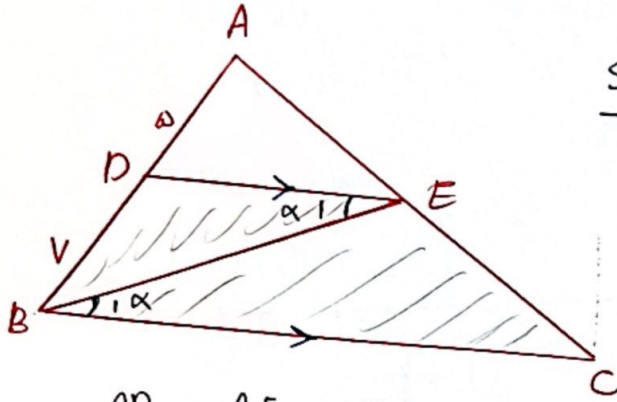
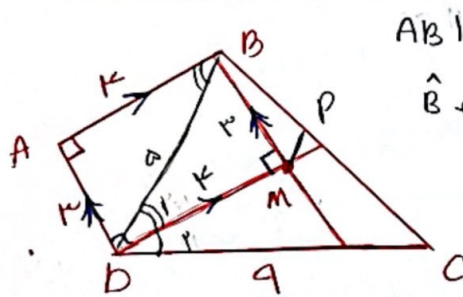




$$\frac{S_{BCE}}{S_{BDE}} = \frac{\frac{1}{2} \times BC \times BE \times \sin \alpha}{\frac{1}{2} \times DE \times BE \times \sin \alpha}$$

$$\frac{BC}{DE} = \frac{12}{\omega} = 2.4$$

$$\text{و نیز} \rightarrow \frac{AD}{AB} = \frac{AE}{AC} = \frac{DE}{BC} = \frac{\omega}{12}$$



$$AB \parallel DC \rightarrow BD \rightarrow \hat{B} = \hat{D}$$

$$\hat{B} + \hat{D}_1 = D_1$$

$$BD = BD$$

$$\hat{B} = \hat{D} \rightarrow \triangle ADB = \triangle DBE$$

$$\triangle ABD \cong \triangle BMD$$

$$\hat{M} = 90^\circ$$

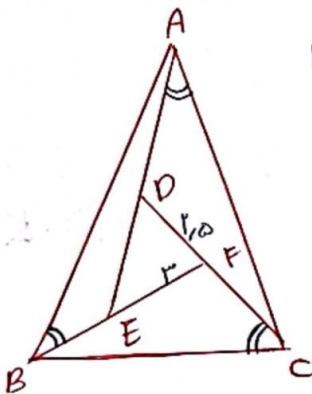
$$DM \perp AC$$

$$D_1 = D_2$$

$$\hat{M} = 90^\circ$$

$$\triangle DMB \cong \triangle DME \rightarrow DE = \omega, CE = 4, ME = BM$$

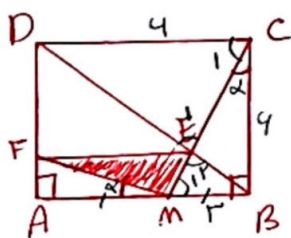
$$EC \parallel MP \rightarrow \left\{ \begin{array}{l} BP = PC \\ ME = MP \end{array} \right. \rightarrow \frac{MP}{CE} = \frac{BP}{BC} = \frac{BM}{BE} = \frac{1}{2} \rightarrow MP = \frac{1}{2} \times 4$$



$$\triangle FED \rightarrow \triangle FBC \rightarrow \angle FED = \beta - \alpha + \alpha = \beta$$

$$\triangle FDE \rightarrow \triangle ABE \rightarrow \angle FDE = \hat{A} - \alpha + \alpha = \hat{A}$$

$$\Rightarrow \triangle ABC \sim \triangle DEF \rightarrow \frac{12}{\omega} = \frac{4}{AB} \rightarrow AB = \frac{4 \times 12}{\omega} = 9.6$$



