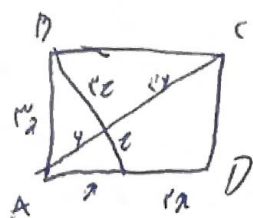


B

صفر

تکلیف قبل از ارسال شد

برهان منطقی



$$AC = \sqrt{a^2 + b^2} \Rightarrow y = \frac{\sqrt{a^2 + b^2}}{2}$$

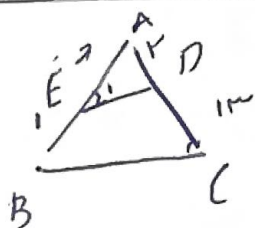
$$BE = \sqrt{a^2 + \frac{b^2}{4}} = \frac{\sqrt{4a^2 + b^2}}{2}$$

$$BC \parallel AE \Rightarrow \triangle BFC \sim \triangle AFE$$

$$fz = \frac{1}{2} \cdot a = z = \frac{\sqrt{a^2 + b^2}}{2}$$

$$\frac{EF}{BF} = \frac{AE}{BC} = \frac{AF}{FC} = \frac{1}{2}$$

$$\Rightarrow \frac{EF}{AF} = \frac{z}{y} = \frac{\frac{\sqrt{a^2 + b^2}}{2}}{\frac{\sqrt{a^2 + b^2}}{2}} = \frac{\sqrt{a^2 + b^2}}{2}$$

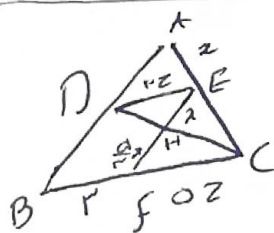


$$\hat{A} = \hat{A} \quad \hat{E} = \hat{C} \quad \Rightarrow \triangle AED \sim \triangle ABC$$

$$\frac{x}{y+1} = \frac{a}{b}$$

$$x^2 + a - x = (x+y)(x-1)$$

$$x = 1 \text{ و } x = -4$$



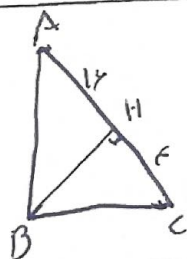
$$xy = a$$

$$DE \parallel BC \Rightarrow \frac{x}{y} = \frac{z}{w}$$

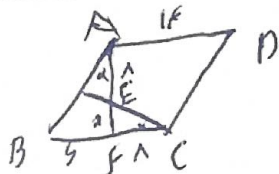
$$DE \parallel BC \Rightarrow \triangle HDE \sim \triangle HFC$$

$$\frac{DE}{FC} = \frac{x}{y} = \frac{z}{w}$$

$$fz = \frac{1}{2} \cdot a = \frac{z}{2} \Rightarrow z = \frac{a}{2}$$



$$\left. \begin{array}{l} BC' = \frac{1}{2} \cdot a \\ AB' = \frac{1}{2} \cdot a \end{array} \right\} \frac{AB}{BC} = \frac{1}{2}$$

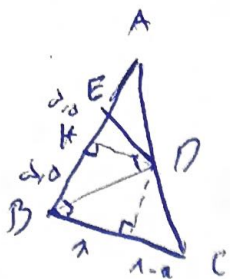


$$\tan \alpha = \frac{a}{b} = \frac{c}{a+b}$$

$$Af = a + f = 12$$

$$x^2 + a - x = (x+y)(x-1)$$

$$f = 12$$



$$\text{نقطه } BD \rightarrow HD = PH' = A$$

$$x^2 = a(11-a)$$

$$13^2 = 11a$$

$$169 = 11a$$

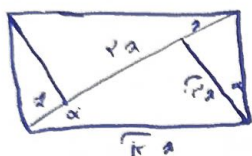
اگر $6 \leq x$
 $a > 11$ و $a < 13$

$$\frac{\omega \cdot \omega}{HD \cdot HC} = \frac{y \cdot d \cdot d}{11+y} = \frac{d \cdot d}{1}$$

$$11 + y \cdot FF' = y \cdot d + d \cdot d \cdot y$$

$$y \cdot d \cdot y = 11 \cdot d$$

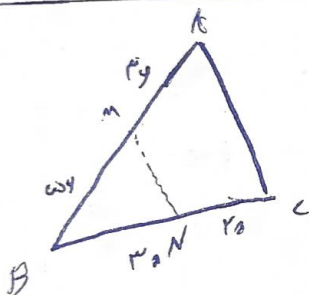
$$(y = 11)$$



$$y = ra$$

$$\frac{S_{\text{مستطیل}}}{S_{\text{مثلث قائم‌الزاویه}}} = \frac{\frac{1}{2} \cdot a \cdot y}{\frac{1}{2} \cdot a \cdot r} = 1$$

$$\sin \alpha = \frac{y}{r} = \frac{y}{y} \rightarrow y = ra$$

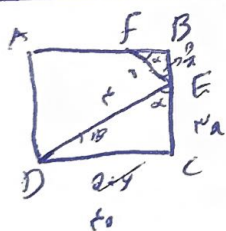


$$\frac{S_{\triangle ABC}}{S_{\triangle BMN}} = \frac{\frac{1}{2} \sin B \cdot AB \cdot BC}{\frac{1}{2} \sin B \cdot BM \cdot BN} = r$$

$$\frac{AB}{BM} = \frac{q}{w}$$

$$\frac{AB - BM}{BM} = \frac{r}{w}$$

$$\frac{BM}{AM} = \frac{d}{r}$$

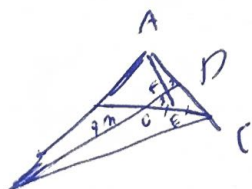


$$\alpha = \alpha \Rightarrow \triangle FBE \sim \triangle PEC$$

$$\frac{F}{1} = \frac{m+y}{n}$$

$$F_n = n \cdot y \Rightarrow r_n = y$$

$$P_{EC} = d \cdot f \xrightarrow{\text{مقدار}} F_n = r_n \cdot r \rightarrow S_{\text{مربع}} = (r_n)^2 = (10 \cdot r)^2$$



$$AE, FD \rightarrow \text{مقدار} \rightarrow FD = a \quad GF = ra$$

$$GD = ra$$

$$BG = ya$$

$$\frac{BD}{FD} = \frac{9}{a} = 9$$