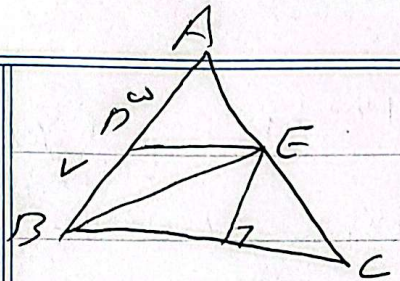
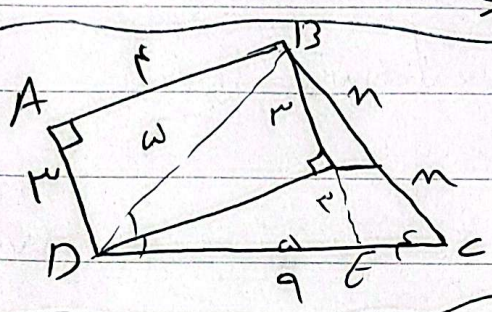


$BC \parallel DE$

$\frac{AD}{AB} = \frac{DE}{BC} \rightarrow \frac{۵}{۱۲} = \frac{DE}{AC}$ (۲) (۱)

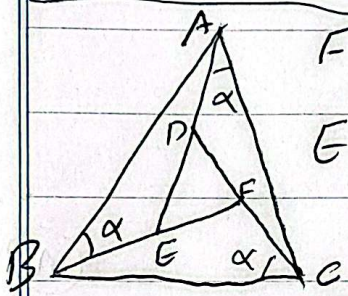
$\frac{S_{ACE}}{S_{BDE}} = \frac{\frac{1}{2} \times BC \times h}{\frac{1}{2} \times DE \times h} = \frac{۱۲}{۵}$ ✓



$DME \cong DMB$ (۲) (۲)

$\frac{MN}{۴} = \frac{۳}{۹} = \frac{1}{۳} \rightarrow MN = ۲$ ✓

(۳)



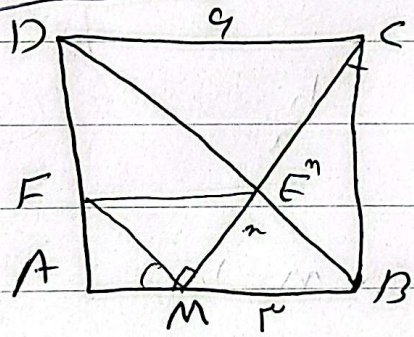
(۲)

$F = \alpha + \beta_1 = \beta$

$E = \alpha + A_1 = A$

$\left.\begin{array}{l} F = \alpha + \beta_1 = \beta \\ E = \alpha + A_1 = A \end{array}\right\} DEF \sim ABC \rightarrow \frac{DE}{AC} = \frac{DF}{BC} = \frac{EF}{AB}$

$\frac{۲۱۵}{۸} = \frac{۳}{AB}$ $AB = ۹,۶$ ✓



$BCM \sim AFM \rightarrow \frac{AF}{MB} = \frac{MF}{MC} = \frac{AM}{BC}$ (۳)

$\frac{AF}{۳} = \frac{۳}{۹}$ (۲) $\rightarrow AF = \frac{۳}{۴}$

فیثاغورث

$MF = AF^2 + AM^2 \Rightarrow MF = \frac{۳\sqrt{۵}}{۴}$

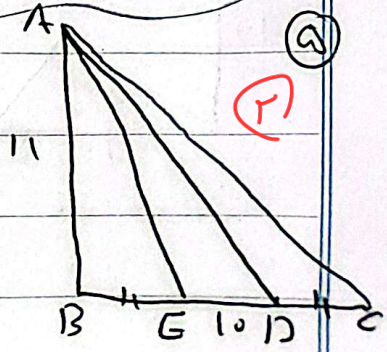
تالس: $\frac{n}{۳} = \frac{۶-n}{۶} \rightarrow ۶n = ۱۸ - ۳n$

$n = ۲$

$MB = ۴$

$ME^2 = ۱^2 + ۲^2 = ۵ \rightarrow ME = \sqrt{۵}$

$S_{FME} = \sqrt{۵} \times \frac{۳\sqrt{۵}}{۲} \times \frac{1}{۲} = \frac{۱۵}{۴} = ۳,۷۵$ ✓



(۵)

(۲)

