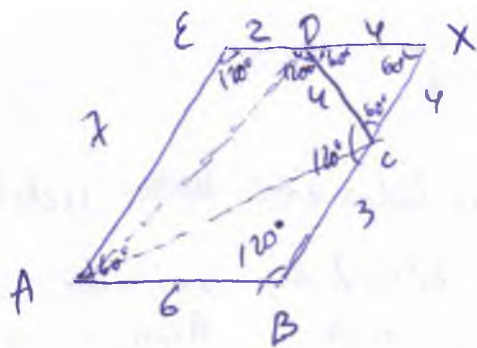


2



5 burchakning ichki burchaklar figuralisi $180(5-2) = 540^\circ$
 $\frac{540^\circ - 60^\circ}{4} = 120^\circ \rightarrow AE \parallel BC$
 $AB \parallel ED$.

$X \rightarrow \triangle OABC$ ning ketishish nuqtasi $\triangle XDC \rightarrow$ muntazam
 $CD = DX = CX = 4$.

$AEXB \rightarrow$ parallelogram.

$AE = BX = 7 \rightarrow CB = 3$
 $AB = EX = 6 \rightarrow ED = 2$

$h \rightarrow \triangle DC$ gacha borgan masofa bolsin (ya'ni balandlik)

$S_{AEXB} = S_{AED} + S_{XDC} + S_{ABC} + S_{ADC}$

$\frac{6 \cdot 7 \cdot \sqrt{3}}{2} = \frac{7 \cdot 2 \cdot \sqrt{3}}{4} + \frac{6 \cdot 3 \cdot \sqrt{3}}{4} + \frac{4 \cdot 4 \cdot \sqrt{3}}{4} + \frac{4 \cdot h}{2}$

$21\sqrt{3} = 8\sqrt{3} + 4\sqrt{3} + 2h$
 $9\sqrt{3} = 2h$

$h = \frac{9\sqrt{3}}{2}$

J: $\frac{9\sqrt{3}}{2}$

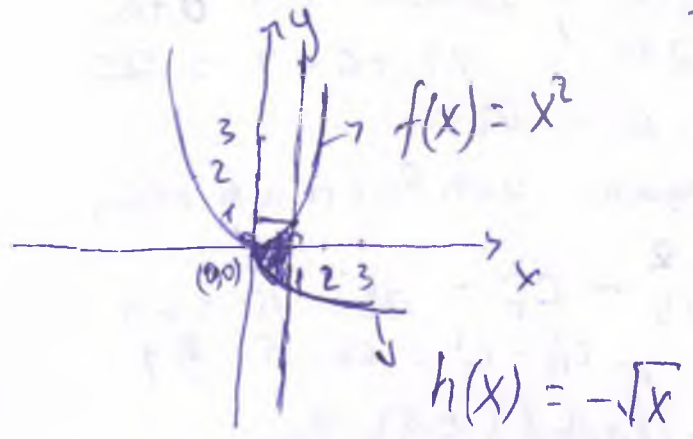
3 $(y + \sqrt{x})(y - x^2)\sqrt{1-x} \leq 0$

$\sqrt{x} \rightarrow x \geq 0$

$\sqrt{1-x} \rightarrow 1-x \geq 0 \quad x \leq 1$

$\sqrt{1-x} \geq 0 \quad (y + \sqrt{x})(y - x^2) \leq 0$

$-\sqrt{x} \leq y \leq x^2$



boyalgan to'g'a yuzini topamiz.

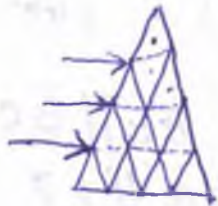
~~$f(x) = x^2$~~

$x = 1 \rightarrow f(x) = 1$
 $h(x) = -1$

IV chorakdagi yuzani I chorakka ko'chirishdan:

$S = 1 \cdot 1 = 1$ J: 1

① bāzi chiziq larai otkazami z.



