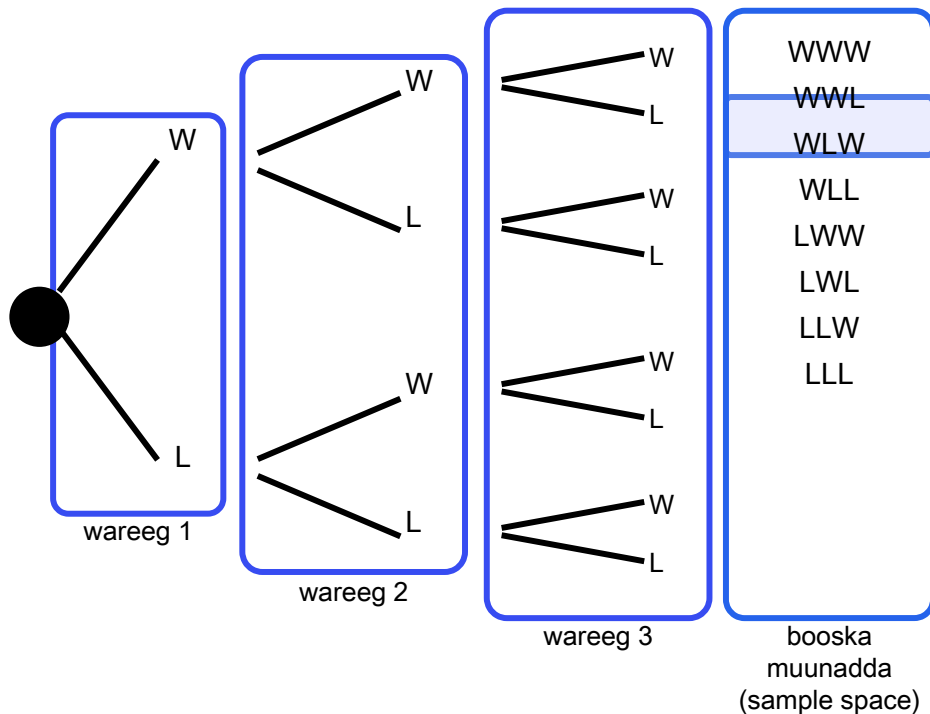
Laakiin, ma suurtagal baa geed natiijo (outcome tree)?



Suad



Nuur

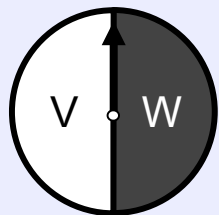


Natiijadan waxay ka timid wareegga koowaad oo ku soo degay W, wareegga labaad oo ku soo degay W, iyo wareegga saddexaad oo ku soo degay L.

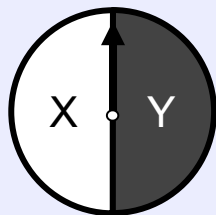
Natiijo kasta oo ku jirta booska muunadda (sample space) waxay ka kooban tahay saddex xaraf, mid kasta oo ka mid ah wareegyada!



Nuur



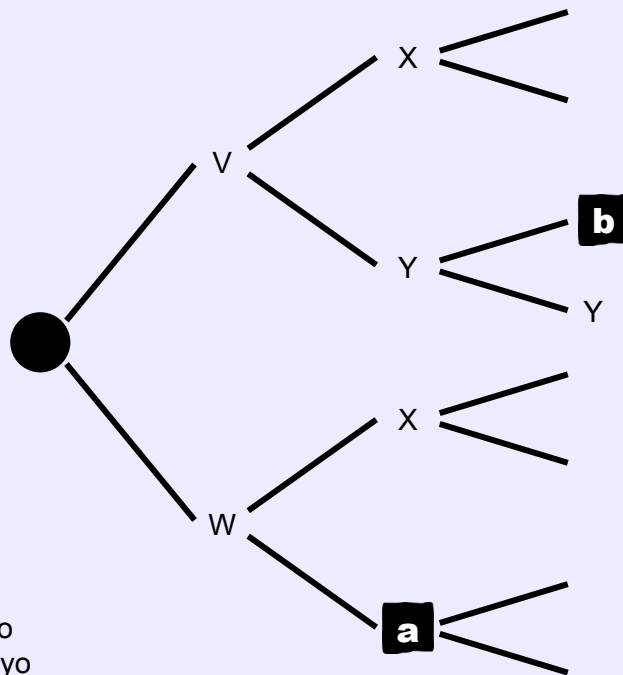
wareegga 1



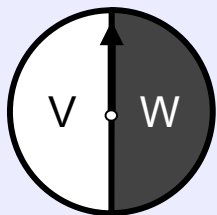
wareegga 2



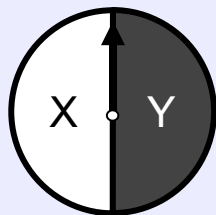
Cabdi wuxuu ku wareejinayaa wareegga 1 hal mar, ka dibna wareegga 2 laba jeer.



Waa kuwee natiijooyinka ay tahay in lagu qoro dhamaadka laamaha lagu calaamadeeyay a iyo b?



wareejiyaha 1

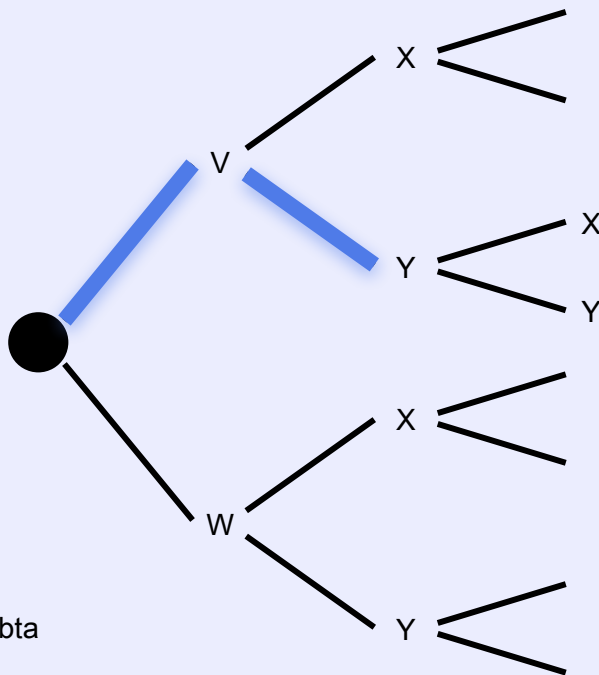


wareejiyaha 2



Cabdi wuxuu ku wareejin doonaa wareejiyaha 1 hal mar, ka dibna wareejiyaha 2 laba jeer.

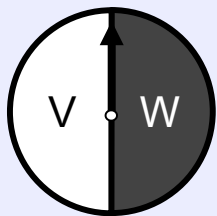
Kee ka mid ah weedhahan ayaa run u ah qaybta la iftiimiyay ee laamaha?



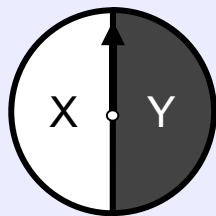
a Wareejiyaha 1 wuxuu ku degay V, wareejiyaha 2 wuxuu ku degay X.

b Wareejiyaha 1 wuxuu ku degay V, wareejiyaha 2 wuxuu ku degay Y.

c Wareejiyaha 1 wuxuu ku degay V, wareejiyaha 2 wuxuu ku degay Y laba jeer.



wareejiyaha 1

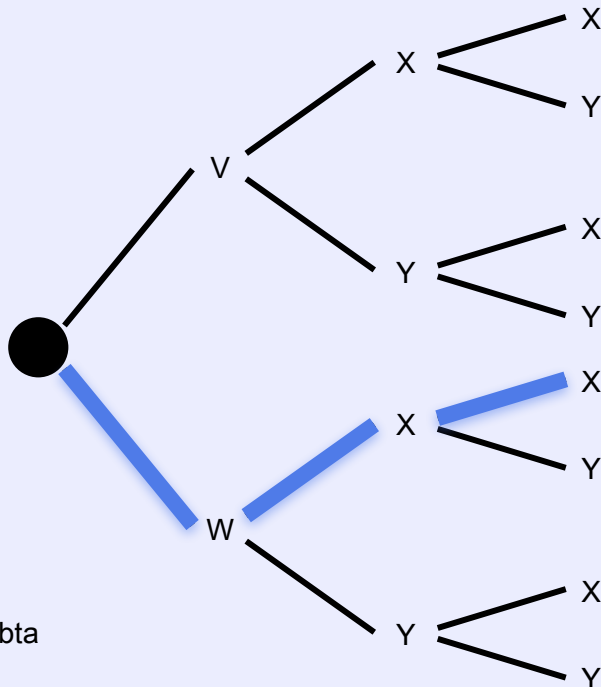


wareejiyaha 2



Cabdi wuxuu ku wareejin doonaa wareejiyaha 1 hal mar, ka dibna wareejiyaha 2 laba jeer.

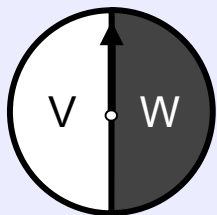
Kee ka mid ah weedhahan ayaa run u ah qaybta la iftiimiyay ee laamaha?



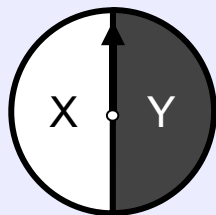
a Wareejiyaha 1 wuxuu ku degay W, wareejiyaha 2 wuxuu ku degay X ka dibna Y.

b Wareejiyaha 1 wuxuu ku degay X laba jeer, wareejiyaha 2 wuxuu ku degay W.

c Wareejiyaha 1 wuxuu ku degay W, wareejiyaha 2 wuxuu ku degay X laba jeer.



