MATEMATIKA

YOSH IQTIDOR EGALARI UCHUN

3 QISM

MATEMATIKA
III qism

Kitob haqida umumiy ma'lumot

- Bu "Yosh iqtidor egalari uchun" darsligidir.
- Kitob matematika fanining 3-qismiga bag'ishlangan.
- Mazmuni o'quvchilarning mantiqiy fikrlashini oshiradi.

Mundarija va mavzular tahlili

- Kitob jami 18 ta yirik mavzuni qamrab olgan.
- Dastlabki mavzular to'plamlar va kombinatorikaga bag'ishlangan.
- Oddiy va o'nli kasrlar batafsil yoritilgan.
- Foiz, proporsiya va o'rta arifmetik qiymat o'rgatiladi.
- Yakuniy boblarda ma'lumotlar tahlili va grafiklar berilgan.

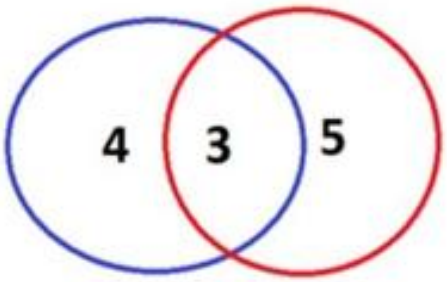
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1. To‘plamlar va Venn diagrammasi

Sinf ishi

1-6 Sardorning bir nechta rangli o‘yinchoqlari bor. O‘yinchoqlarning ba‘zilari faqat ko‘k rangda, ba‘zilari faqat qizil rangda, qolganlarida esa ham ko‘k ham qizil ranglar bor. Quyida rasmda rangli o‘yinchoqlarning sonlari haqida ma‘lumotlar berilgan.

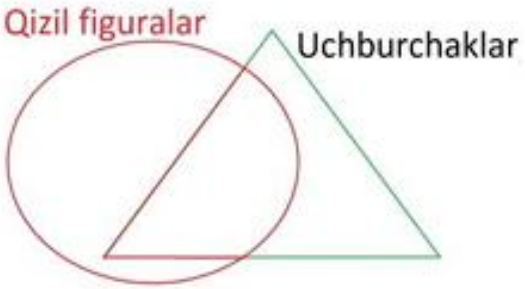


1. Sardorning jami o‘yinchoqlari nechta?
2. Sardorning nechta o‘yinchog‘ida ko‘k rang ham qizil rang ham bor?
3. Sardorning faqat ko‘k rangli o‘yinchoqlari nechta?
4. Sardorning nechta o’yinchog’ida ko’k rang ishtirok etgan?
5. Sardorning faqat qizil rangli o‘yinchoqlari nechta?
6. Sardorning nechta o’yinchog’ida qizil rang ishtirok etgan?

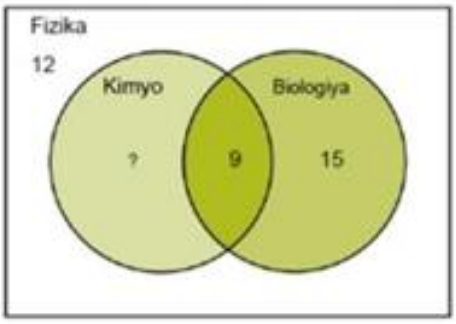
7-9 Rasmda bir nechta rangli figuralar berilgan.



Figuralar sonini quyida berilgan rasmdagi mos qismlarga yozing.

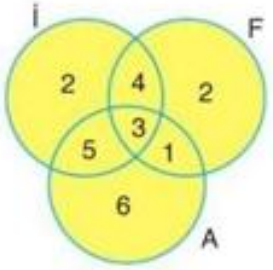


9 Maktabdagi 42 ta o‘quvchidan iborat guruhda barcha o‘quvchilar fizika fanini o‘rganishadi. Ularning 9 nafari fizikadan boshqa Kimyo va Biologiya fanlarini, 15 nafari esa fizikadan boshqa faqatgina biologiya fanini o‘rganadi. 12 nafar o’quvchi faqatgina fizika fanini o’rgansa, nechta o‘quvchi fizika va kimyo fanlarini o‘rganadi lekin biologiya fanini o‘rganmaydi?



A) 8 B) 12 C) 6 D) 9

10 Quyidagi Venn diagrammasida Arab, Fransuz va Ingliz tillarida so‘zlasha oladigan sinf o‘quvchilari soni ko‘rsatilgan. Agar bu sinf o’quvchilari kamida bitta tilni bilsalar, quyidagilardan qaysi biri noto’g’ri?

