1 **(3,1 ball)** Hisoblang: $\dfrac{2^0+2^5}{2^0-2^4}$

A)$\dfrac{11}{5}$ B)$-\dfrac{33}{17}$ C)$-\dfrac{11}{5}$ D)$\dfrac{13}{3}$

2 **(3,1 ball)** Akmalga matematikadan IDC imtixoniga tushgan 55 ta savoldan: 10 tasi arifmetika; 30 ta algebra va 15 ta savoli geometriyaga oid. Akmal arifmetik savollarning 60% iga, algebra savollarining 50% iga, geometriya savollarining 40% iga javob bersa ham sertifikat ola olmadi. Agar setifikat olish uchun 60% masalani ishlash kerak bo'lsa, Akmal yana nechta masala ishlashi kerak edi?

A)3 B)4 C)5 D)6

3 **(3,1 ball)** Birinchi kvadratdagi qonuniyat asosida ikkinchi kvadrat hosil qilindi. $a+b$ ning qiymatini toping.

x^2	x^2-x
x^2+x	x^3

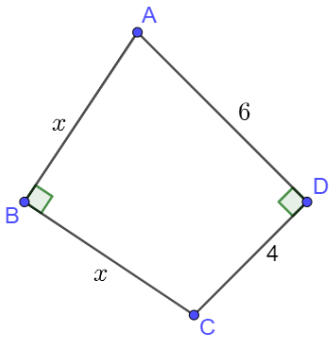
a	12
6	b

A)12 B)-18 C)80 D)-48

4 **(3,1 ball)** $\dfrac{(a^2+b^2)^2-c^2-4a^2b^2}{a^2-c-b^2}$ ifodaning qiymatini $a=2022; b=2023; c=2024$ bo'lganda hisoblang.

A)-2020 B)-2021 C)-2022 D)-2023

5 **(3,1 ball)** AD=6; DC=4; $\angle ABC=\angle ADC=90°$; AB=BC bo'lsa, AB ning uzunligini toping.



A)$\sqrt{26}$ B)$2\sqrt{6}$ C)$2\sqrt{7}$ D)$2\sqrt{13}$

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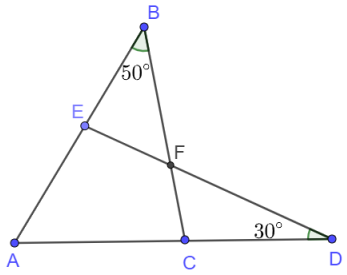
6 **(4,2 ball)** $\angle B = 50°$ va $\angle D = 30°$ bo'lsa, $\angle EFC - \angle EAC$ ning qiymatini toping.

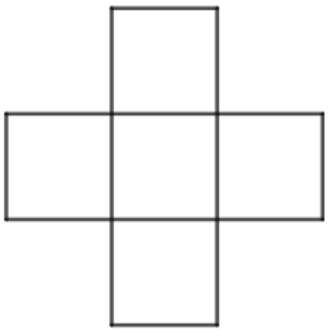


A)80° B)100° C)110° D)120°

7 **(4,2 ball)** $a^2 + 7a + 8 = b$ bo'lsa, $3a - b$ ning eng katta qiymatini toping.
A)-8 B)-4 C)-2 D)-12

8 **(4,2 ball)** O'nlar xonasidagi raqamini o'chirganda qiymati 9 marta kichiklashadigan barcha 3 xonali sonlar yig'indisini toping.
A)945 B)990 C)1080 D)1170

9 **(4,2 ball)** 2;3;8;9;12;15 sonlaridan 5 tasi quyidagi shakldagi 5 ta kvadratga shunday joylashtirildiki, bunda gorizontal qatordagi sonlar yig'indisi vertikal qatordagi sonlar yig'indisiga teng. Bu yig'indining eng katta qiymatini toping.