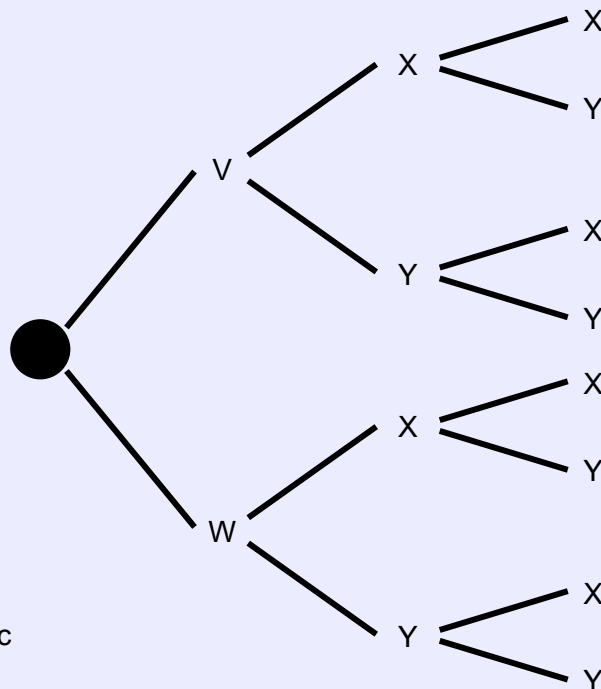
wareejiyaha 1



wareejiyaha 2



Cabdi wuxuu ku wareejin doonaa wareejiyaha 1 hal mar, ka dibna wareejiyaha 2 laba jeer.



Natiijooyin nooc ee ah ayaa meesha xuruufta c iyo d ku qabsan lahaa booskan muunadda (sample space)?

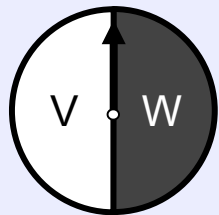


booska muunadda (sample space)

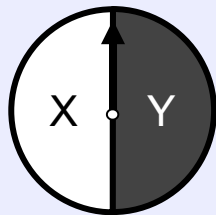
Geedaha natiijada (Natiijada trees) ee tijaabooyin heerar badan leh



Hubi



spinner 1

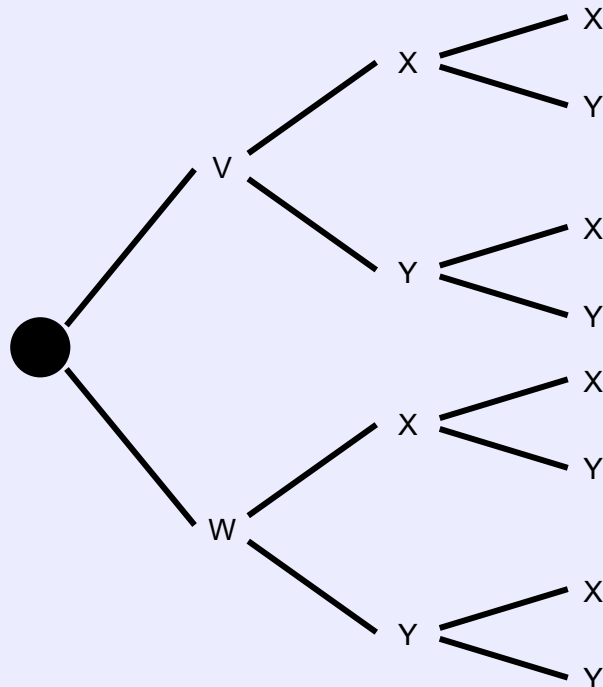


spinner 2



Cabdi wuxuu wareejinayaa spinner 1 hal mar, ka dibna spinner 2 laba jeer.

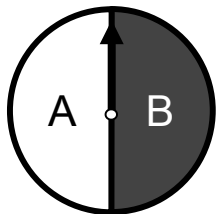
Imisa natiijooyin ayaa jira dhacdada ay laba xarfo isku celiyaan?



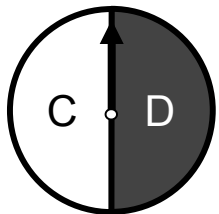
V X X
V X Y
Y V X
V Y Y
W X X
W X Y
W Y X
W Y Y

meesha natiijooyinka
(sample space)

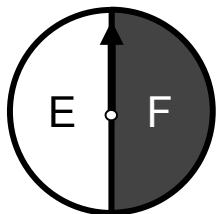
Afar natiijo ayaa leh
xaraf la soo celiyay.



spinner 1



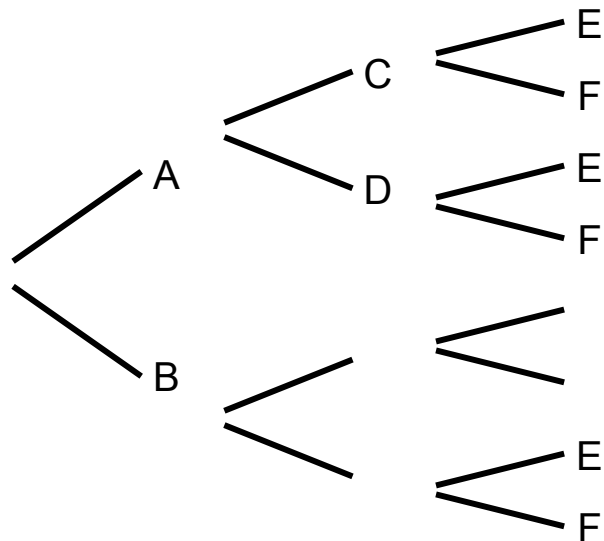
spinner 2



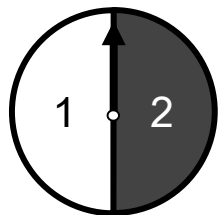
spinner 3

1) Suad waxay wareejin doontaa spinner 1, 2, iyo 3 hal mar mid kasta.

a) Buuxi geedkan natiijada iyo meesha natiijooyinka (sample space).



b) Dhacdada ugu yaraan hal spinner ku soo degto shaqal (vowel) imisa natiijooyin ayay leedahay?



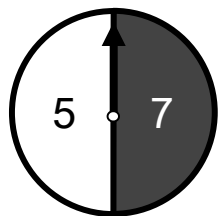
spinner 1

2) Caasha waxay ciyaartaa ciyaar.

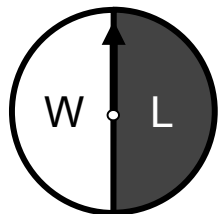
Caasha waxay wareejin doontaa spinners 1, 2, iyo 3 hal mar mid kasta.

Haddii spinner 3 ku soo degto W, Caasha waxay ku guulaysataa tirada nacraca (sweets) oo la mid ah wadarta nambarda spinner 1 iyo 2.

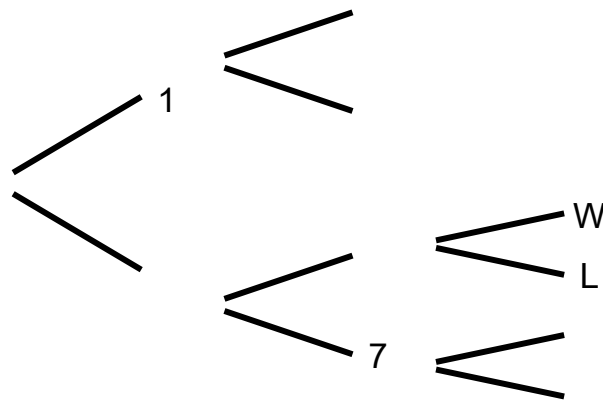
Buuxi geedkan natijada iyo meesha natijoooyinka (sample space) ee ciyaarta Caasha.



spinner 2



spinner 3



1 5 W

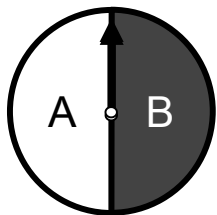
2 5 W

2 5 L

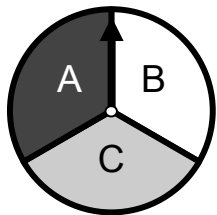
guul 6

guul 7

guul ma leh



wareegiyaha 1aad
(spinner 1)



wareegiyaha 2aad
(spinner 2)

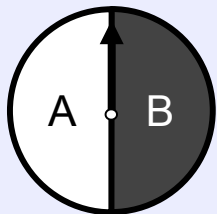


qadaadiic (coin)

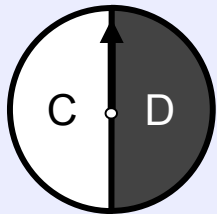
3) Saciid wuxuu wareejin doonaa wareegiyaha 1aad iyo 2aad hal mar midkiiba, ka dibna qadaadiic (coin) buu tuuri doonaa.

a) Sawir geedka natiijada (outcome tree) ee tijaabadan saddex-heer ah. Heerka 1aad waa wareegiyaha 1aad, heerka 2aad waa wareegiyaha 2aad, heerka 3aadna waa qadaadiicda (coin).

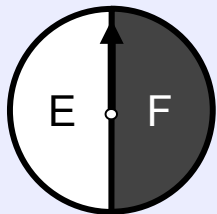
b) Ka beddel geedkan natiijada (outcome tree) si uu u buuxiyo tijaabadan afar-heer ah:
“haddii labada wareegiyood ay ku soo baxaan xaraf isku mid ah oo qadaadiicdu (coin) madax soo baxdo, markaas qadaadiic (coin) kale tuur”.



wareegiyaha 1aad
(spinner 1)



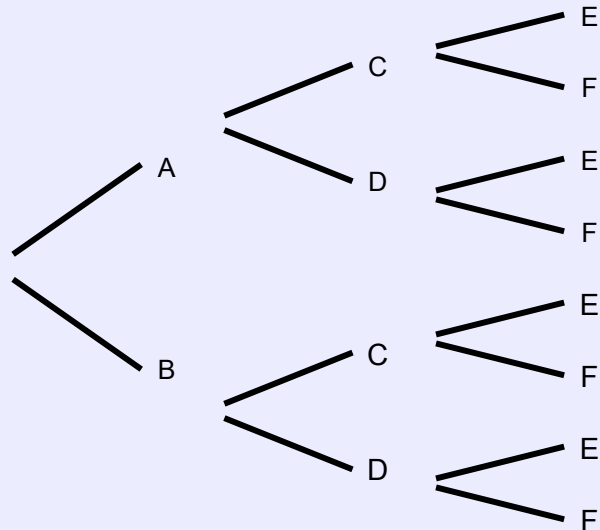
wareegiyaha 2aad
(spinner 2)



wareegiyaha 3aad
(spinner 3)

1) Suad waxay wareejin doontaa wareegiyaha 1aad, 2aad, iyo 3aad hal mar midkiiba.