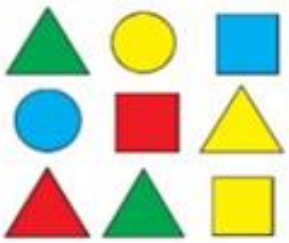


A) Faqat ingliz tilini biladiganlar soni 2 ta.
B) Uch tilni ham biladiganlar soni 3 ta
C) Faqat ikki tilda gapiradiganlar soni 13 ta.
D) Sinflardagi o’quvchilar soni 23 nafar.

11 5-sinf o‘quvchilari bir nechta masalani yechishdi. Dars so‘ngida ularning o‘qituvchisi 4 ta ro‘yxat tuzdi. 1-ro‘yxatda birinchi masalani ishlaganlar ro‘yxati, 2-ro‘yxatda faqatgina bitta masalani ishlaganlar ro‘yxati, 3-ro‘yxatda kamida bitta masalani ishlaganlar ro‘yxati, 4-ro‘yxatda esa ikkita masalani ishlaganlar ro‘yxatini yozdi. Qaysi ro‘yxat boshqalaridan kam bo‘lmaydi?
A) 1 B) 2 C) 3 D) 4

10

10 Quyida rasmda bir nechta shakllar berilgan.



a) Bu shakllar orasidan 1 ta sariq, 1 ta ko'k, 1 ta yashil va 1 ta qizil rangli 4 ta shaklni necha xil usulda tanlab olish mumkin?
b) Bu shakllar orasidan 1 ta uchburchak, 1 ta kvadrat va 1 ta aylanadan iborat 3 ta shaklni necha xil usulda tanlab olish mumkin?

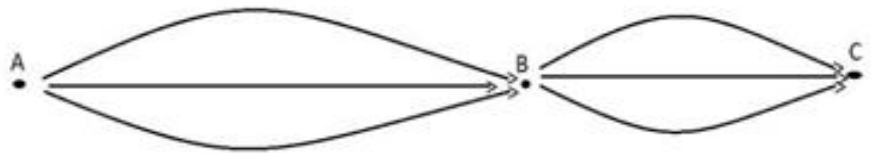
11 12 ta oq, 4 ta qizil va 2 ta sariq atirgul bor. Uchta har xil guldan iborat guldastani necha xil usulda tanlash mumkin?

12 "Rayhon" kafesining taomnomasida 3 xil somsa, 4 xil 1-taom, 5 xil 2- taom bor. Ushbu uchta turdagi taomga buyurtmani nech xil usulda berish mumkin?

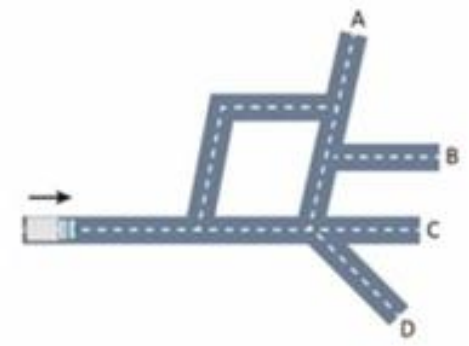
13 Olimjon quyida berilgan masalliqlarning barchasidan bir martadan foydalanib necha xil usulda "SENDVICH" tayyorlashi mumkin?



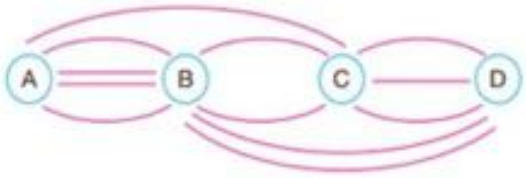
14 Quyidagi yo'llar orqali A dan C ga orqaga qaytmaslik sharti bilan necha xil usul bilan borish mumkin?



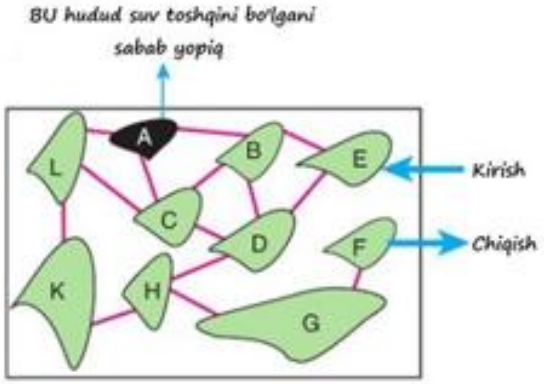
26 Quyidagi rasmda yuk mashinasi ko'rsatilgan yo'nalishda harakatlanmoqda. A,B,C va D yo'llarning har biri yuk mashinani asosiy yo'lga olib chiqadi, bunda yuk mashinasi ko'pi bilan 3 marta burulishi mumkin.U holda yuk mashina necha xil usulda asosiy yo'lga chiqa oladi?



