نام و نام خانوادگی: آلا داریی کلاس یازدهم تجربی C تعلیق ۲۲

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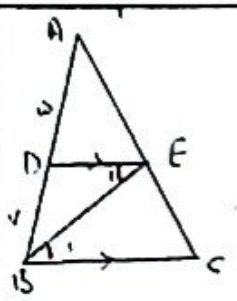

$DE \parallel BC \Rightarrow \frac{AD}{AB} = \frac{DE}{BC} = \frac{5}{12}$

" ، نیمساز BE $\Rightarrow \hat{E}_1 = \hat{B}_1$

$\frac{S_{BEC}}{S_{BED}} = \frac{\frac{1}{2}\cancel{\sin B} \times BE \times BC}{\frac{1}{2}\cancel{\sin \hat{E}} \times BE \times DE} = \frac{BC}{DE} = \frac{12}{5}$

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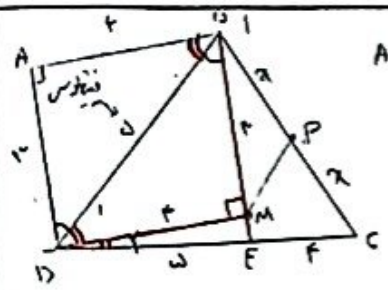

$AB \parallel DC$ ، BD مورب $\rightarrow \hat{B}_1 = \hat{D}_1 \rightarrow \hat{B}_1 = \hat{D}_1 = \hat{D}_2$

$BD = BD$

$\hat{B}_1 = \hat{D}_1 = A\hat{D}B = D\hat{B}E$ } وز $\Rightarrow A\hat{B}D \cong B\hat{M}D \Rightarrow \hat{M} = 90$

$\rightarrow DM = DM$

$\hat{D}_1 = \hat{D}_2$

$\hat{M} = 90$ } زاویه $\Rightarrow D\hat{M}B \cong D\hat{M}E \Rightarrow DE = 5 ، EC = 4 ، ME = BM = 3$

$EC \parallel MP$: عکس تالس { $BP = PC$ ، $ME = MB$ } $\xrightarrow[*]{BC \text{ وسط } M} \frac{MP}{EC} = \frac{BP}{BC} = \frac{BM}{BE} = 1/2 \Rightarrow MP = 1/2 \times 4 = 2$

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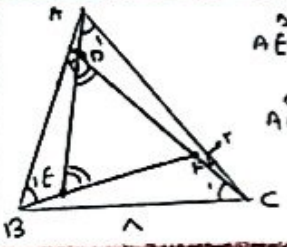

$A\hat{E}D$: $\hat{E} = \hat{B}_1 + \hat{A}_2 = \hat{A}_1 + \hat{A}_2 = \hat{A}$ (نیمساز)

$A\hat{C}D$: $\hat{D}$ نیمساز $= \hat{A}_1 + \hat{C}_1 = \hat{C}_1 + \hat{C}_2 = \hat{C}$

} $\Rightarrow A\hat{B}C \sim D\hat{E}F$

$\Rightarrow \frac{AC}{DE} = \frac{AB}{EF} = \frac{BC}{FD} \rightarrow \frac{AB}{3} = \frac{8}{2.5} \Rightarrow AB = 9.6$

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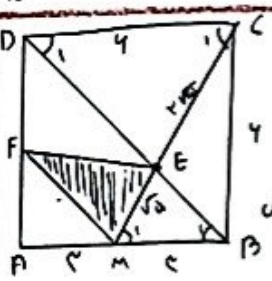

$\hat{E}_1 = \hat{E}_2$

$\hat{C}_1 = \hat{M}_1$ } متبادل
$\hat{D}_1 = \hat{B}$ } مورب

} $\Rightarrow D\hat{E}C \sim M\hat{E}B \Rightarrow \frac{MB}{DC} = \frac{ME}{CE} = 1/2 \rightarrow ME = 4$ ، $CE = 2x$

نیمساز $MC = \sqrt{5} = 2\sqrt{5} = 2x \Rightarrow x = \sqrt{5}$ ، MF

$B\hat{C}M = F\hat{M}A$

$\hat{M} = \hat{B} = 90$ } $B\hat{C}M \sim A\hat{M}F \rightarrow \frac{BC}{AM} = \frac{CM}{FF} \Rightarrow FM = 5/2\sqrt{5}$

$S_{FME} = 5/2\sqrt{5} \times \sqrt{5} \times 1/2 = \frac{15}{4}$ ← جواب

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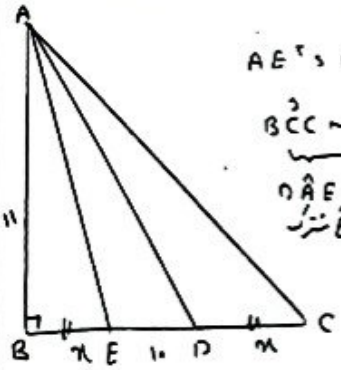

