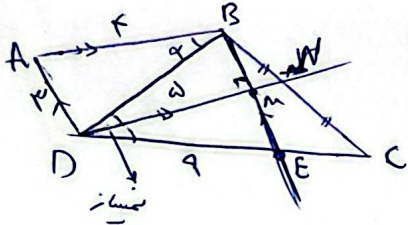


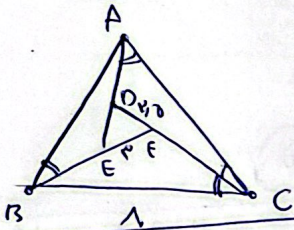
$$\frac{EH' = BH'}{S_{BDE}} = \frac{EH' \times 12y}{S_{BEC}} = \frac{BH' \times 12y}{S_{BEC}} = \frac{12}{2}$$

$$\frac{AE}{AC} = \frac{AD}{BA} = \frac{ED}{BC}$$

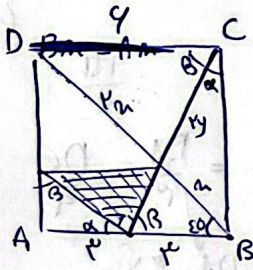


DM + مساحت BDE = مساحت BDE + مساحت BDE
 مساحت BDE = مساحت BDE + مساحت BDE
 $BD = AB + AD = \epsilon + \epsilon = 2\epsilon \rightarrow BD = 2\epsilon$
 $BDE \rightarrow BD = DE = 2\epsilon$
 $EC = DC - DE \rightarrow 4 - 2 = 2$

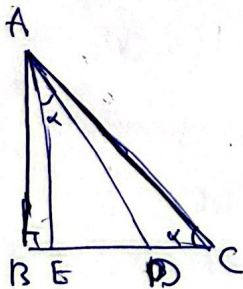
BM = ME = 2 ← مساحت BDE مساحت BDE
 $\frac{BM}{ME} = \frac{BN}{NC} \rightarrow MN \parallel EC \rightarrow \frac{MN}{EC} = \frac{2}{4} \rightarrow MN = 2$



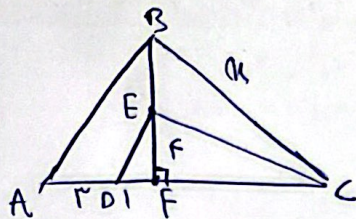
$\triangle DEF \sim \triangle ABC \rightarrow \frac{DF}{BC} = \frac{2}{4} \rightarrow 2 = 4, 2$



$\tan B = \frac{AM}{AF} = \frac{BC}{MB} = \frac{2}{4} = 2 \rightarrow AF = \frac{2}{2}$
 $MF = \sqrt{(\frac{2}{2})^2 + \epsilon^2} = \sqrt{\frac{4}{4} + \epsilon^2} = \frac{2\sqrt{4 + \epsilon^2}}{2}$
 $\hat{E}_1 = \hat{E}_2$
 $\hat{DCE} = \hat{BME} \rightarrow \triangle DCE \sim \triangle BME \rightarrow \frac{2}{4} = 2 \rightarrow 2y = \sqrt{4 + \epsilon^2} = \sqrt{4 + 1} = \sqrt{5}$
 $S_{FEM} = \frac{1}{2} MF \times EM = \frac{1}{2} \times \frac{2\sqrt{5}}{2} \times \sqrt{5} = \frac{5}{2}$