27 A dan D ga orqaga qaytmaslik sharti bilan necha xil usulda borish mumkin?



28 Maktab o'quvchilar dam olish kunida hayvonot bog'iga tashrif buyurishdi. Bog'da 10 ta hayvon bor va ularning qafaslari A,B,C,D,E,F,G,H va L hududlarda joylashgan. Suv bosimining ko'tarilib ketishi oqibatida A hududda yashovchi baliqlar akvariumida suv toshib ketti va bu hududga tomoshabinlar kirishi taqiqlandi. Doniyor E hududdan kirib, har bir hududdagi hayvonlarni bir martadan ko'rib F hududdan chiqib ketishining necha xil yo'li bor?

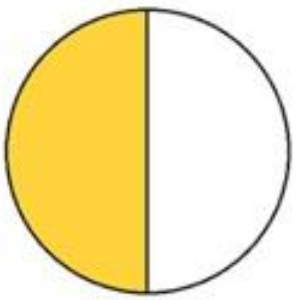


4. Oddiy kasrlar

Sinf ishi

1-4 Quyidagi shakllarning qanday qismi bo'yalgan.

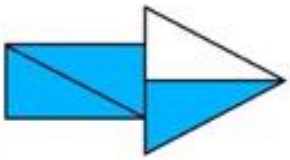
1



2



3



4



5-12 Bo'sh kataklarni to'ldiring.

5 $\frac{4}{8} = \frac{\boxed{?}}{2}$

6 $\frac{15}{18} = \frac{\boxed{?}}{6}$

7 $\frac{16}{28} = \frac{4}{\boxed{?}}$

8 $\frac{75}{180} = \frac{5}{\boxed{?}}$

9 $\frac{\boxed{?}}{20} = \frac{105}{300}$

10 $\frac{\boxed{?}}{1024} = \frac{17}{64}$

11 $\frac{165}{\boxed{?}} = \frac{15}{28}$

12 $\frac{324}{\boxed{?}} = \frac{12}{19}$

13-22 Qisqarmas kasr hosil bo'lguncha qisqartiring.

13 $\frac{8}{12}$

14 $\frac{48}{56}$

15 $\frac{28}{35}$

16 $\frac{36}{78}$

17 $\frac{24}{36}$

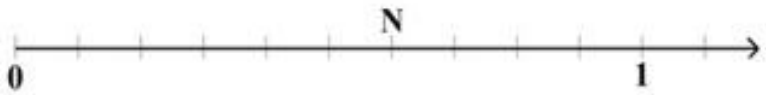
18 $\frac{75}{125}$

19 $\frac{75}{125}$

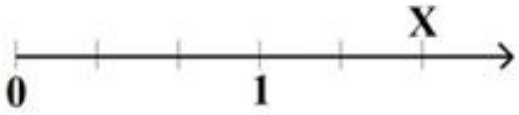
20 $\frac{88}{120}$

21 $\frac{3}{7} = \frac{\boxed{?}}{14} = \frac{\boxed{?}}{77} = \frac{150}{\boxed{?}}$ bo'sh katakdagi sonlar yig'indisini toping.

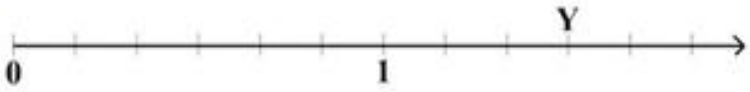
47 Quyida berilgan sonlar o'qida N nuqtaning koordinatasini toping.



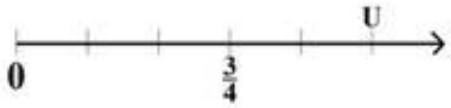
48 Quyida berilgan sonlar o'qida X nuqtaning koordinatasini toping.



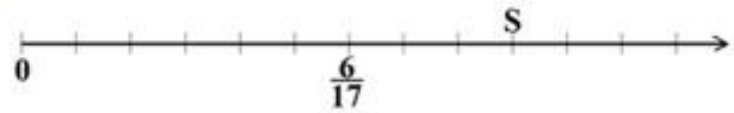
49 Quyida berilgan sonlar o'qida Y nuqtaning koordinatasini toping.



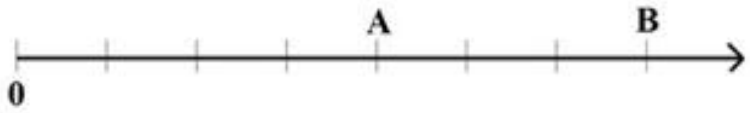
50 Quyida berilgan sonlar o'qida U nuqtaning koordinatasini toping.