→ 6 → qirvadi ya boluztni ~~kor~~ uchlariga
 o'zgar terish kirilib oxirida ayirib
 tashlaymiz va Aynan 1ta.

tomoni 12 bo'lgan Δ ni ko'ramiz.

shunda bor:

tomoni 1 bo'lgan lar: $1+3+5+\dots+23 = 144$ ta.

tomoni 2: $\frac{11 \cdot 12}{2} + \frac{9 \cdot 10}{2} = 66 + 45 = 111$ ta.

tomoni 3: $\frac{10 \cdot 11}{2} + \frac{8 \cdot 9}{2} = 55 + 36 = 91$ ta.

tomoni 4: $\frac{9 \cdot 10}{2} + \frac{6 \cdot 5}{2} = 45 + 15 = 60$ ta.

tomoni 5: $\frac{8 \cdot 9}{2} + \frac{4 \cdot 3}{2} = 36 + 6 = 42$ ta.

tomoni 6: $\frac{7 \cdot 8}{2} + \frac{2 \cdot 1}{2} = 28 + 1 = 29$ ta.

tomoni 7: $\frac{6 \cdot 7}{2} = 21$

tomoni 8: $\frac{5 \cdot 6}{2} = 15$

tomoni 9: $\frac{4 \cdot 5}{2} = 10$

tomoni 10: $\frac{3 \cdot 4}{2} = 6$

tomoni 11: $\frac{2 \cdot 3}{2} = 3$

tomoni 12: $\frac{1 \cdot 2}{2} = 1$

barchatini qo'shamiz: $1+3+6+10+15+21+29+42+60+83+111+144 = 525$

o'zimiz chiziq otkazishimizdan hozir bo'lgan larini

topib dlaylik. tomoni 1 → 12 ta; tomoni 2 → 6 ta.
 tomoni 3 → 2 ta; $12+6+2 = 20$

$525 - 20 \cdot 3 = 525 - 60 = 465$

endli 2 - tomoni 12 bo'lgan uch burchak dan
 foydalanamiz;

$465 + 68 = 533$ ta. $C_{13}^2 - C_5^2 = 78 - 10 = 68$

$C_{11}^2 - C_7^2 = 55 - 21 = 34$
 $C_{10}^2 - C_8^2 = 45 - 28 = 17$
 $533 + 102 = 635$ ji 635 ta.

533 + 102 = 635 ji 635 ta.

④ N nafar odamni bergan sovgalari ; $N-1$; $N-2$;
 ... ; 3 ; 2 ; 1 ; 0 . Barcha turli sovg'a berishi

uchun shunchadan berishga majbur . Nechta sovg'a
 berish bolsa shuncha sovg'a olishi boladi .

1 ta odam olishi kerak bolgan sovg'alari sonini
 topamiz $\rightarrow \frac{(N-1) \cdot N}{2 \cdot N} = \frac{N-1}{2} \rightarrow N \rightarrow \text{toq son}$
 bolishi kerak .

Sovg'a berganda hech kim o'ziga o'zi sovg'a bermaydi .

1 ta va $N-1$ ta sovg'a beradiganlar N ta kishini
 har biriga 1 ta dan sovg'a beradi . Oladi .

shu ddi shunday $(2 ; (N-2)) ; (3 ; (N-3)) ; \dots$

... ; $(\frac{N-1}{2} ; \frac{N+1}{2})$ ~~bu~~ juftliklar har bir

kishiga 1 tadan bera oladi . shunda .

har bir kishi teng miqdorda sovg'a oladi . demak
 N toq bolishi yetarli .

Javob : $N > 1$ bolgan toq sonlar
 uchun .

⑤ $m = n + k$.

$$(n+k)^3 = n^3 + 13n - 273$$

$$n^3 + 3n^2k + 3k^2n + k^3 = n^3 + 13n - 273$$

$$3 \cdot k \cdot n^2 + (3k^2 - 13) \cdot n + k^3 + 273 = 0$$

kuadrat tenglamada
 diskriminantni topamiz .

$$d = -3k^4 - 78k^2 + 273 \cdot 12k + 169 > 0$$

$$k < 10$$

shunga 10 ta holni
~~ko'ramiz~~ .

mas hollarni ko'ramiz .

$$m^3 = n^3 + 13n - 273 = (n+k)^3 \rightarrow$$

$$\frac{k=0}{\downarrow}$$

$$n=21$$

qanoatlantiradi .

Ji 21 .