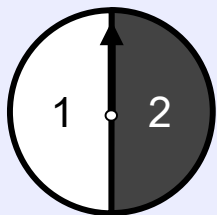
a) Dhammaystir geedkan natijada (outcome tree) iyo booska muunadda (sample space).



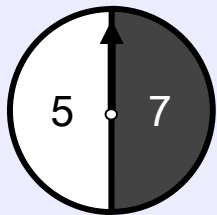
A C E
A C F
A D E
A D F
B C E
B C F
B D E
B D F

b) Dhacdada ah in ugu yaraan hal wareegive uu ku soo baxo shaqal (vowel) waxay leedahay imisa natiiyo (outcomes)?

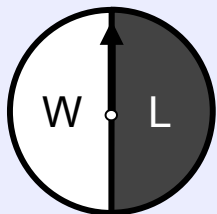
Waxaa jira lix natiiyo (outcomes) oo leh ugu yaraan hal shaqal (vowel).



wareegga 1



wareegga 2



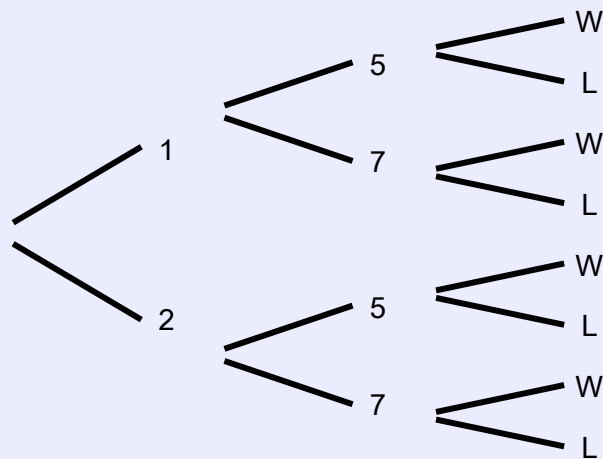
wareegga 3

2) Caasha waxay ciyaartaa ciyaar.

Caasha waxay wareejin doontaa wareegiyaha 1aad, 2aad, iyo 3aad hal mar midkiiba.

Haddii wareegiyaha 3aad uu ku soo baxo W, markaas Caasha waxay ku guuleysataa tirada nacraca (sweets) oo la mid ah wadarta (sum) tirooyinka wareegiyaha 1aad iyo 2aad.

Dhammeysti geedka natiijada iyo goobta muunadda ee ciyaarta Caasha.



1 5 W

1 5 L

1 7 W

1 7 L

2 5 W

2 5 L

2 7 W

2 7 L

guul 6

guul ma leh

guul 8

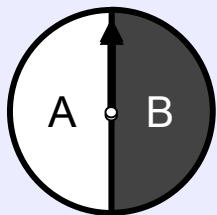
guul ma leh

guul 7

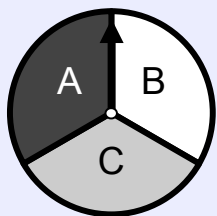
guul ma leh

guul 9

guul ma leh



wareegga 1



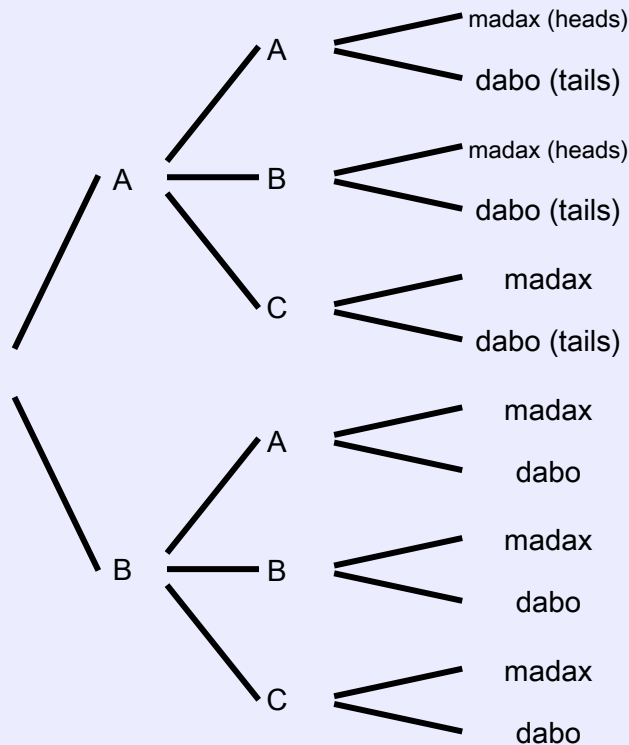
wareegga 2

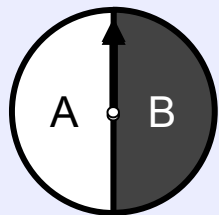


qadaadiic (coin)

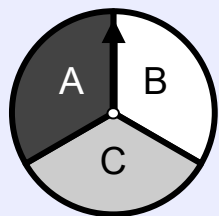
3) Saciid wuxuu wareejin doonaa spinner 1 iyo 2 hal mar mid kasta, ka dibna wuxuu tuuri doonaa lacag (coin).

a) Sawir geedka natijada (outcome tree) ee tijaabadan saddex-heer ah. Heerka 1 waa spinner 1, heerka 2 waa spinner 2, heerka 3 waa lacagta (coin).





spinner 1



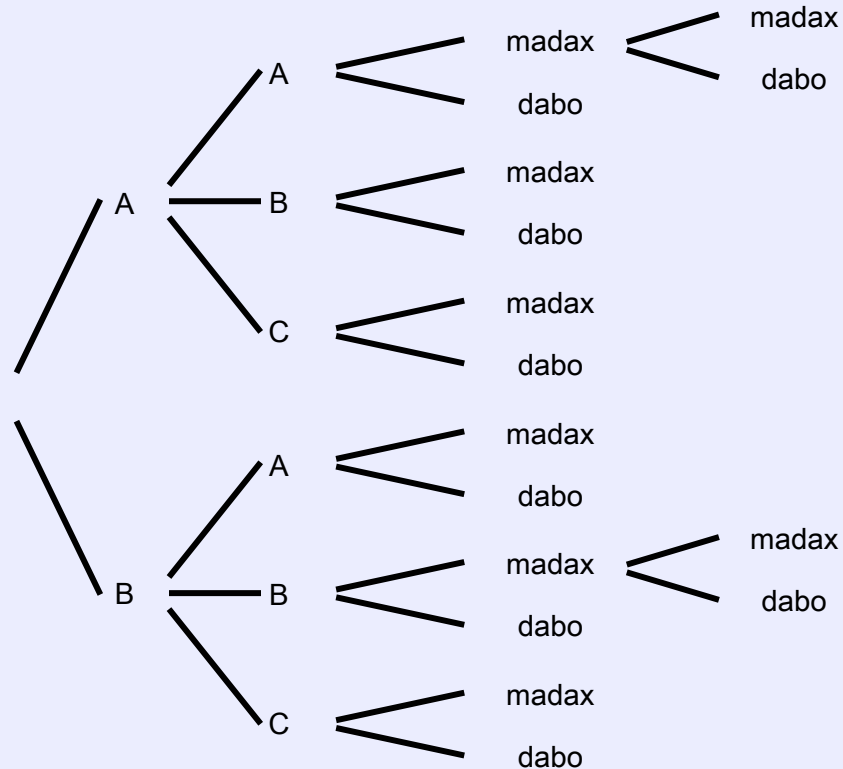
spinner 2



lacag (coin)

3) Saciid wuxuu wareejin doonaa spinner 1 iyo 2 hal mar mid kasta, ka dibna wuxuu tuuri doonaa lacag (coin).

b) Ka beddel geedkan natiijada (outcome tree) si uu u buuxiyo tijaabadan afar-heer ah: “haddii labada spinner ay ku soo baxaan xaraf isku mid ah oo lacagta (coin) ay soo baxdo madax, markaas tuur lacag (coin) kale”.



Isticmaalka geed natiijada si loo muujiyo natiijooyinka in
ka badan laba dhacdo



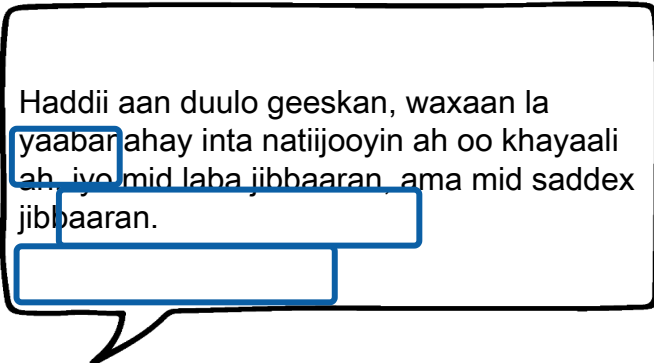
Geedaha natiijada ee tijaabooyin heerar badan leh



Geedaha natiijada ee dhacdooyin badan

Geedaha natiijada waxay sidoo kale kala saari karaan dhammaan natiijooyinka tijaabo hal heer ah oo saddex ama in ka badan dhacdo.