51 Quyida berilgan sonlar o'qida S nuqtaning koordinatasini toping.



52 Quyida berilgan sonlar o'qida AB kesma uzunligi $\frac{3}{11}$ bo'lsa, A nuqtaning koordinatasini toping.



53 Maxraji 20 ga teng, qisqamas to'g'ri kasrlar sonini toping.

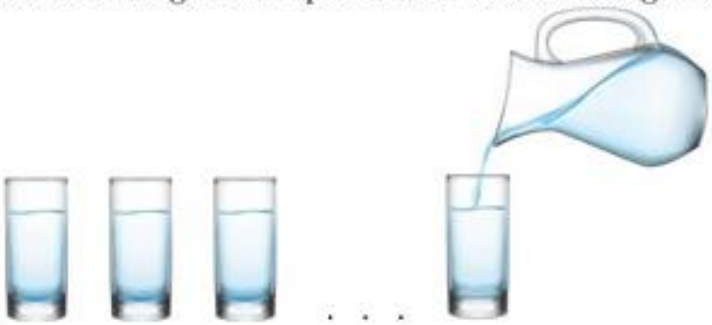
54 $\frac{17}{24}$ dan kichik maxraji 24 ga teng bo'lgan qisqarmas kasrlar sonini toping.

55 $\frac{23}{60}$ dan katta qisqarmas to'g'ri kasrlar sonini toping.

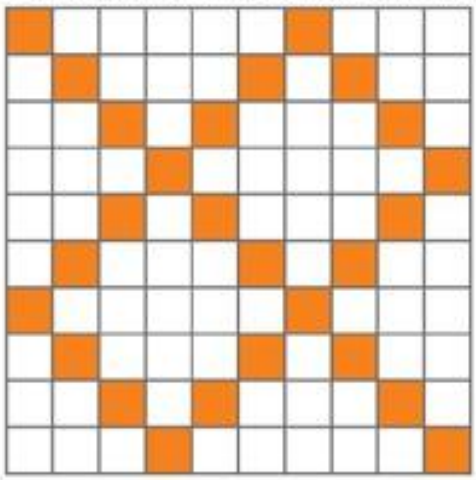
17 Quyidagi rasmda har bir idishdagi suv miqdori berilgan. Ikkinchi idishdagi suv birinchi idishdagi suv bilan to‘ldirilgandan so‘ng, qolgan barcha suv uchinchi idishga quyildi. Agar har bir idishning hajmi 1 litr bo‘lsa, uchinchi idishning qanday qismi suv bilan to‘lmay qoladi? Javobingizni o‘nli kasr ko‘rinishida yozing.



18 30 litrli idishdagi barcha suv 100 ta bir xil stakanga teng miqdorda taqsimlandi. Har bir stakandagi suv miqdori necha litr? Javobingizni o‘nli kasr ko‘rinishida yozing.



19 Quyidagi shaklning qancha qismi bo‘yalgan? Javobingizni o‘nli kasr ko‘rinishida yozing.



20-27 O‘nli kasrlarni oddiy kasr yoki aralash son ko‘rinishida ularni qisqartirib yozing.

20 $2,4$

21 $0,6$

22 $7,36$

23 $42,05$

24 $0,02$

25 $5,444$

26 $625,012$

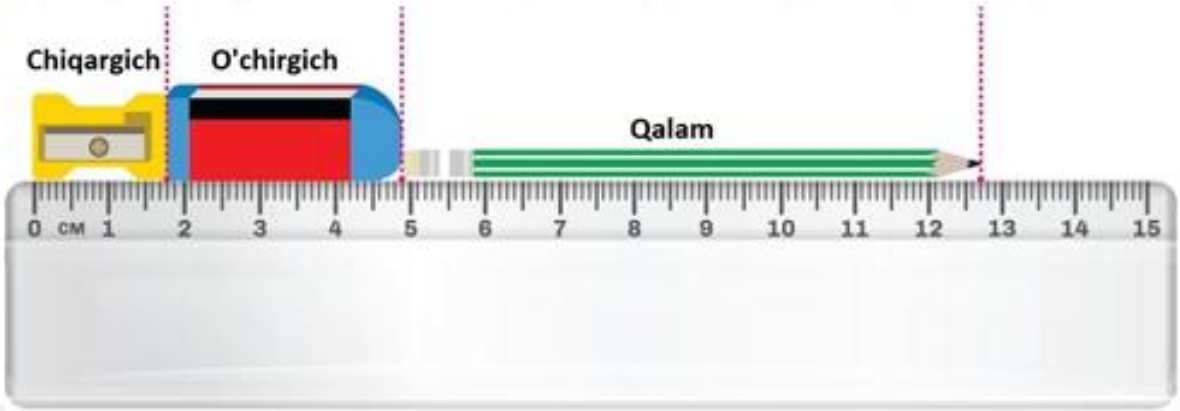
27 $0,0003$

28 Quyidagi rasmdagi ma’lumotlardan foydalanib, K va L nuqtalarning koordinatasini toping.



29 Quyidagi sonlarning nechtasining mingdan birlar xonasidagi raqami 3 ga teng?
$33,323$; $1,03737$; $303,3993$; $25,43$; $3463,031$; $333,3503$.

