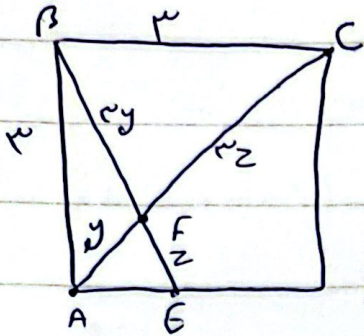


لازمه دفته شده

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مسئله



$$ED = \frac{1}{2} AC$$

سوال

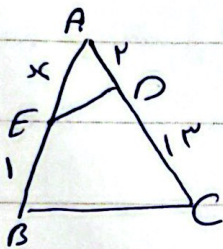
$$\frac{BF}{FE} = \frac{CF}{AF} = 2 \rightarrow BF = 2y, EF = y$$

$$CF = 2z, AF = z$$

$$AE: (2y)^2 = 2z \rightarrow 4y^2 = 2z \rightarrow y = \frac{\sqrt{2}}{2}$$

$$AC = 2\sqrt{2} \rightarrow z = 2 - y \rightarrow z = \frac{3\sqrt{2}}{2}$$

$$\frac{y}{z} = \frac{\sqrt{2}}{3}$$

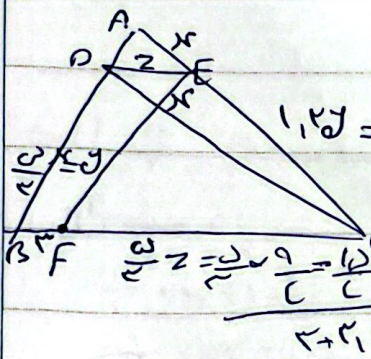


$$\frac{AD}{AB} = \frac{AE}{AC} = \frac{1}{x+1} = \frac{x}{1}$$

سوال

$$\rightarrow x^2 + x - 1 = 0 \rightarrow x = \frac{-1 \pm \sqrt{5}}{2}$$

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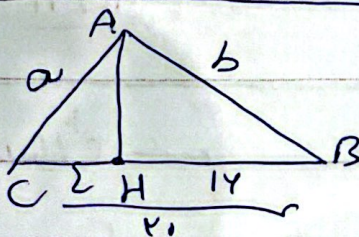


$$1, 2y = \frac{1}{2} x \rightarrow x = 2y$$

$$\frac{x}{2x} = \frac{z}{\frac{1}{2}z + 1} \rightarrow \frac{1}{2}z = \frac{1}{2}z + 1 \rightarrow z = 2$$

سوال

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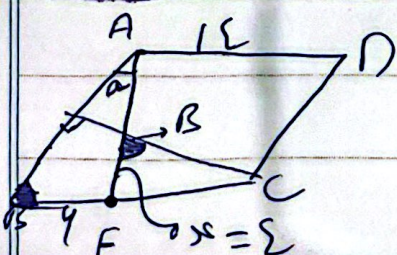


$$b^2 = 14x$$

$$a^2 = 14x \rightarrow \frac{14x}{14x} = \frac{b^2}{a^2} \rightarrow \frac{b}{a} = 2$$

سوال

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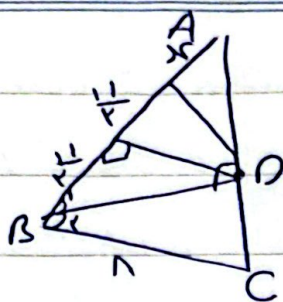
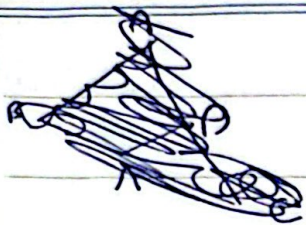
$$\frac{x}{4} = \frac{1}{x+1} \rightarrow x = 1$$