Nuur wuxuu ku duuli doonaa gees-12 xagal oo caadi ah oo leh tirooyin isku-dhafan 0 ilaa 11.



Haddii aan duulo geeskan, waxaan la yaabar ahay inta natiijooyin ah oo khayaali ah iyo mid laba jibbaaran, ama mid saddex jibbaaran.



Nuur

Dhacdo kasta waxaa lagu muujin karaa heer laamo ah oo geed natiijada ah.

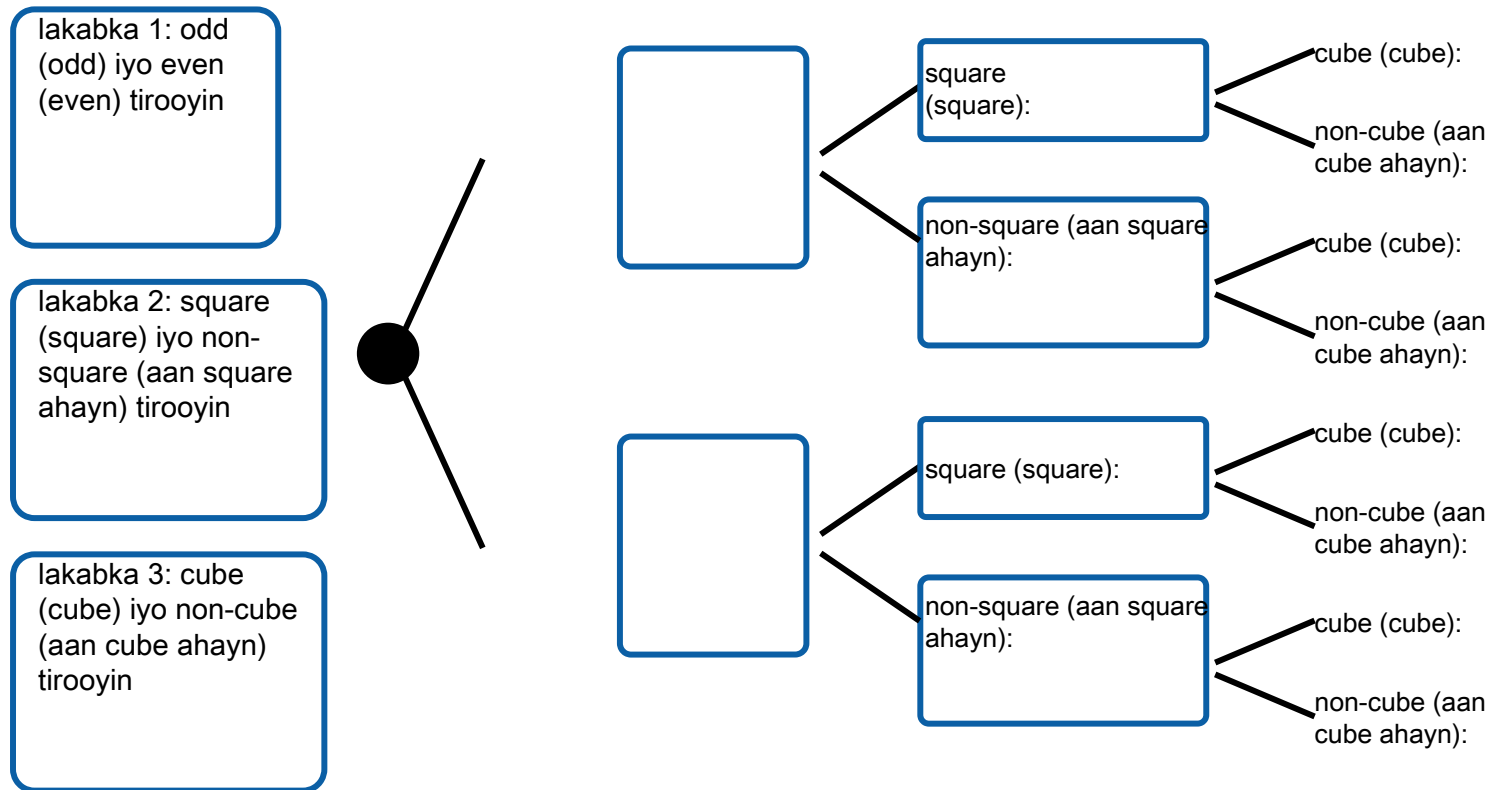
Heer kastaa wuxuu ka koobnaan doonaa dhacdo iyo dhacdo ka soo horjeeda.

heerka 1: tirooyinka khayaaliga ah iyo kuwa siman

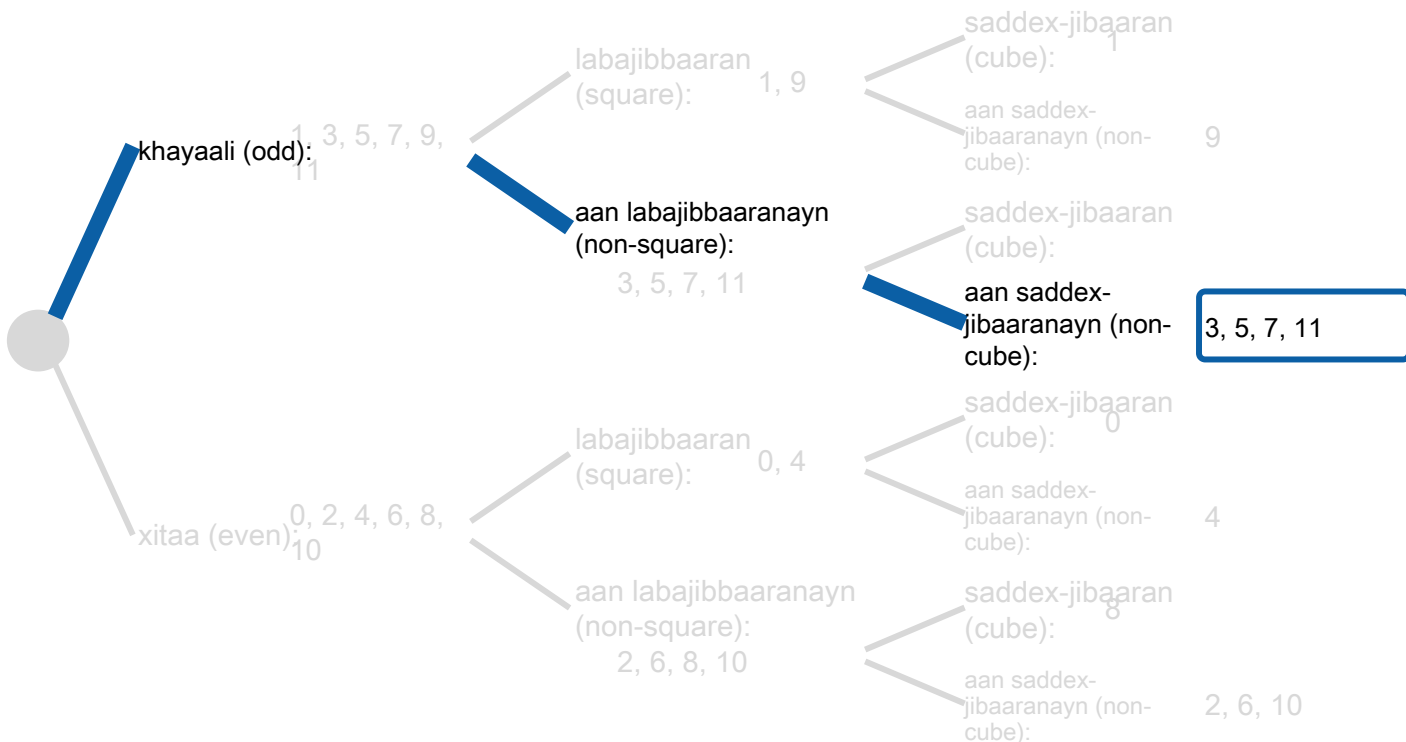
heerka 2: laba jibbaaran iyo aan laba jibbaaranayn tirooyinka

lakabka 3: cube (cube) iyo non-cube (aan cube ahayn) tirooyin (numbers)