30 Quyidagi rasmdagi ma’lumotlardan foydalanib, qalamning uzunligini toping.

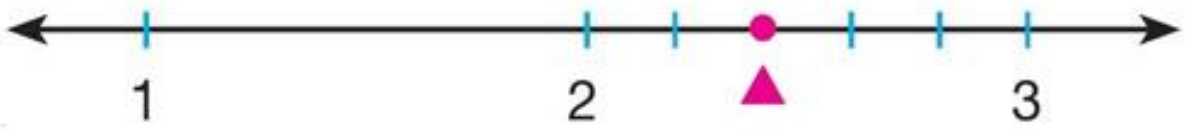


31 324 santimetrni, detsimetrda ifodalang.

32 26 millimetrni, metrda ifodalang.

3 72 santimetrni, metrda ifodalang.
A) 7,2 B) 720 C) 0,072 D) 0,72

4 Quyidagi sonlar o‘qida 2 dan 3 gacha bo‘lgan oraliq beshta teng qismga bo‘lingan. Quyidagilardan qaysi biri uchburchakning koordinatasiga teng?



A) 2,2 B) 2,4 C) 2,6 D) 2,8

5 Quyida ba’zi sonlarning o‘nli kasrda ko‘rinishi berilgan.

(a) $\frac{7}{25} = 0,28$

(b) $\frac{37}{50} = 0,74$

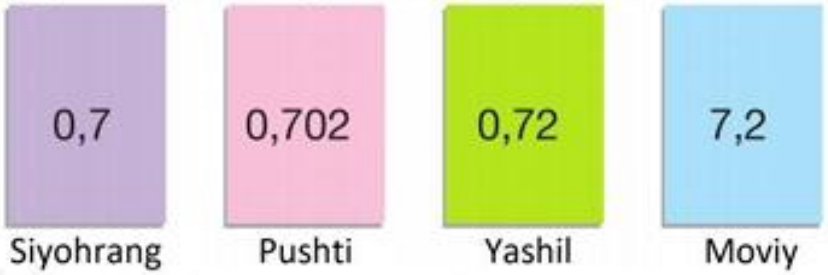
(c) $\frac{1}{5} = 0,02$

(d) $\frac{3}{40} = 0,75$

Yuqoridagilardan nechtasi noto‘g‘ri?
A) 1 B) 2 C) 3 D) 4

6 5, 2, 3 va 7 raqamlaridan bir martadan foydalanib 25 dan kichik bo‘lgan eng katta va 25 dan katta bo‘lgan eng kichik o‘nli kasrlar yig‘indisini toping.
A) 49,31 B) 49,12 C) 51,1 D) 48,94

7 Quyida rangli kartalarga o‘nli kasrlar yozilgan.



Eng kichik o‘nli kasr qanday rangli kartaga yozilgan?
A) Siyohrang B) Pushti C) Yashil D) Moviy

35 Nodir va Nozim aka-ukalar. Ular birgalikda koptok uchun pul yig'moqchi. Nodirning o'zi kunlik pullarni tejash orqali koptokni 18 kunda sotib olishi mumkin, Nozimning o'zi esa kunlik pullarni tejash orqali koptokni 9 kunda sotib olishi mumkin. Ular birgalikda pul tejash orqali koptokni necha kunda sotib olishlari mumkin?

36 Basseynni ikkita nasos yordamida to'ldirish mumkin. Birinchi nasosning o'zi basseynni $\frac{3}{4}$ soatda, ikkinchisining o'zi esa 1 soat 30 minutda to'ldira oladi. Ikkala nasos birgalikda ishga tushirilsa, ular bo'sh basseynni qancha vaqtda to'ldira oladi?

Mavzuga doir testlar:

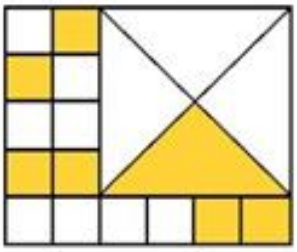
1 Imtihonda qatnashgan o'quvchilarning $\frac{3}{8}$ qismi 70% dan yuqori, $\frac{7}{16}$ qismi 70% past natijaga erishishdi. Agar o'quvchilarning 9 tasi 70% natija ko'rsatgan bo'lsa, imtihonda nechta o'quvchi qatnashgan?