$AED \sim ACE \rightarrow \frac{ED}{AE} = \frac{AD}{AC} = \frac{AE}{EC}$

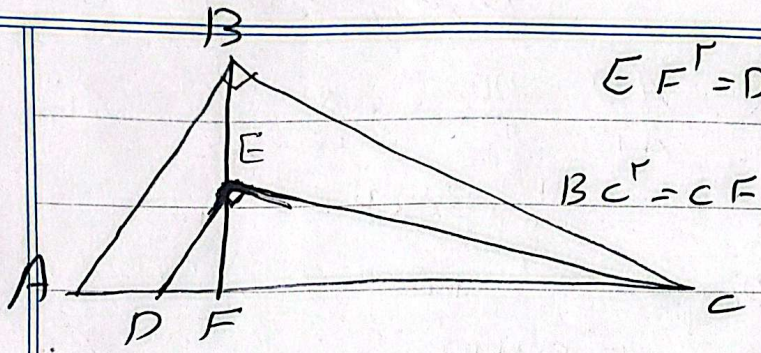
$AE^2 = (۱۰+n)(۱۰) = ۱۰۰ + ۱۰n$

$AB^2 + BE^2 = AE^2 \rightarrow ۱۲۱ + n^2 = ۱۰n + ۱۰۰$

$n^2 - ۱۰n + ۲۱ = ۰ \rightarrow (n-۷)(n-۳)$

$n = ۳$ ✓
$n = ۷$

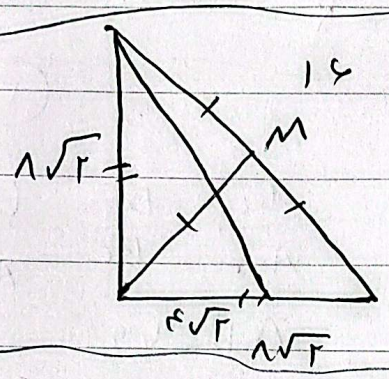
Sibo



$EF^2 = DF \cdot FC \rightarrow 16 = 1 \times FC$ (۲) (۹)

$BC^2 = CF \cdot AC \rightarrow 16 \times 20 = FC = 16$

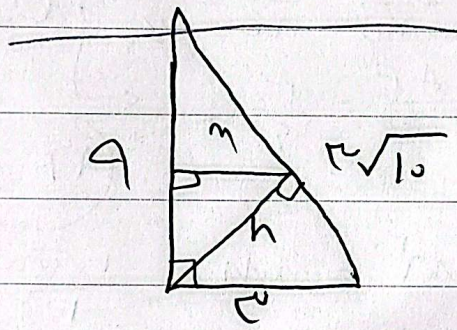
$BC = \sqrt{BC^2} = \sqrt{4^2 \times 2^2 \times 5} = 8\sqrt{5}$ ✓



(۲) (۷) میانه نظیر وتر ← مثلث قائم‌الزاویه

$AM' = BM'' = 4\sqrt{10}$ ✓

(۸)

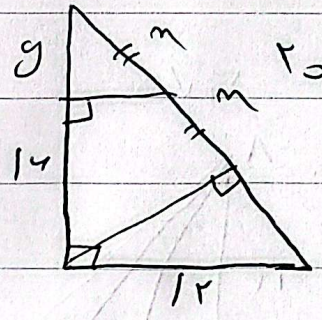


(۹) (۲)

$\frac{3\sqrt{10}}{9} = \frac{\sqrt{10}}{3} = \frac{h}{9}$

$\frac{9}{3\sqrt{10}} = \frac{\sqrt{10}}{n} \rightarrow n = 3,7$

$\frac{9}{3} = \frac{BE}{3,7} \Rightarrow BE = 11,1$ ✓



(۱۰) (۲)

$\frac{12}{25} = \frac{HC}{12} \rightarrow HC = 7,2$

$\frac{25 - HC}{2} \rightarrow m = 9,4$

$\frac{y}{9,4} = \frac{12}{25} \rightarrow y = 3,76$ ✓

فیثاغورس $\rightarrow BC = 2\sqrt{5}$

$BE = EC = \sqrt{5}$

$\triangle AEC \sim \triangle BCD \rightarrow \frac{2}{\sqrt{5}} = \frac{4}{AE} \rightarrow AE = 2\sqrt{5}$

$S_{ABE} = \frac{1}{2} \times \sqrt{5} \times 2\sqrt{5} = 5$ (گزینه ۵)