

Жалпы білім беретін пәндер бойынша республикалық олимпиаданың мектепшілік кезеңі

1-m

$$x^2 - y^2 - x + y = 2022$$

$$(x-y)(x+y) - (x-y) = 2022$$

$$(x-y)(x+y-1) = 2022$$

$$\begin{array}{r|l} 2022 & 2 \\ 1011 & 3 \\ 337 & 337 \end{array}$$

1) $x-y=6$; $x+y-1=337$

$$x+y=338$$

$$+ x-y=6$$

$$\hline 2x=344$$

$$x=172; y=172-6=166$$

2) $x-y=2$; $x+y-1=337 \cdot 3$

$$x+y=1012$$

$$+ x-y=2$$

$$2x=1014$$

$$x=507; y=507-2=505$$

3) $x-y=3$; $x+y-1=337 \cdot 2$

$$x+y=675$$

$$+ x-y=3$$

$$2x=678$$

$$x=339; y=339-3=336$$

ЖК: $(172; 166); (507; 505); (339; 336)$.

2-m

$\triangle ABC$ $AC=a$

$$S_{\triangle BEF} = \frac{1}{2} S_{\triangle ABC}$$

$EF=?$

Бер: $\triangle ABC$

$$AC=a$$

$$S_{\triangle LBM} = S_{\triangle LMC}$$

$$AC \parallel LM$$

$$LM=x$$

$$\angle LBM = \angle 1 \quad \angle 1 = \angle 2 \quad \triangle ABC \sim \triangle LBM$$

$$\angle BAC = \angle 2$$

$$\frac{S_{\triangle ABC}}{S_{\triangle LBM}} = k^2$$

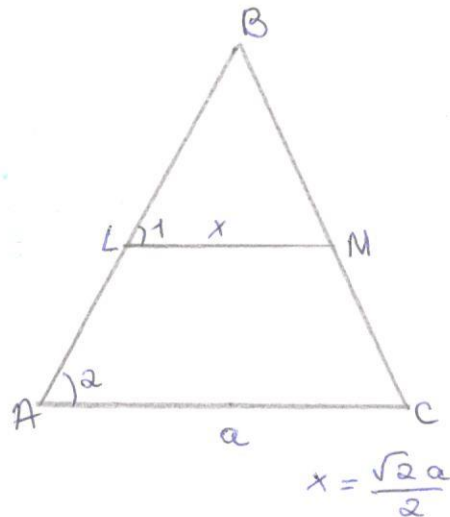
$$\frac{AC}{LM} = k$$

$$\left(\frac{AC}{LM}\right)^2 = 2$$

$$\left(\frac{a}{x}\right)^2 = 2$$

$$\frac{a^2}{x^2} = 2 \quad x^2 = \frac{a^2}{2}$$

$$\therefore \sqrt{2} \cdot a$$



3-m

$$1 + \sqrt{17 + \sqrt{288}} > \sqrt{2} + \sqrt{3}$$

$$\sqrt{17 + \sqrt{288}} \approx 2,41421$$

$$1 + 2,41421 = 3,41421$$

$$\sqrt{3} \approx 1,73205$$

$$\sqrt{2} \approx 1,41421$$

$$1,41421 + 1,73205 = 3,14626$$