A) 16 B) 32 C) 48 D) 72

2 Sayyoh jami yo'lni uch kunda bosib o'tmoqchi. birinchi kuni $\frac{2}{7}$ qismini, ikkinchi kuni esa $\frac{4}{7}$ qismini o'tdi. Shu ikki kunda u 84 km yo'l bosgan bo'lsa, u yana necha kilometr yo'l yurishi kerak?

A) 12 km B) 14 km C) 20 km D) 24 km

3 Quyida berilgan shaklning qanday qismi bo'yalgan(shakldagi kichik to'g'ri to'rtburchakning har biri tomoni teng bo'lgan kvadratlar)?

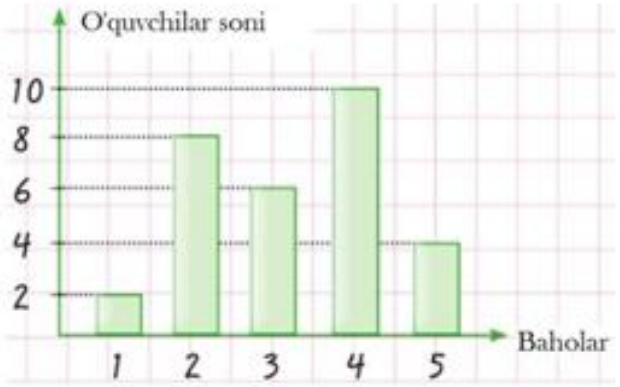


A) $\frac{1}{3}$ B) $\frac{2}{5}$ C) $\frac{3}{10}$ D) $\frac{7}{15}$

4 Nodirdagi pulning $\frac{1}{4}$ qismi, Hoshimdagi pulning $\frac{1}{3}$ qismiga teng. Agar ikkala bolada umumiy 84000 so'm pul bo'lsa, Ularning pullari miqdori bir xil bo'lishi uchun Nodir Hoshimga qancha pul berishi kerak?

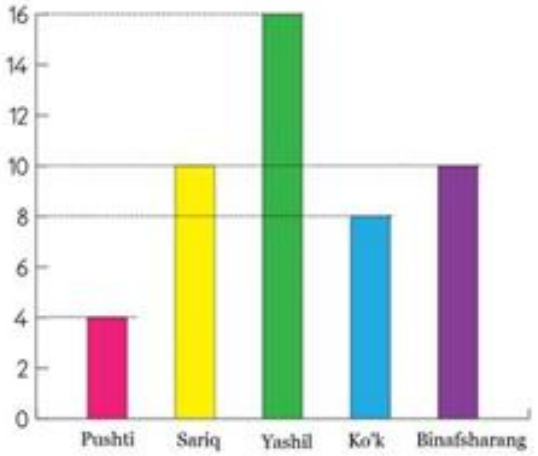
A) 6000 so'm B) 8000 so'm C) 12000 so'm D) 4000 so'm

8 Quyidagi grafikda 4-A sinf o’quvchilarning matematika fanidan imtihonda olgan baholari ko‘rsatilgan.



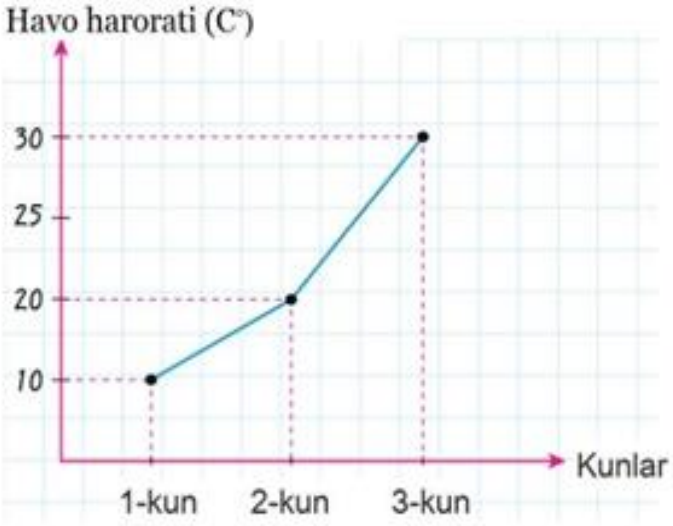
a) Nechta o’quvchi 5 baho olgan?
b) Qaysi bahoni eng ko‘p sondagi o‘quvchilar olgan?
c) 4 baho olgan o‘quvchilar soni 2 baho olgan o‘quvchilar sonidan nechta ko‘p?
d) Matematika imtihonida nechta o’quvchi qatnashgan?

9 Maktab o’quvchilar o’rtasida kim qaysi rangni yoqtirishi haqida so’rovnoma o’tkazildi. Quyidagi grafikda shu so’rovnoma natijalari keltirilgan.



