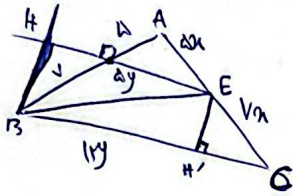


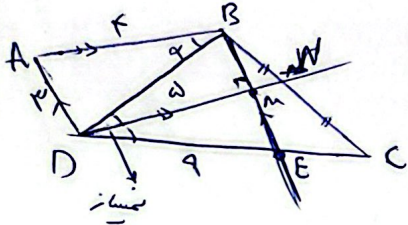
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در این درس



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

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



DM + مساحت BDE = مساحت BDE + مساحت BDE

مساحت BDE = مساحت BDE

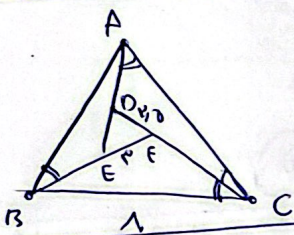
$BD = AB + AD = \epsilon + \epsilon = 2 \rightarrow BD = 2$

$BDE \rightarrow BD = DE = 2$

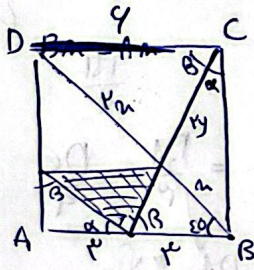
$EC = DC - DE \rightarrow 4 - 2 = 2$

BM = ME = 2 ← مساحت BDE

$\frac{BM}{ME} = \frac{BN}{NC} \rightarrow MN \parallel EC \rightarrow \frac{MN}{EC} = \frac{1}{2} \rightarrow MN = 2$



$\triangle DEF \sim \triangle ABC \rightarrow \frac{DF}{BC} = \frac{1}{2} \rightarrow 2 = 4, 4$



$\tan B = \frac{AM}{AF} = \frac{BC}{MB} = \frac{1}{2} = 2 \rightarrow AF = \frac{1}{2}$

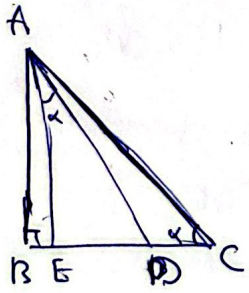
$MF = \sqrt{(\frac{1}{2})^2 + \epsilon^2} = \sqrt{\frac{\epsilon^2}{4}} = \frac{\epsilon\sqrt{4}}{2}$

$\hat{E}_1 = \hat{E}_r$

$\hat{DC'E} = \hat{BME} \rightarrow \triangle DC'E \sim \triangle MEB \rightarrow \frac{1}{2} = 2 \rightarrow \epsilon y = \sqrt{4^2 + \epsilon^2} = \sqrt{4\epsilon^2} = \epsilon\sqrt{4}$

$y = \sqrt{4}$

$S_{FEM} = \frac{1}{2} MF \times EM = \frac{1}{2} \times \frac{\epsilon\sqrt{4}}{2} \times \sqrt{4} = \frac{1\epsilon}{2}$



$\hat{2} = \hat{2}$

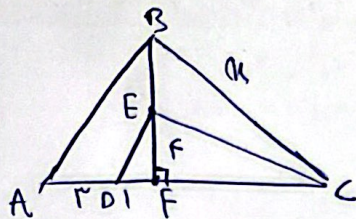
$E = E$

$\hat{D}_1 = \hat{A}_1$

$\rightarrow \triangle CAE \sim \triangle AED \Rightarrow \frac{AE}{ED} = \frac{EC}{AE} \rightarrow$

$\frac{\sqrt{4^2 + 121}}{1} = \frac{4+1}{\sqrt{4^2 + 121}} \rightarrow 4^2 + 121 = 16 + 121 \rightarrow 4^2 = 16 + 121$

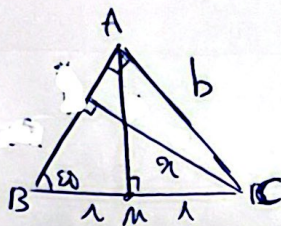
$4^2 = 16 + 121 \rightarrow (4-16)(4-121) = \rightarrow 4 = 16$



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

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

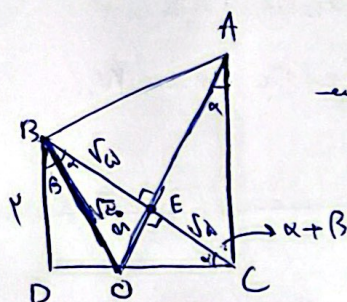
$$x^2 = CF \times AC \rightarrow x^2 = 1 \times 2 \rightarrow x = \sqrt{2} \times \sqrt{2} = \underline{2}$$



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

$$b = \sqrt{98} \rightarrow \text{میانۀ دارد بر ۱۴ نصف
هر دو ساق با هم مساوی است
ماتریم انزاویه است}$$

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



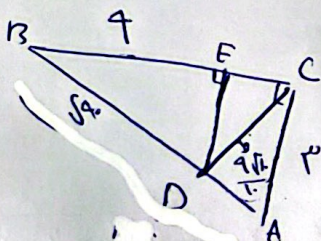
ABCD در نقطه مشترک است و در دو ساق برابر و of میانۀ دایره محو می کند

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

$$BE = EC = \sqrt{a}$$

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

$$S_{ABE} = \frac{AE \times CE}{2} = \frac{\sqrt{a} \times \sqrt{a}}{2} = \underline{\frac{a}{2}}$$

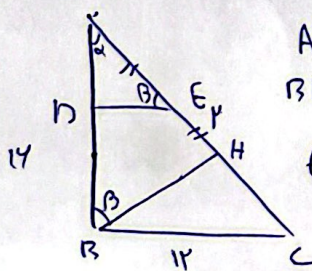


$$BC^2 = BD \times AB \Rightarrow 4^2 = BD \times \sqrt{17}$$

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

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

$$BE = \frac{16 \times 16}{4 \times 17} = \underline{\frac{64}{17}}$$



$$AC = 10$$

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

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

$$\left. \begin{matrix} \hat{A} = \hat{A} \\ \hat{H} = \hat{D} \end{matrix} \right\} \rightarrow \triangle ADE \sim \triangle AHB \Rightarrow \frac{DE}{BH} = \frac{AE}{AB} \Rightarrow \frac{DE}{16.8} = \frac{4.8}{14} \rightarrow DE = \frac{48}{17} = \underline{\frac{2.9}{17}}$$