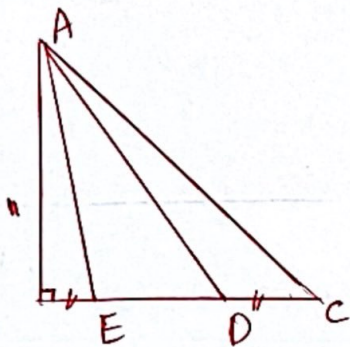
$$MC^2 = 4^2 + 3^2 = 25 \rightarrow MC = 5$$

$$\left\{ \begin{array}{l} BC \parallel AB \rightarrow CM \rightarrow \hat{C}_1 = \hat{M}_1 \\ \text{و نیز} \hat{E}_1 = \hat{E}_2 \end{array} \right\} \frac{DC}{MB} = \frac{CE}{ME}$$

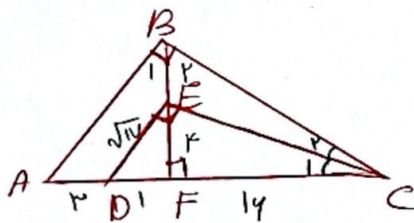
$$\frac{CE}{ME} = \frac{4}{3} \rightarrow CE + ME = 5$$

$$\left. \begin{array}{l} \hat{C}_P = \hat{M}_P = 4 \\ \hat{A} = \hat{B} = 4 \end{array} \right\} \rightarrow \Delta_{BM} \sim \Delta_{MA} \rightarrow \frac{MB}{AF} = \frac{BC}{AM} = \frac{MC}{MF}$$

$$\frac{P\sqrt{2}}{MF} = \frac{4}{P} \rightarrow MF = \frac{P}{P} \sqrt{2} \quad S_{MFE} = \frac{1}{2} \times \frac{P}{P} \times \sqrt{2} \times \sqrt{2} = 1 \text{ م.م}$$



$$\begin{aligned} 11^2 + 2^2 &\Rightarrow AE = \sqrt{11+2} \\ AEC \sim ACD &\rightarrow \frac{AE}{ED} = \frac{EC}{AE} \rightarrow AE^2 = EC \times ED \\ 11 + 2^2 &= ED \times EC \rightarrow 11 + 2^2 = 1 \dots \\ 2^2 - 1 \cdot 2 + 1 &= 1 \dots \rightarrow 2 < 3 \quad 2 > 1 \end{aligned}$$



$$EF^2 = DF \times FC \rightarrow 14 = 1 \times FC$$

$$FC = 14$$

$$14^2 - (\sqrt{14})^2 = EC^2 \rightarrow EC = 3\sqrt{14}$$

$$ED = \sqrt{14+1} = \sqrt{15}$$

$$BF^2 = AF \times FC = 1 \times 14 \rightarrow BF = 4$$

$$BC^2 = 1^2 + 14^2 = 197 \rightarrow B = 14\sqrt{2}$$

$$BC = \sqrt{14+1} = 2\sqrt{2}$$

$$BE = BC = \sqrt{2}$$

$$\frac{1}{\sqrt{2}} = \frac{EF}{AE} \rightarrow AE = 2\sqrt{2}$$

$$S_{ABC} = \frac{AE \times BE}{2} = \frac{2\sqrt{2} \times \sqrt{2}}{2} = 2$$

$$2^2 = 1^2 + 1^2$$

(✓) (✗)

$$x = x \sqrt{1} \sqrt{1}$$

(5)

میان وارد بر آن نصف وتر ← باستان های قائم

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

$$AB = \sqrt{1+9} = 2\sqrt{10}$$

(4)

$$(AC)^2 = AD \times AB \Rightarrow 9 = AD \times 2\sqrt{10}$$

$$AD = 0,45\sqrt{10}$$

(5)

$$BD = 2\sqrt{10} - 0,45\sqrt{10} = 1,55\sqrt{10}$$

$$\begin{array}{l} DE \perp BC \\ AC \perp BC \end{array} \rightarrow DE \parallel AC \rightarrow \frac{BE}{BC} = \frac{BD}{AD} \quad \frac{BE}{9} = \frac{1,55\sqrt{10}}{0,45\sqrt{10}} \Rightarrow$$

$$BE = 11$$

$$AC = \sqrt{14^2 + 12^2} = 18$$

(5)

(10)

$$BC^2 = CM \times AC \Rightarrow 14^2 = CH \times 18$$

$$AE = AM = 4$$

$$CH = 10,5$$

$$\frac{DE}{12} = \frac{4,5}{18} \rightarrow DE = 3$$