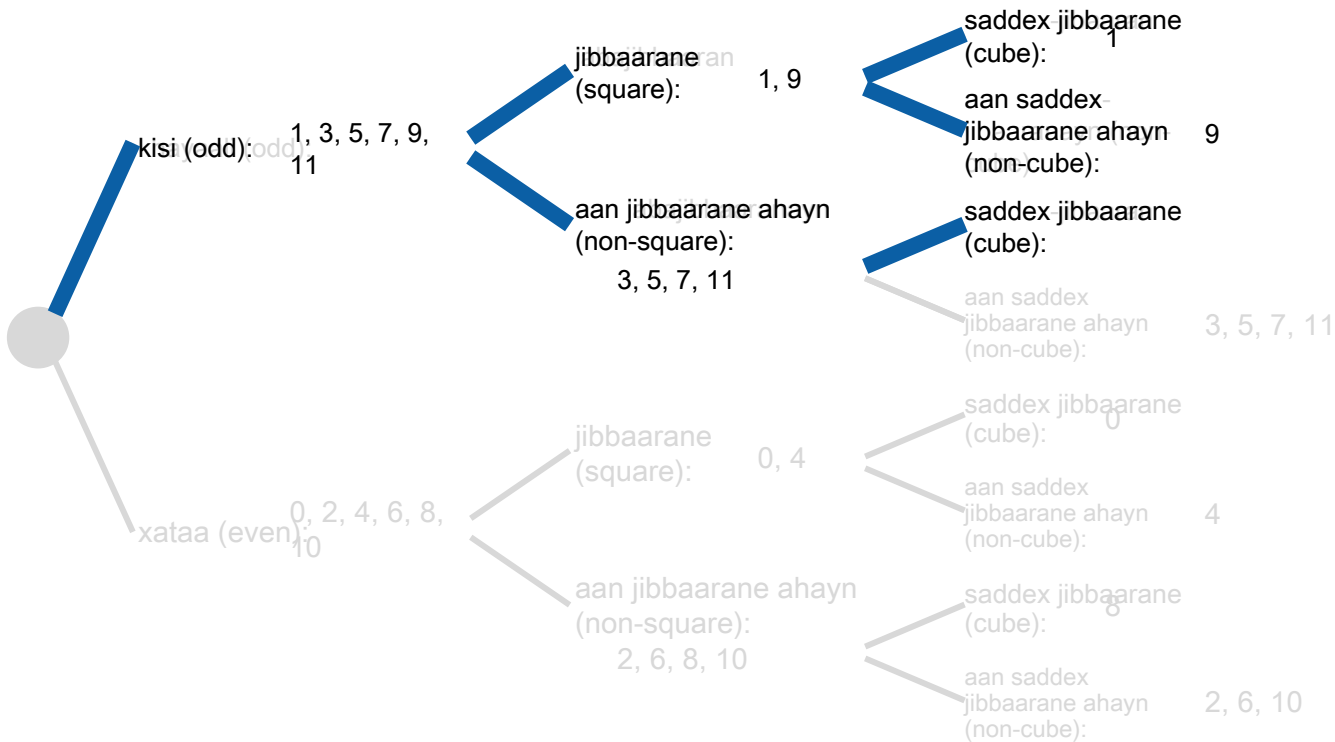
Nuur wuxuu rogi doonaa dice (dice) 12-dhinac ah oo caddaalad ah, oo tirooyin 0 ilaa 11 ku qoran yihiir.



Haddii dhagaxa (dice) ku soo baxo 3, 5, 7, ama 11, tani waxay noqon doontaa natiijada dhacdooyinka: tiro khayaali ah oo aan labajibbaaranayn iyo saddex-jibaaranayn toona.



Nuur wuxuu doonayay inuu ogaado inta natiijo (outcome) ay tahay kisi (odd), iyo mid jibbaarane (square number) ama saddex jibbaarane (cube number).



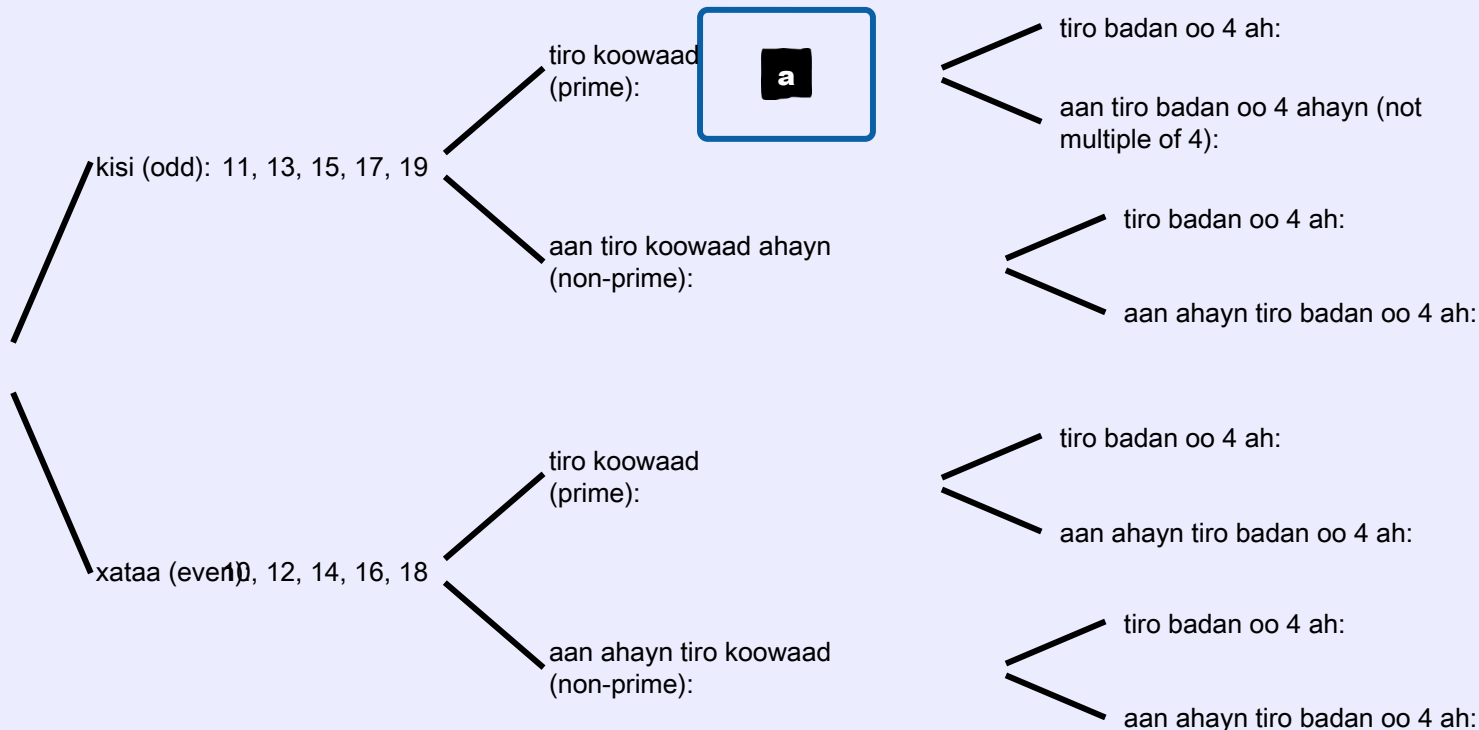
1

9

kuwa kale ma jiraan

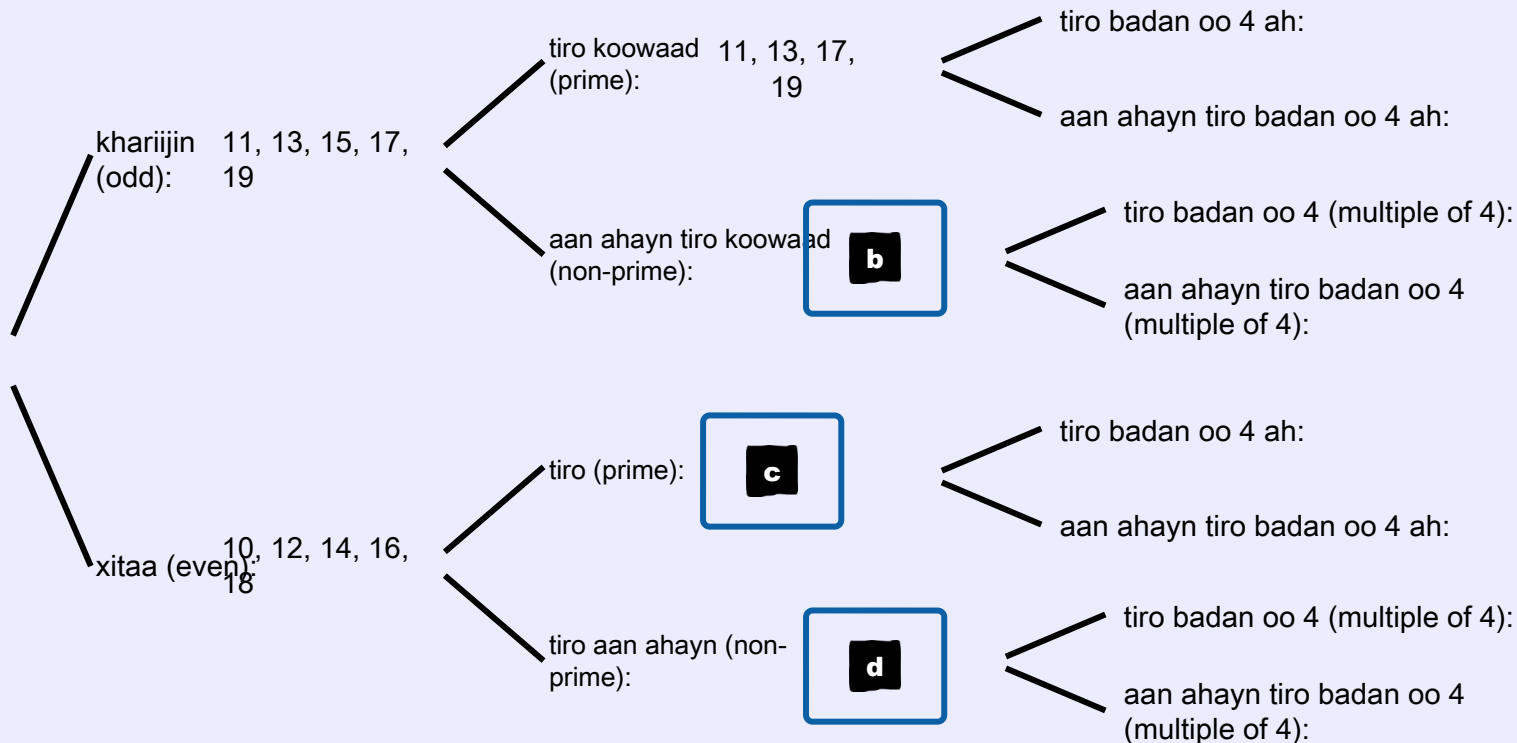
Geedaha natijada (outcome trees) ee dhacdooyin badan (multiple events)

Cali wuxuu duubi doonaa sac (dice) 10 dhinac ah oo leh tirooyin (integers) 10 ilaa 19.
Waa maxay natiiyooyinka (outcomes) geli lahaa sanduuqa calaamadeysan a?