سوال

$$AF + EF = AF = 12$$

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Scanned with



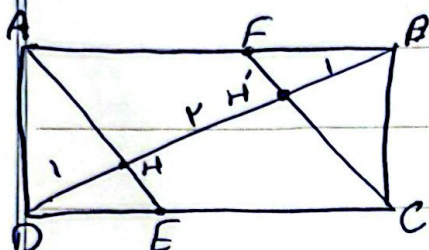
$$BI = BI = \frac{1}{2} \omega$$

← جواب

$$DH = BH \Rightarrow H = \frac{11}{2}$$

$$\frac{AH}{AB} = \frac{DH}{BC} = \frac{x + \frac{11}{2}}{x + 11} = \frac{11}{x}$$

$$\rightarrow \boxed{x = 4,4}$$



$$AH^2 = 1 \times 2 \rightarrow AH = \sqrt{2}$$

← جواب

$$AD^2 = (\sqrt{2})^2 + 1^2 = 3 \rightarrow AD = \sqrt{3}$$

$$(C)^2 = x^2 + (AB)^2 \rightarrow AB = x\sqrt{2}$$

$$\frac{AH}{HE} = \frac{AB}{DE} = \frac{BH}{DH} = \frac{AE}{BE} = \frac{x\sqrt{2}}{x} = \frac{2}{1}$$

$$\rightarrow HE = \frac{\sqrt{2}}{2} \rightarrow \frac{S_{\square}}{S_{\Delta}} = \frac{x\sqrt{2} \times \frac{\sqrt{2}}{2}}{\frac{1}{2} \times x \times x} = \boxed{1}$$

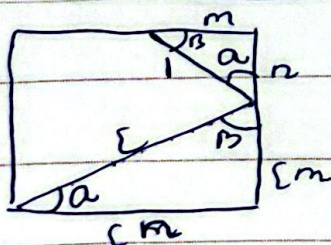
$$MNC = MBN \rightarrow \frac{BC}{BN} = \frac{r}{\omega}$$

← جواب

$$\frac{S_{BMN}}{S_{ABN}} = \frac{BM \times BN}{BA \times BC} \rightarrow \frac{1}{r} = \frac{BM}{BA} \times \frac{r}{\omega} \rightarrow \frac{BM}{BA} = \frac{\omega}{r}$$

$$\frac{BM}{BA} = 1 - \frac{\omega}{a} = \frac{5}{9} \quad \frac{BM}{AM} = \frac{\omega}{\frac{a}{2}} = \frac{\omega}{\frac{5}{2}} = \frac{2}{5}$$

$$\boxed{\frac{\omega}{5} \leq \frac{BM}{AM}}$$



$$cm + n = \omega n \rightarrow cm = \frac{r}{2}n$$

← جواب

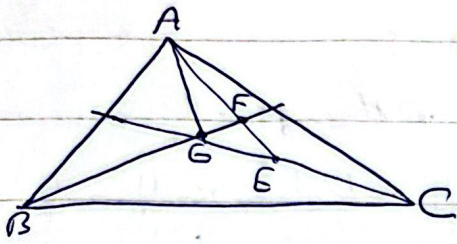
$$(cn)^2 + (cm)^2 = 14 \rightarrow m^2 + n^2 = 1 \quad \frac{m}{n} = \frac{r}{\omega} \rightarrow \frac{m}{n} = \frac{1}{2}$$

$$\rightarrow \left(\frac{r}{\omega}n\right)^2 + n^2 = 1 \rightarrow \frac{9}{14}n^2 + 1 = \frac{1}{14}n^2 = 1$$

$$\rightarrow \frac{\omega}{c}n \leq 1 \rightarrow n \leq \frac{c}{\omega}$$

$$S = (cn)^2 + 14n^2 \rightarrow S = 14 \times \frac{1}{2} = \boxed{\frac{7}{2}}$$

Scbó



$$AG = 2GM = \frac{2}{3}AM$$

← سرائی

$$GM = \frac{1}{3}AG = \frac{1}{3}AM$$

$$GD = \frac{1}{3}BD \quad (1)$$

(5)

$$FD = \frac{1}{3}GD \quad (1) \rightarrow FD = \frac{1}{3} \times \frac{1}{3}BD$$

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