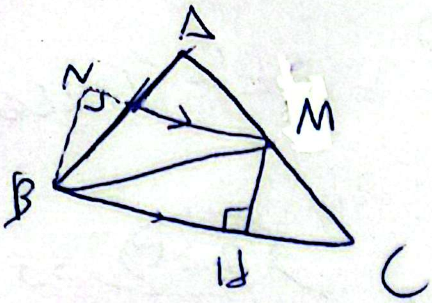
تستری سهیم جبر علم الانی یازدهم ۵

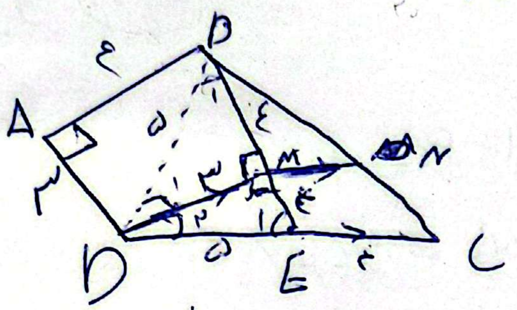
۱) من به جای M ، E گذاشتم



$$\left.\begin{aligned} S_{BCM} &= \frac{1}{2} \times BC \times BM \\ S_{BNM} &= \frac{1}{2} \times MN \times BN \end{aligned}\right\} \Rightarrow \frac{S_{BCM}}{S_{BNM}} = \frac{BC}{NM}$$ (۳) $\frac{12}{5}$

$$NM \parallel BC \Rightarrow \frac{BC}{NM} = \frac{12}{5}$$

۲)



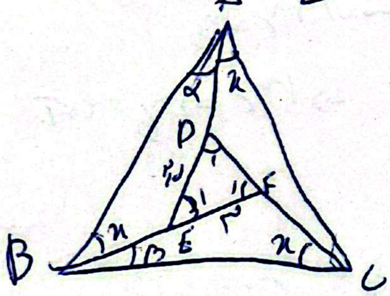
$BD = 5$ ⇐ رابطه فیثاغورس (۲)

$$\left.\begin{aligned} D_1 &= D_2 \\ M &= M = 90 \end{aligned}\right\} \Rightarrow B_1 = E_1 \Rightarrow B\hat{D}E$$ ⇐ متساوی الساقین

$BD = DE = 5 \Rightarrow EC = 4$

$$\frac{BM}{ME} = 1 \Rightarrow \frac{BM}{BE} = \frac{MN}{EC} = MN = 2$$

۳)



(۲)

$$\left.\begin{aligned} F_1 &= \hat{B_1} + \hat{C_2} = x + \beta \\ \hat{B} &= B_1 + B_2 = x + \beta \end{aligned}\right\} \Rightarrow F_1 = B$$

$$\left.\begin{aligned} E_1 &= D_2 + A_1 = x + \alpha \\ \hat{A} &= A_1 + A_2 = x + \alpha \end{aligned}\right\} \Rightarrow E_1 = A$$

$\Rightarrow DEF \sim CAB$

$$\frac{CF}{AB} = \frac{DF}{CB} \Rightarrow AB = 9.6$$

۴) (۳)

$B\hat{M}C \sim A\hat{M}F \Rightarrow AF = \frac{3}{2}$

$B\hat{M}E \sim C\hat{D}M \Rightarrow ME = \frac{1}{2}CE$

$MC = 3\sqrt{5}$ و $ME = \sqrt{5}$ و $CE = 2\sqrt{5}$

$$FM = \frac{3\sqrt{5}}{2} = \frac{3}{2}\sqrt{5}$$

$$\frac{\frac{3}{2}\sqrt{5} \times 2\sqrt{5}}{2} = \frac{15}{2} = 3\sqrt{5}$$

۵

۲

$\overset{\Delta}{AED} \sim CEA \Rightarrow \frac{AE}{CE} = \frac{ED}{EA} \Rightarrow AE^2 = CE \times ED$

$AE^2 = 144 + x^2 \Rightarrow AE = \sqrt{144 + x^2}$

$x^2 + 144 = (x+10)(10) \Rightarrow x^2 - 10x + 24 = 0$ $\rightarrow$ $x = 3$ ق ق ، $x = 7$ ق ق

۶

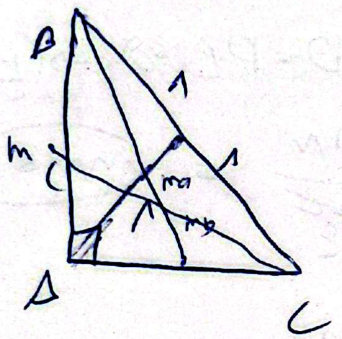
۲

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

$BC^2 = CF \times AC \Rightarrow BC^2 = 16 \times 20 \Rightarrow BC = 8\sqrt{5}$

۷ اندازه میانه نصف قاعده = مثلث قائم الزاویه متساوی الساقین داریم

۲



می دانیم $5m_a^2 = m_c^2 + m_b^2$

که در $m_c = m_b$ است

$5 \times 64 = 2m_c^2$ (۳۲۰)

$\Rightarrow m_c = m_b = 4\sqrt{10}$

۸

$BO^2 = (8-x)^2 = 4^2 + x^2 \Rightarrow DO = 3 \quad OC = 5$ ۲

$\left.\begin{array}{l} \hat{O}_1 = \hat{O}_2 \\ OA = OA \\ BO = CO \end{array}\right\}$ ض ز ض $\triangle AOB \cong AOC \Rightarrow S_{AOB} = S_{AOC}$

$BC^2 = 20 \Rightarrow BC = 2\sqrt{5} \Rightarrow CE = BE = \sqrt{5}$

$S_{BOC} = \frac{OE \times BC}{2} = \frac{BD \times OC}{2} \Rightarrow OE \times 2\sqrt{5} =$ [illegible] $\Rightarrow OE = \frac{\sqrt{5}}{2}$

$CE^2 = OE \times EA \Rightarrow 5 = \frac{\sqrt{5}}{2} \times EA \Rightarrow EA = 2\sqrt{5}$

$\frac{EA \times BE}{2} = 5$

CS CamScanner

۹

۲

$AB^2 = ۸۱ + ۹ = ۹۰ \Rightarrow AB = \sqrt{۹۰}$

$BC^2 = BD \times AB \Rightarrow ۸۱ = BD \times ۳\sqrt{۱۰} \Rightarrow BD = \frac{۲۷}{\sqrt{۱۰}}$

$BD^2 = BE \times BC \Rightarrow \frac{۲۷ \times ۲۷}{۱۰} = BE \times ۹ \Rightarrow BE = ۸,۱$

۱۰

$AC^2 = AB^2 + BC^2 \Rightarrow ۱۴۴ + ۲۵۶ = ۴۰۰ \Rightarrow AC = ۲۰$

۲

$BC^2 = CH \times AC \Rightarrow CH = ۷,۲$

$AC = AH + CH \Rightarrow AH = ۱۲,۸$

$\left.\begin{array}{l} AH = AE + EH \\ AE = EH \end{array}\right\} \Rightarrow AH = ۲AE$

$DE \parallel BC \Rightarrow \frac{DE}{BC} = \frac{AE}{AC} \Rightarrow \frac{x}{۱۶} = \frac{۶,۴}{۲۰} \Rightarrow x = ۵,۱۲$

CS CamScanner