Geedaha natijada (outcome trees) ee dhacdooyin badan

Cali wuxuu duubi doonaa sac (dice) 10 dhinac ah oo leh tirooyin (integers) 10 ilaa 19. Kee ka mid ah sanduuqyadan ayaa aan lahaan doonin natiijooyin (outcomes)?

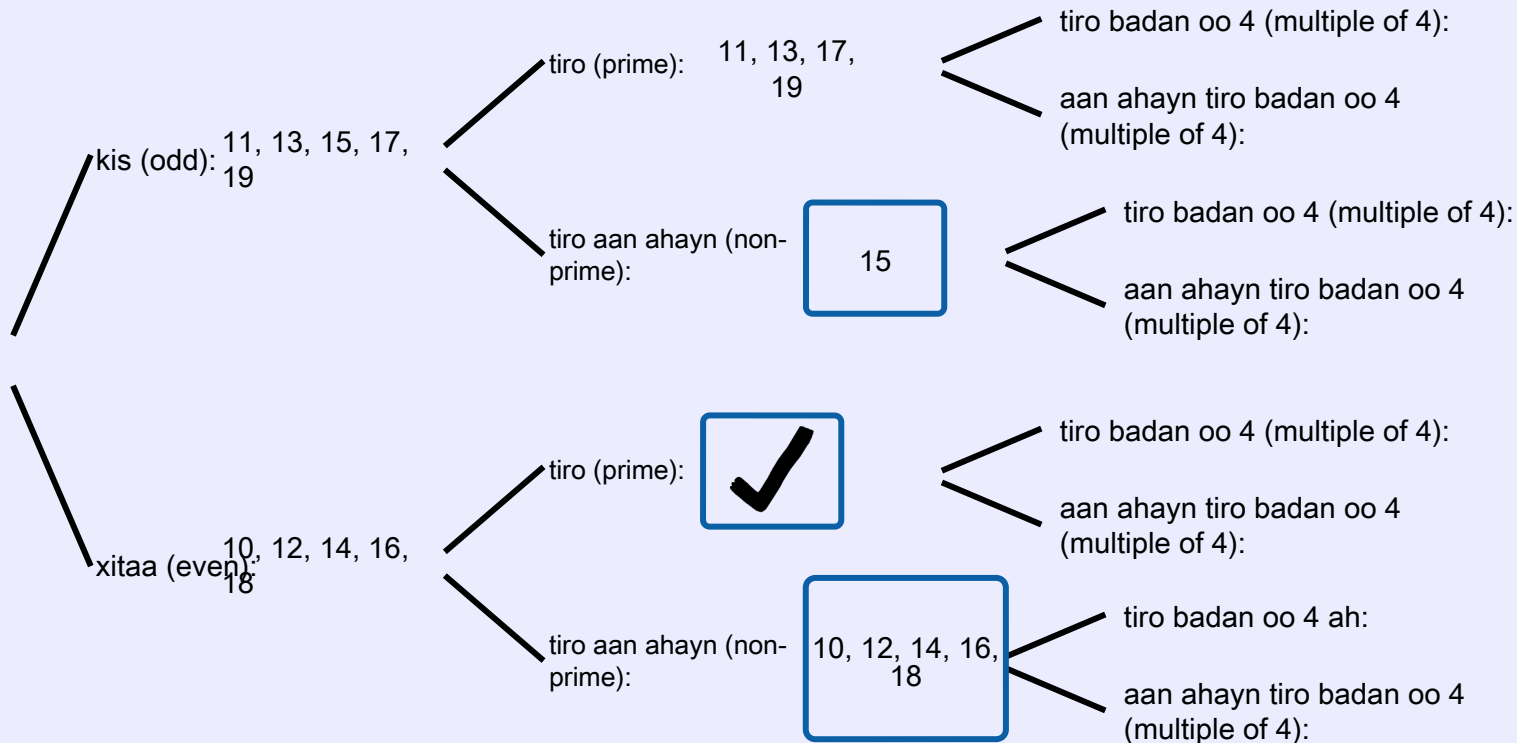


Geedaha natijada (Natijada trees) ee dhacdooyin badan

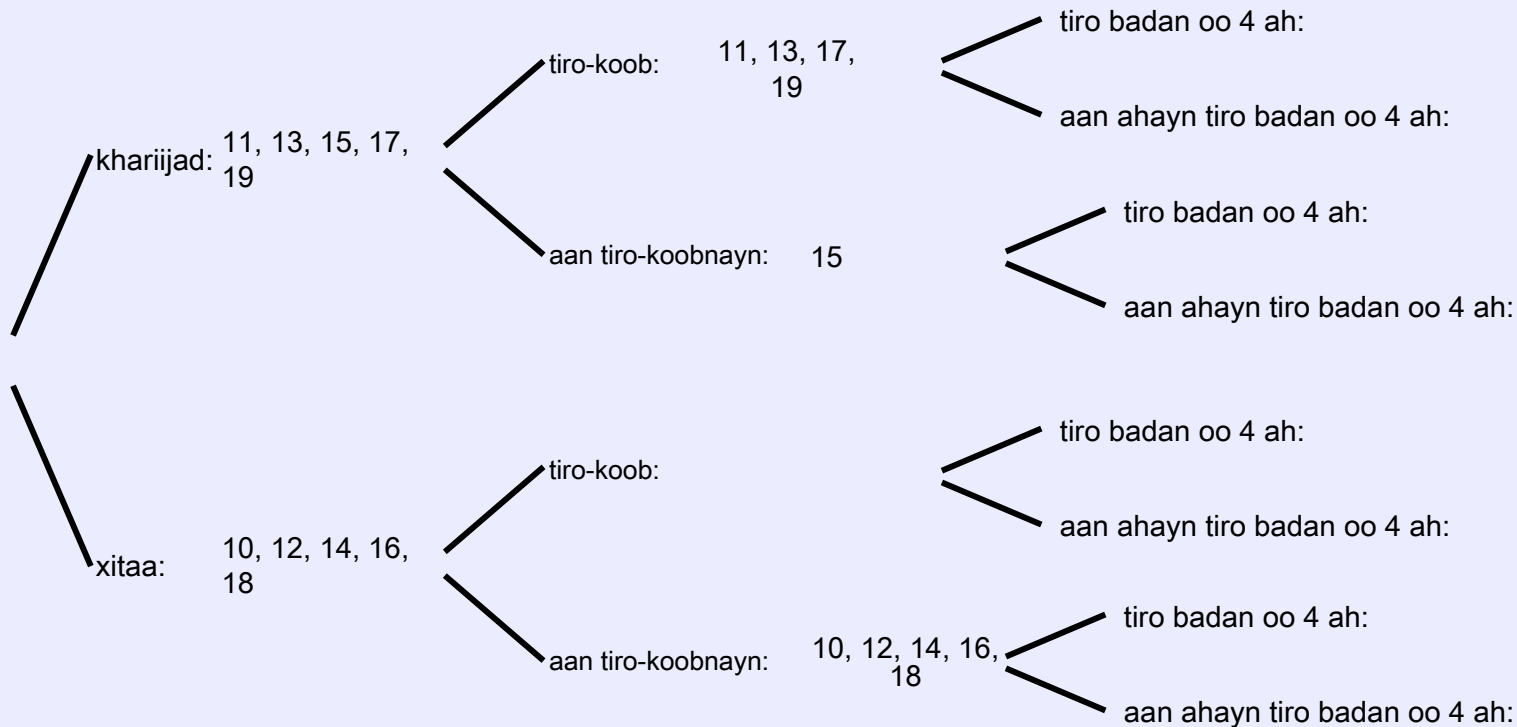


Hubi

Cali wuxuu rogi doonaa laydh 10-dhinac leh oo tirooyin 10 ilaa 19 leh.
Sanduuqee ayaa natijoooyin la'aan?



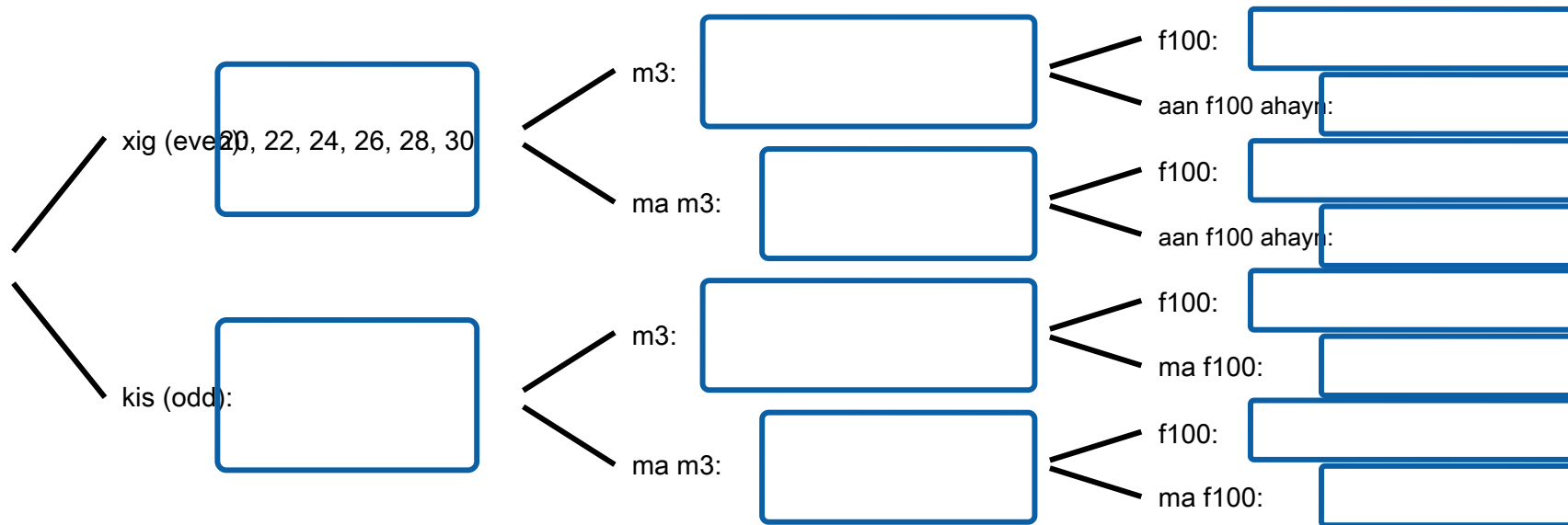
Cali wuxuu duubi doonaa sac 10-dhinac ah oo leh tirooyin 10 ilaa 19. Immisa natiijo ayaa jira dhacdooyinka: “xita a iyo tiro badan oo 4 ah”?