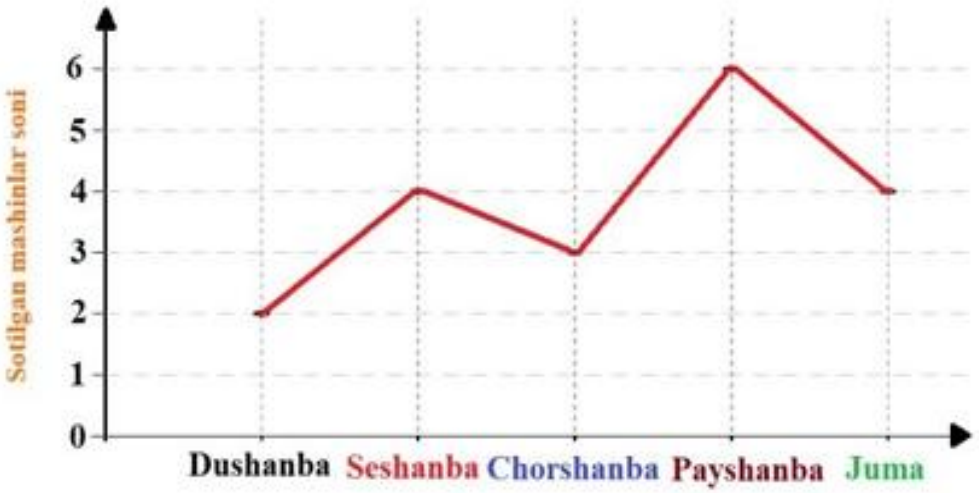
a) Qaysi rangni eng ko’p sondagi o’quvchi tanlagan?
b) Yashil rangni tanlaganlar soni pushti rangni tanlaganlar sonidan nechta ortiq?
c) Ko‘k va binafsha rangni tanlagan o‘quvchilarning umumiy sonini toping.
d) Ranglar haqida so’rovnomada necha kishi qatnashgan?

12 Quyidagi grafikda 3 kun davomida shaharda qayd etilgan havo harorati aks ettirilgan. (C° - gradus)



a) Qaysi kunda eng yuqori havo harorati qayd etilgan?
b) 1-kunda havo harorati necha gradus bo'lgan?
c) 3-kundagi havo harorati 1-kunga nisbatan necha gradusga yuqori bo‘lgan?

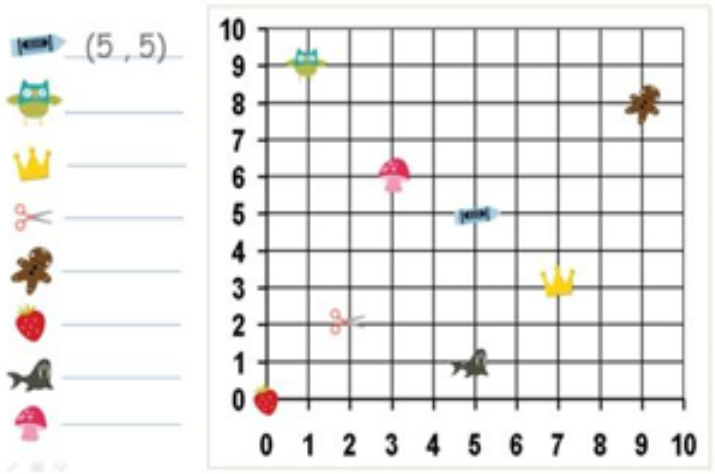
13 Quyidagi grafikda 5 kun davomida sotilgan mashinalar soni ko'rsatilgan.



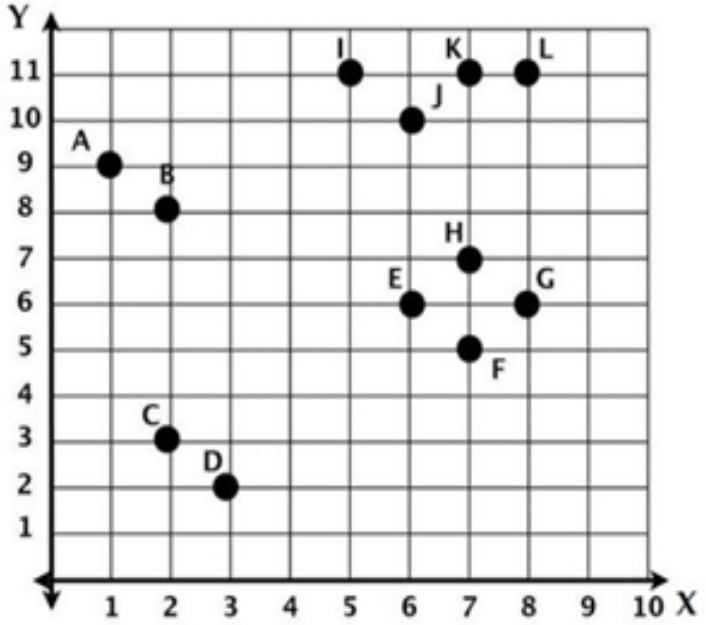
a) 5 kun davomida umumiy nechta mashina sotilgan?
b) Qaysi kuni eng ko'p mashina sotilgan?
c) Chorshanba kuni nechta mashina sotilgan?
d) Dushanba kuni Chorshanba kunga qaraganda nechta mashina ko'p sotilgan?