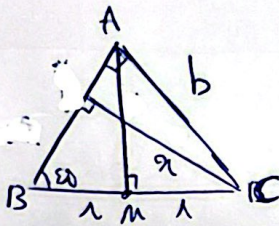
$\hat{2} = \hat{2}$
 $E = E$
 $\hat{D}_1 = \hat{A}_1$
 $\rightarrow \triangle CAE \sim \triangle AED \Rightarrow \frac{AE}{ED} = \frac{EC}{AE} \rightarrow$
 $\frac{\sqrt{4 + 1}}{1} = \frac{2 + 1}{\sqrt{4 + 1}} \rightarrow 4 + 1 = 4 + 1 \rightarrow 4 - 1 = 3$
 $4 - 1 = 3 \rightarrow (4 - 1)(4 - 1) = 3 \rightarrow 4 = 3$



$$DF=1 \quad BF=2 \quad AD=3 \quad \hat{A}BC = \hat{C}ED = \alpha \quad (4)$$

$$EF^2 = DF \times CF \Rightarrow 1^2 = 1 \times CF \rightarrow CF = 1$$

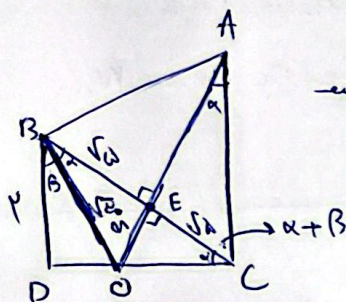
$$x^2 = CF \times AC \rightarrow x^2 = 1 \times 2 \rightarrow x = \sqrt{2} \times \sqrt{2} = \underline{2}$$



$$b^2 + b^2 = 14^2 \rightarrow 2b^2 = 196 \rightarrow b^2 = 98$$

$$b = \sqrt{98} \rightarrow \text{میان دارد بر ۱۴ نصف
هر دو سیم با طول ۱۴
قائم الزاویه است}$$

$$\sqrt{(14\sqrt{2})^2 + (14\sqrt{2})^2} = \sqrt{196 + 196} = \sqrt{392} = \underline{14\sqrt{2}}$$



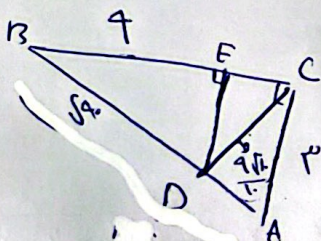
ABCD در نقطه مشترک اسیاقی و در دوایر برابر و of میانه و میانه از مرکز میانی

$$BC = \sqrt{r^2 + r^2} = r\sqrt{2} = BE = EC$$

$$BE = EC = r\sqrt{2}$$

$$\frac{r}{\sqrt{2}} = \frac{r}{AE} = \frac{r\sqrt{2}}{2} \Rightarrow AE = r\sqrt{2}$$

$$S_{ABE} = \frac{AE \times BE}{2} = \frac{r\sqrt{2} \times r\sqrt{2}}{2} = \underline{r^2}$$

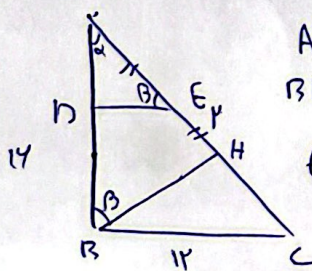


$$BC^2 = BD \times AB \Rightarrow 4^2 = BD \times \sqrt{17}$$

$$BD = \frac{16}{\sqrt{17}} = \frac{16\sqrt{17}}{17}$$

$$BD^2 = BE \times BC \Rightarrow \left(\frac{16\sqrt{17}}{17}\right)^2 = BE \times 4$$

$$BE = \frac{256 \times 17}{16 \times 4} = \underline{17}$$



$$AC = 10$$

$$BH \times AC = AB \times BC \rightarrow BH \times 10 = 14 \times 12 \Rightarrow BH = \frac{168}{10} = 16.8$$

$$AH = \sqrt{14^2 - 16.8^2} = 12.1 \Rightarrow AE = 4.8$$

$$\left. \begin{matrix} \hat{A} = \hat{A} \\ \hat{H} = \hat{D} \end{matrix} \right\} \rightarrow \triangle ADE \sim \triangle AHB \Rightarrow \frac{DE}{BH} = \frac{AE}{AB} \Rightarrow \frac{DE}{16.8} = \frac{4.8}{14} \rightarrow DE = \frac{48}{12} = \underline{4}$$