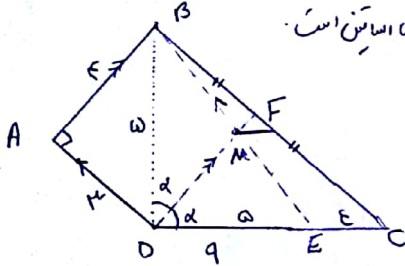


$$Eh = Bh'$$

$$\frac{S_{BCE}}{S_{BDE}} = \frac{\frac{EK \times BC}{\gamma}}{\frac{bK \times DE}{\gamma}} = \frac{BC}{DE}$$

$$\frac{\omega}{12} \frac{AD}{AB} = \frac{DE}{BC} = \frac{AE}{AC} \rightarrow \frac{BC}{DE} = \left(\frac{12}{5} \right)$$

5



مربع مساوی ($BD^2 = 2BD \cdot DM$) نیز BDE است. ارتفاع هم نیست پس این مثلث متساوی الساقین است.

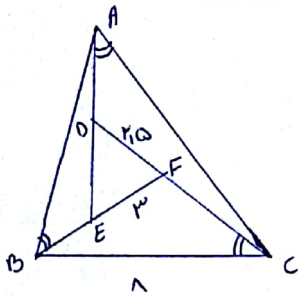
$$AB^2 + AD^2 = BD^2 \rightarrow 4^2 + 3^2 = BD^2 \Rightarrow BD = 5 \Rightarrow DE = 5$$

$$EC = 5 - 3 = 2$$

ارتفاع DM میان خط نیست $BM = ME = 3$

$$\frac{BM}{ME} = \frac{BF}{FC} \quad (MF \parallel EC) \rightarrow \frac{MF}{E} = \frac{3}{4} \Rightarrow MF = 3$$

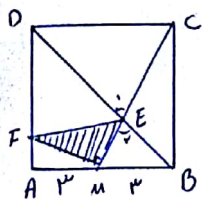
5



$$DEF \sim ABC$$

$$\left. \begin{array}{l} \hat{A} = \hat{E} \\ \hat{B} = \hat{F} \\ \hat{C} = \hat{D} \end{array} \right\} \rightarrow \frac{AB}{\gamma} = \frac{A}{\gamma_1} \rightarrow \gamma_2 = \gamma_1 AB = 12 \times 4 = 48$$

5



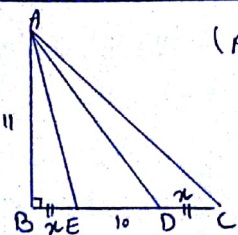
$$BM \parallel DC, \hat{E}_1 = \hat{E}_2 \rightarrow \triangle MBE \sim \triangle DCE \Rightarrow \frac{ME}{CE} = \frac{BE}{DE} = \frac{BM}{DC} = \frac{3}{4}$$

$$(\triangle BMC) \rightarrow MC^2 = MB^2 + BC^2 \Rightarrow MC^2 = 3^2 + 4^2 \Rightarrow MC = 5 \Rightarrow ME = 3, EC = 2$$

$$\triangle AMF \sim \triangle BCM \rightarrow \frac{AM}{BC} = \frac{MF}{MC} \rightarrow MF = \frac{AM \times MC}{BC} = \frac{3 \times 5}{4} = \frac{15}{4}$$

$$S_{MFE}^{\Delta} = \frac{1}{2} \times ME \times MF = \frac{1}{2} \times 3 \times \frac{15}{4} = \frac{45}{8} = 5.625$$

5



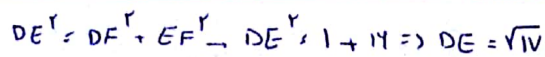
$$(\triangle ABE) \rightarrow AE^2 = AB^2 + BE^2 = AE^2 = 11^2 + m^2 \rightarrow AE = \sqrt{121 + m^2}$$

$$\triangle AEC \sim \triangle ACD \rightarrow \frac{AE}{ED} = \frac{EC}{AE} \rightarrow EC \times ED = AE^2 = (11 + m) \times 10 = 111 + m^2 \Rightarrow 10m + 110 = 111 + m^2$$

$$m^2 - 10m + 1 = 0 \rightarrow (m-4)(m-1) = 0$$

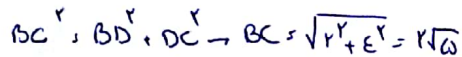
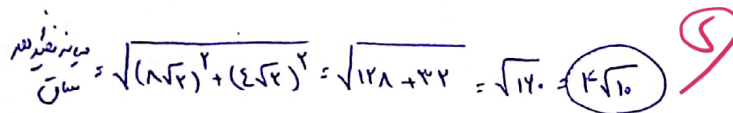
$$\begin{array}{l} x = 4 \\ x = 1 \end{array}$$

5

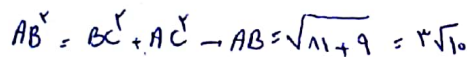


$$BF^Y: AF \times FC \rightarrow BF^Y = K \times Y = 4\mathbb{Z} \Rightarrow BF = \Lambda$$

$$\Lambda^Y \wedge \Lambda^Y \wedge \pi^Y \Rightarrow \pi \wedge \sqrt{12} \wedge \pi \wedge \sqrt{Y}$$

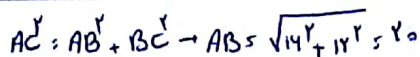


$$S_{ABE} = \frac{1}{2} \times AE \times BE = \frac{1}{2} \times \sqrt{2} \times \sqrt{2} = 1$$



$$DC^2 = BD \times AD \rightarrow \frac{11}{10} = BD \times \frac{14}{\sqrt{10}} \Rightarrow BD = \frac{11}{\sqrt{10}}$$

$$\triangle ABC \sim \triangle BDE \rightarrow \frac{AC}{BE} = \frac{AD}{DE} = \frac{AE}{BD} \rightarrow DE = \frac{\frac{1}{\sqrt{10}} \times \frac{10}{\sqrt{10}}}{1} = \frac{1}{1} \times \frac{10}{10} = 1$$



$$AB^Y \cap AH \cap AC \rightarrow Y^Y \cap AH \times Y_0 \Rightarrow AH \cap Y_1 \Rightarrow AE = EH = 4,6$$

$$\frac{9,4}{DE} = \frac{14}{4,6} \rightarrow DE = \frac{4,6 \times 9,4}{14} \rightarrow 3,12$$