1) Saciid wuxuu wareejin doonaa wareejiye (spinner) leh tirooyin 20 – 30.

Saciid wuxuu tixgelinayaa dhacdooyinka: wareejiyuhu ku soo baxo tiro xig (even), tiro 3-la dhufan (m3), iyo qaybiyaha 100 (f100).

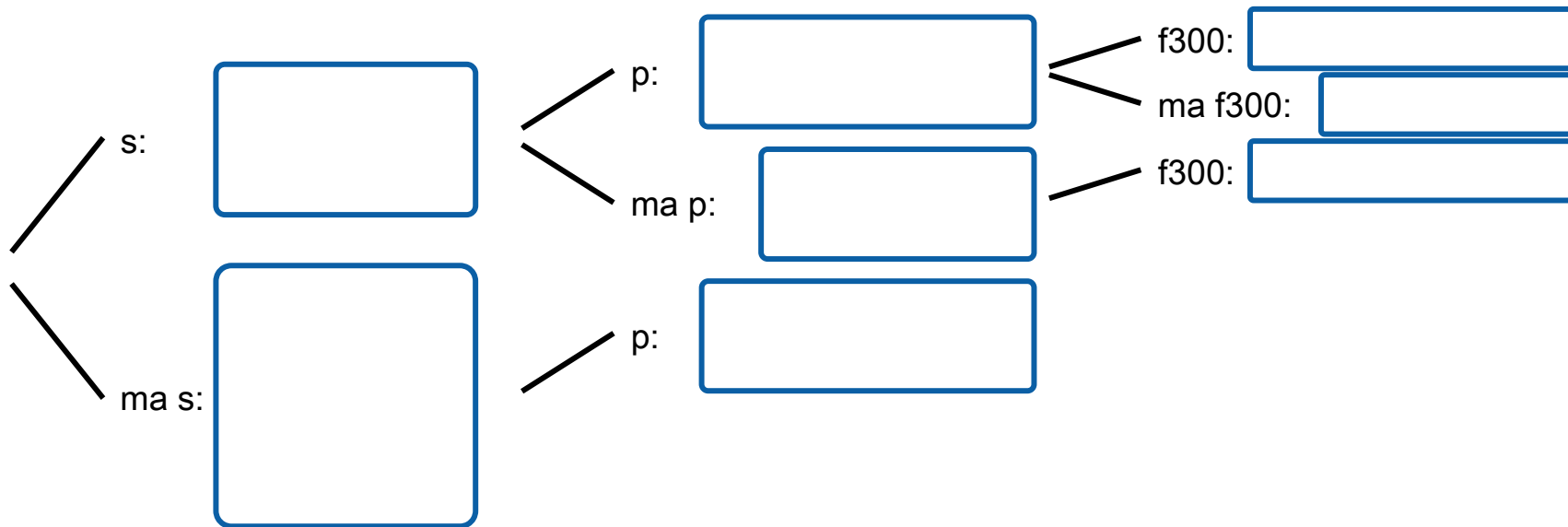
Buuxi meelaha bannaan ee geedka natiijooyinka (outcome tree) leh natiijooyinka wareejiyahan.



2) Cabdi wuxuu wareejin doonaa wareejiye leh tirooyin 15 – 25.

Cabdi wuxuu tixgelinayaa dhacdooyinka: wareejiyuhu ku soo baxo tiro laba jibaaran (s), tiro asli ah (p), iyo qaybiyaha 300 (f300).

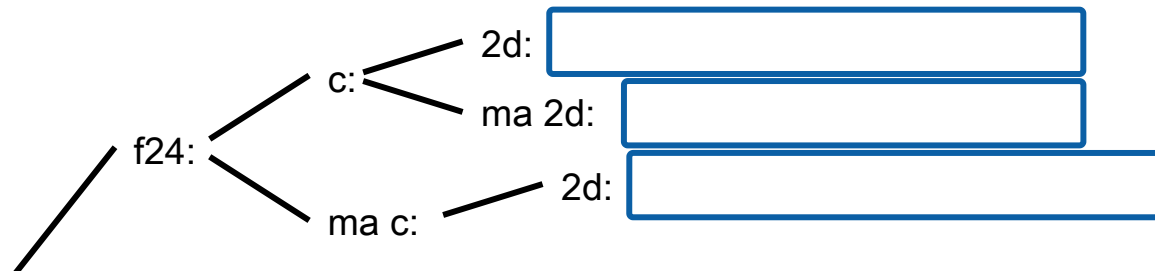
Buuxi meelaha bannaan oo dhammaystir geedkan natiijooyinka qayb ahaan ah.



3) Nuur wuxuu wareejin doonaa wareejiye leh tirooyin 0 ilaa 15.

Nuur wuxuu tixgelinayaa dhacdooyinka: wareejiyuhu ku soo baxo qaybiyaha 24 (f24), tiro saddex jibaaran (c), iyo tiro laba-godoodle ah (2d).

a) Dhammaystir geedka natiijooyinka qayb ahaan ah oo liis garo natiijooyinka dhamaadka laanta kasta.



b) Immisa natiijo ayaa ku habboon dhacdooyinka uu Nuur raadinayo?

4) Suad waxay haysaa wareeg (spinner) oo leh natiijooyinkan:

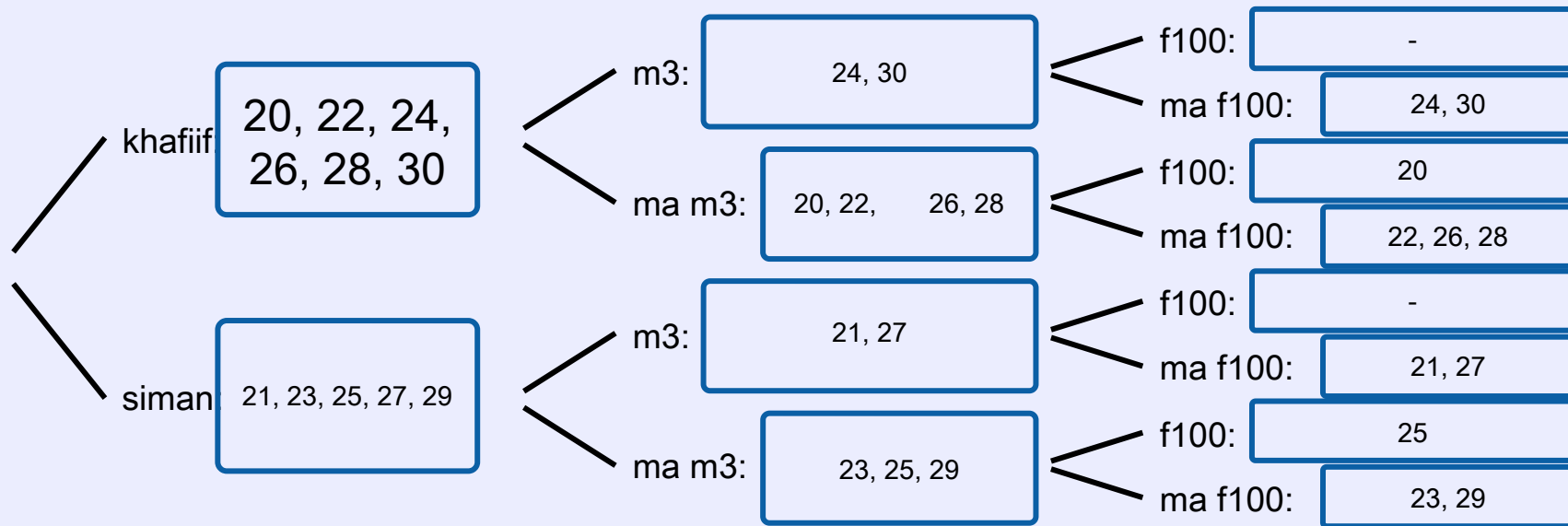
$\{1, 3, 4, 5, 8, 10, 12, 20, 25, 27, 36\}$

Suad waxay wareejin doontaa wareegga, waxayna tixgelinaysaa dhacdooyinka uu wareeggu ku soo degayo tiro siman (e), tiro laba jibaaran (s), tiro saddex jibaaran (c), iyo tiro saddexagal (t).

a) Samee oo buuxi geed natiijo oo afar lakab ah oo loogu talagalay natiijooyinka wareegga Suad.

b) Immisa natiijo oo ah tirooyin siman ayaa sidoo kale laba jibaaran iyo saddexagal labadaba?