A)36 B)27 C)29 D)30

10 **(4,2 ball)** Agar $f(x) = ax + b$ uchun $f(f(f(x))) = 8x + 21$ bo'lsa, $f(f(0))$ ni toping.
A)3 B)7 C)8 D)9

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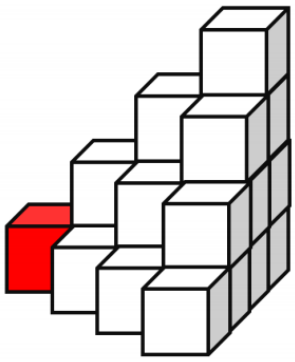
11 **(5,3 ball)** Hisoblang: $[\sqrt{2^2-2}]+[\sqrt{3^2-3}]+[\sqrt{4^2-4}]+...+[\sqrt{100^2-100}]$ (bu yerda $[a]$ soni a ning butun qismi).
A)4900 B)4950 C)5000 D)5050

12 **(5,3 ball)** Koeffitsiyentlari butun bo'lgan kvadrat tenglamaning diskriminanti 1 dan 20 gacha oraliqda nechta qiymatni qabul qiladi?
A)10 B)11 C)12 D)9

13 **(5,3 ball)** Tomonlari 2 va 4 ga teng bo'lgan to'g'ri to'rtburchak yarim doiraga ichki chizilgan. Yarim doira yuzasining eng katta qiymatini toping.
A)$\frac{17\pi}{2}$ B)$\frac{17\pi}{4}$ C)8π D)4π

14 **(5,3 ball)** Quyidagi jism bir nechta kichik kubchalardan tashkil topgan. 15:40 dan boshlab, Nodir soati har bong urganda ixtiyoriy qizil rangli kubchalar bilan umumiy yoqqa ega kubchalarni ham qizil rangga bo'yaydi. 19:50 ga kelib jismdagi nechta kubcha qizil rangga bo'yalgan bo'ladi. (Izoh: Nodirning soati 12:00 dan boshlab 1 soatda bir marta bong uradi.)



A)12 B)13 C)15 D)16

15 **(5,3 ball)** 1 dan 19 gacha natural sonlar ichidan necha xil usulda o'rta arifmetigi butun son bo'ladigan ikkita sonni tanlab olish mumkin?
A)90 B)72 C)100 D)81

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16 **(7,4 ball)** Hisoblang: $\frac{1}{\sqrt{1^3+2^3}}+\frac{1}{\sqrt{1^3+2^3+3^3}}+...+\frac{1}{\sqrt{1^3+2^3+3^3+...+1000^3}}$

A) $\frac{1000}{1001}$ B) $\frac{999}{1000}$ C) $\frac{999}{2002}$ D) $\frac{999}{1001}$

17 **(7,4 ball)** ABC uchburchakda $\angle ABC = 20°, \angle ACB = 40°$. Agar $BC - AB = 12$ bo'lsa, A uchidan tushirilgan bissektrisa uzunligini toping.

A)9 B)12 C)18 D)24

18 **(7,4 ball)** $\{a_n\}$ ketma ketlikda $a_1 = 4; a_2 = -2$ va $a_{n+2} = a_{n+1} - a_n$ bo'lsa, $a_1 + a_2 + .. + a_{2024}$ ni hisoblang.

A)-4 B)-2 C)2 D)4

19 **(7,4 ball)** Agar $x_1 = \frac{1+\sqrt{13}}{2}$ va $x_2 = \frac{1-\sqrt{13}}{2}$ sonlari $x^4+x^3+2x^2+ax+b$ ko'phadning ildizlari bo'lsa, $a+b$ ning qiymatini toping.

A)-31 B)-32 C)-33 D)-34

20 **(7,4 ball)** Uch xonali $\overline{IDC}$ va $\overline{IMO}$ sonlari $\overline{IDC} > \overline{IMO}$ tengsizlikni qanoatlantiradi. Agar bu yerda turli harflar turli raqamlarni, bir xil harflar esa bir xil raqamlarni ifodalasa, tengsizlikning yechimlar sonini toping.

A)15120 B)13608 C)7240 D)27216

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