$AE^2 = 121 + x^2$

$\underbrace{B\hat{C}C \sim A\hat{E}D}_{D\hat{A}E = A\hat{C}D \text{ ، } \hat{E} \text{ مشترک}} \Rightarrow \frac{AE}{ED} = \frac{CE}{EA} \Rightarrow AE^2 = EC \times ED \rightarrow AE^2 = (10+x)(10)$

$\rightarrow (10+x)(10) = 121 + x^2 \Rightarrow x^2 - 10x + 21 = 0 \Rightarrow \begin{cases} x = 3 \\ x = 7 \end{cases}$

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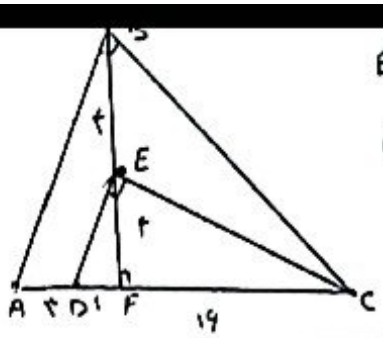

$EF^2 = DF \times FC = 1 \times FC = 16 \Rightarrow EF = 16$

$BF^2 = AF \times FC = 4 \times 16 = 64 \rightarrow BF = 8$

$BC = \sqrt{256 + 64} = 8\sqrt{5}$

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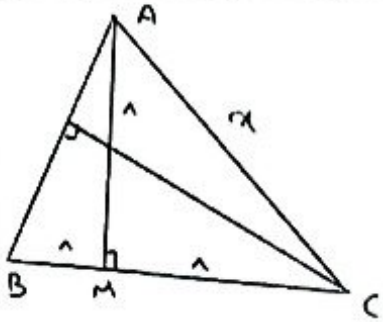

$x = 8\sqrt{2} \Rightarrow (8\sqrt{2})^2 + (4\sqrt{2})^2 = 16 = 4\sqrt{10}$

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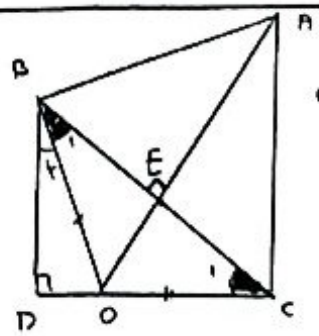

$BC = 2\sqrt{5} \Rightarrow BE = EC = \sqrt{5}$

فیثاغورس

$\frac{2}{\sqrt{5}} = \frac{4}{AE} \longrightarrow AE = 2\sqrt{5}$

$S_{ABE} = \frac{\sqrt{5} \times 2\sqrt{5}}{2} = 5$

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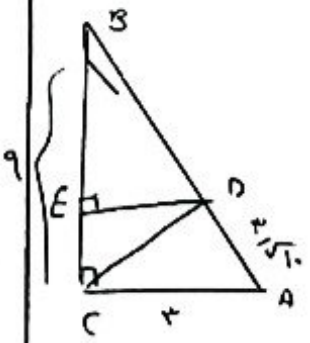

$AB = \sqrt{90} = 3\sqrt{10}$

$ABC \sim ABD \Rightarrow \frac{AD}{AC} = \frac{CA}{BA} \Rightarrow AD = \frac{3}{\sqrt{10}}$

$BD = 27\sqrt{10} - \frac{27\sqrt{10}}{10} = \frac{27\sqrt{10}}{10}$

$AC \perp BC,\ ED \perp BC \Rightarrow AC \parallel ED \Rightarrow \frac{BD}{BA} = \frac{27/\sqrt{10}}{3\sqrt{10}} = 0/9$

نسبت اضلاع است

$\Rightarrow \frac{BE}{BC} = \frac{BE}{9} = \frac{9}{10} \Rightarrow BE = 8/1$

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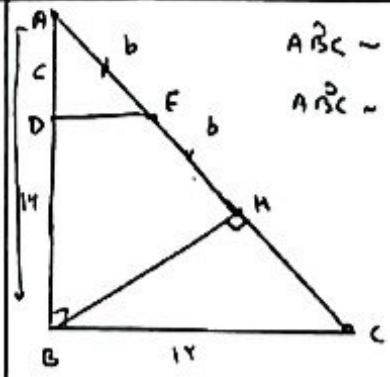

$ABC \sim ABE \Rightarrow \frac{x}{b} = \frac{12}{c} = \frac{12}{9}$ *

$ABC \sim BCH \Rightarrow \frac{BH}{12} = \frac{x \cdot 2b}{12} = \frac{12}{9} \Rightarrow b = 6/4 = BH = 9/6$

$\frac{x}{6/4} = \frac{12}{9} \rightarrow 9 = 8/48 \xrightarrow{\text{فیثاغورس}} AC = 5$