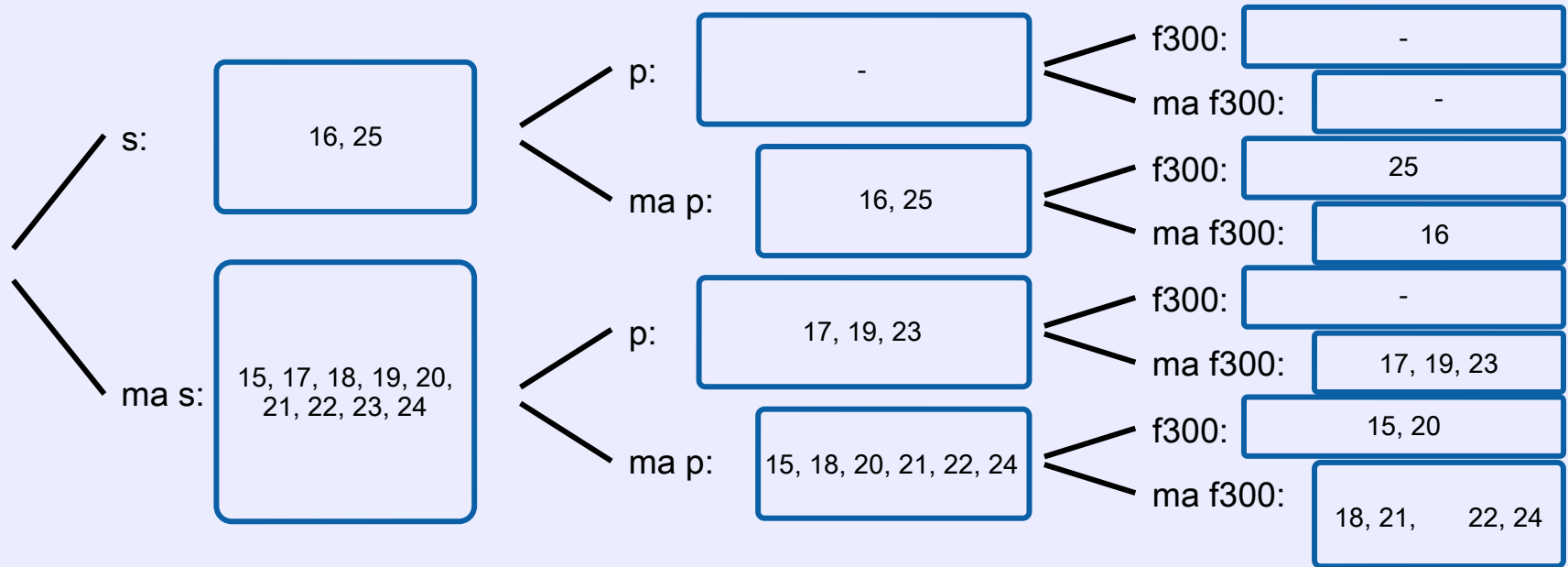
1) Saciid wuxuu wareejin doonaa wareeg leh tirooyinka 20 – 30.
 Saciid wuxuu tixgelinayaa dhacdooyinka uu wareeggu ku soo degayo tiro siman,
 tiro ka mid ah 3 (m3), iyo tiro ka mid ah 100 (f100).
 Buuxi meelaha bannaan ee geedkan natijada oo leh natiijooyinka wareeggan.



2) Cabdi wuxuu wareejin doonaa wareeg (spinner) oo leh tirooyin (integers) 15 – 25.

Cabdi wuxuu tixgelinayaa dhacdooyinka in wareeggu ku dhaco tiro laba jibaaran (square number) (s), tiro asli ah (prime number) (p), iyo qaybiyaha 300 (factor of 300) (f300).

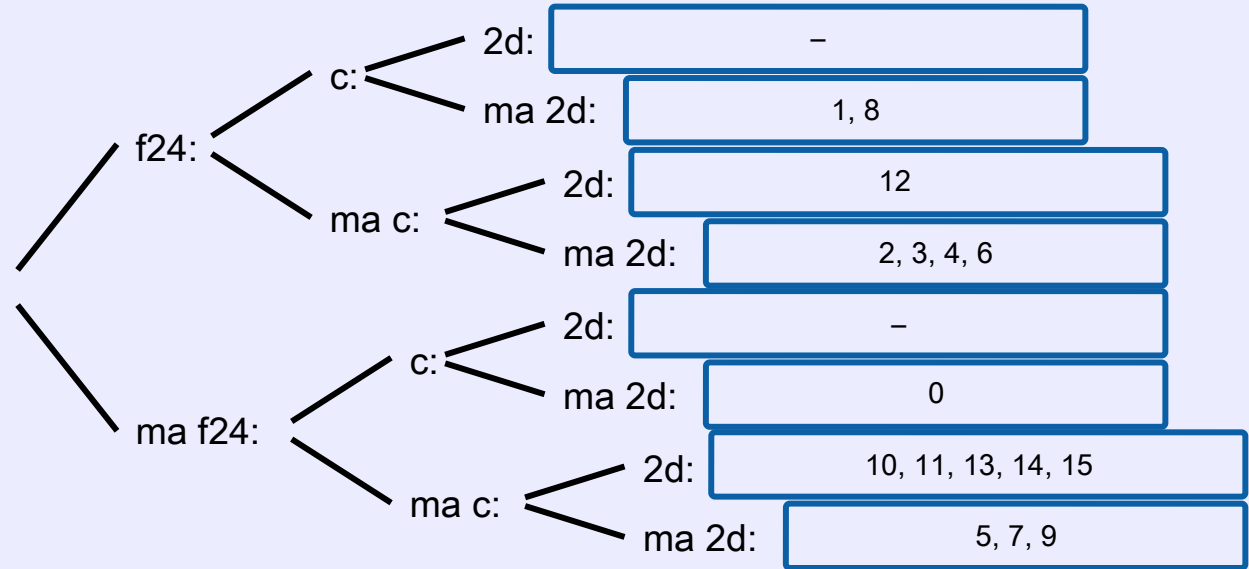
Buuxi meelaha bannaan oo dhammaystir geedka natiijooyinka (outcome tree).



3) Nuur wuxuu wareejin doonaa wareeg (spinner) oo leh tirooyin (integers) 0 ilaa 15. Nuur wuxuu tixgelinayaa dhacdooyinka in wareeggu ku dhaco qaybiyaha 24 (factor of 24) (f24), tiro saddex jibaaran (cube number) (c), iyo tiro laba-god ah (two-digit number) (2d).

a) Dhammaystir geedka natiijooyinka (outcome tree) qayb ahaan oo liis garo natiijooyinka dhamaadka laanta kasta.

b) Immisa natiijood ayaa u dhigma dhacdooyinka Nuur raadinayo?



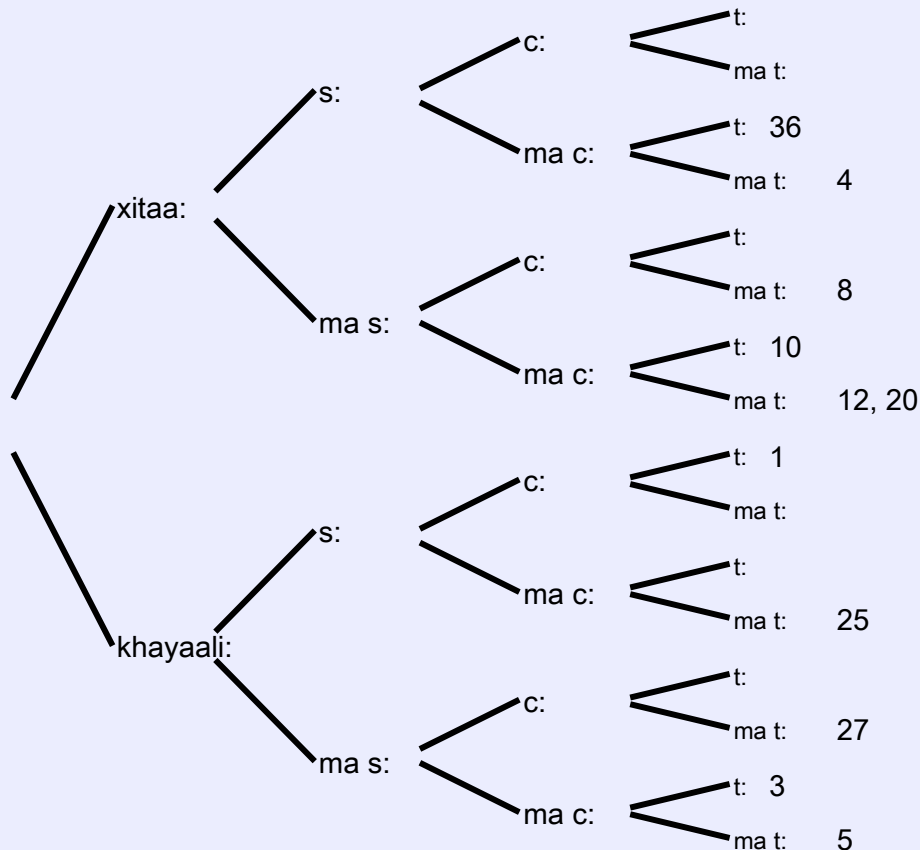
Ma jiraan wax qaybiyayaal 24 (factors of 24) ah oo ah tiro laba-god ah oo saddex jibaaran (cube numbers).

4) Suad waxay leedahay wareeg (spinner) oo leh natiijooyinka soo socda:

{1, 3, 4, 5, 8, 10, 12, 20, 25, 27, 36}

a) Samee oo buuxi geed natiijo (outcome tree) oo afar lakab ah oo loogu talagalay natiijooyinka wareegga Suad.

b) Immisa natiijooyin oo tirooyin xitaa (even) ah ayaa sidoo kale laba jibbaaran (square) iyo saddexagal (triangular) ah?



Kaliya mid: 36

Laamaha geedka natiijada waxay muujinayaan natiijooyinka tijaabo ama koox dhacdooyin.

Hal lakab oo laamo ah wuxuu muujinayaa hal marxalad oo tijaabo ah, ama hal dhacdo iyo dhacdo ka soo horjeeda.

Waxaa suurtoagal ah in ay jiraan saddex ama in ka badan oo lakabyo (layers) oo laamo (branches) ah.

Bannaanka muunad (sample space) waxaa laga samayn karaa geed natiijo (outcome tree) oo taxaya dhammaan natiijooyinka ka imanaya geed natiijo muujinaya heerar badan oo tijaabo (trial) ah.