Uy ishi

1 Quyida rasmdagi o‘yinchoqlarning kordinatalarini toping.



2 Quyida rasmdagi nuqtalarning kordinatalarini toping.



A. (____ , ____) E. (____ , ____) I. (____ , ____)

B. (____ , ____) F. (____ , ____) J. (____ , ____)

C. (____ , ____) G. (____ , ____) K. (____ , ____)

D. (____ , ____) H. (____ , ____) L. (____ , ____)

Quyida diagrammada 160 ta bolaning qanday mevani yoqtirishi taqsimoti berilgan. Diagramma asosida 16-20 mashqlarni bajaring.



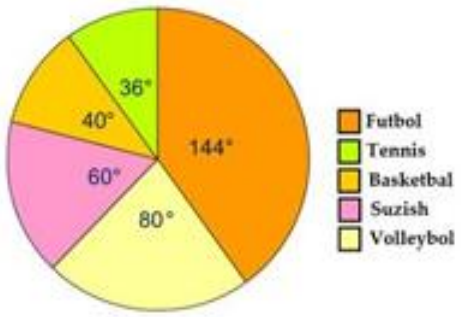
16 Nechta bola olmani yoqtiradi?

17 Qaysi mevalarni teng miqdordagi bolalar yoqtiradi?

18 Uzumni yoqtiradigan bolalar soni olmani yoqtiradigan bolalar sonidan nechta kam?

19 Diagrammaga ko'ra quyidagilardan nechtasi xato?
a) Bananni yoqtiradigan bolalar soni olmani yoqtiradigan bolalar sonidan ko'p.
b) Qulupnayni yoqtiradigan bolalar soni boshqa har bir mevani yoqtiradigan bolalar sonidan ko'p.
c) Eng kam sondagi bolalar apelsinni yoqtiradi.
d) Olmani yoqtiradigan bolalar soni banan va uzumni yoqtiradigan bolalarning birgalikdagi sonidan ko'p.

Quyidagi doiraviy diagrammada maktabdagi 360 ta 4- sinf o'quvchilarining qaysi sport turiga qatnashishi taqsimoti berilgan. Diagramma asosida 20-24 mashqlarni bajaring.



21 Sardor opasiga oq rangli, xotirasi kamida 256 GB bo'lgan telefon, singlisiga esa ko'k rangli xotirasi kamida 64 GB bo'lgan telefon xarid qilmoqchi. Quyidagi jadvalda "Malika" savdo majmuasidagi telefon narxlari haqida ma'lumot keltirilgan. Sardor eng kamida qancha xarajat qilishi kerak?

Telefon modeli	Mavjud ranglari	Narxlari
Iphone 11 (64 GB)	Oq, qora	550 $
Iphone 11 (128 GB)	Oq, qora, qizil	630 $
Iphone 12 (128 GB)	Ko'k, yashil, oq	740 $
Iphone 12 (256 GB)	Ko'k, qora, yashil	850 $
Iphone 13 (128 GB)	Ko'k, oq, tillarang	820 $
Iphone 13 pro (1 TB)	Oq, ko'k, qora, yashil	1 400 $
Iphone 13 pro max (256 GB)	Oq, ko'k, qora	1 280 $

22 Jamshid uch xonali, maydoni 80 m^2 dan kam bo'lmagan, ko'p qavatli binoning ikkinchi yoki uchinchi qavatidan uy sotib olmoqchi. Agar uy yaxshi ta'mirlanmagan bo'lsa qo'shimcha 5000 $ xarajat qilish kerak bo'ladi. Uning 75 000 $ puli bor. Quyidagi jadvalda u tanlashi mumkin bo'lgan uylar haqida ma'lumot keltirilgan. Jamshid qaysi uyni tanlasa ko'proq pul tejaydi?

Uylar	Qavati	Xonalari soni	Maydoni	Ta'mirlanganligi	Narxi
1	3	2	60	Yaxshi	45 000 $
2	4	3	84	Yaxshi emas	60 000 $
3	3	3	88	Yaxshi	65 000 $
4	2	3	75	Yaxshi emas	55 000 $
5	2	3	82	Yaxshi emas	57 000 $
6	3	3	80	Yaxshi	70 000 $