۲۵

Date تکلیف ۲۲ امین اسماعیلی Subject

۱) (۲)

$DE \parallel BC \Rightarrow \hat{B}_1 = \hat{E}_1 \Rightarrow \sin \hat{B}_1 = \hat{E}_1$

$$\frac{S_{B\hat{C}E}}{S_{BDE}} = \frac{\frac{1}{2}\sin \hat{B}_1 \times BE \times BC}{\frac{1}{2}\sin E_1 \times BE \times ED} = \frac{BC}{ED} = \frac{AB}{AD} = \frac{12}{5}$$ ✓

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۲) نقطه برخورد $G \leftarrow$ با خط BC (۲)

$\left.\begin{array}{l} B\hat{D}M \\ D\hat{M}E \end{array}\right\}$ $\xrightarrow{\text{ز ض ز}}$ همنهشت

$DM = 4,\ BM = 3 \longrightarrow DB = 5 = DE \Rightarrow EC = 4$

$$\frac{BM}{BE} = \frac{1}{2} = \frac{MG}{EC_{(4)}} \Rightarrow MG = 2$$ ✓

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۳) (۲)

$A_1 + B_1 (A_2) = E \Rightarrow A_1 + A_2 = E \Rightarrow \hat{A} = \hat{E}$

$D_1 = A_2 + C_1 \Rightarrow \hat{D}_1 = C_1 + C_2 = \hat{C}$

به حالت دو زاویه $E\hat{D}F$ متشابه با مثلث بزرگی

$$\frac{3}{AB} = \frac{2.5}{8} \Rightarrow AB = 9.6$$ ✓

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۴) (۲)

$A\hat{F}M \sim M\hat{B}C \qquad AM = 3 = MB$

$AF = 1.5 \qquad \frac{6}{3} = \frac{MB_{(3)}}{AF} \qquad D\hat{E}C \sim E\hat{M}B$

$EM = \sqrt{9+36} = 3\sqrt{5} \longrightarrow EM = \sqrt{5}$, $EC = 2\sqrt{5}$ $\qquad \frac{EC}{EM} = 2$

$FM = \sqrt{(1.5)^2 + 9} = \frac{3\sqrt{5}}{2} \qquad S = \frac{1}{2} \times \frac{3\sqrt{5}}{2} \times \sqrt{5} = \frac{15}{4}$ ✓

PARDIS

Date Subject فرض $BE = x = DC$

$\hat{DAE} = \hat{ACD}$

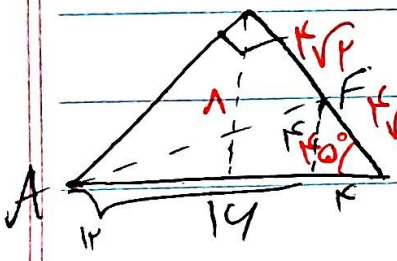
$G_1 = G_2 \Rightarrow ADE \sim AEC \quad \frac{AE}{CE} = \frac{ED}{AE}$ (۲) -۵

$AE^2 = EC \times ED \rightsquigarrow AE^2 = 100 + 10x \quad x^2 - 10x + 21 = 0$ $\begin{cases} DC = 7 \checkmark \\ DC = 3 \end{cases}$

$AE^2 = (11)^2 + x^2 \Rightarrow 121 + x^2 = 100 + 10x$

$EF^2 = DF \times FC \rightarrow 14 = 1 \times FC \Rightarrow FC = 14$ -۶ (۲)

$BC^2 = FC \times AC = 14 \times 20 \Rightarrow BC = 8\sqrt{5}$ ✓



$AF = \sqrt{14 + 144} = 4\sqrt{10}$ ✓ (۲) (۷

$DO = x \qquad 6 - x = \sqrt{x^2 - 6}$ (۲) (۸

$x^2 - 8x + 14 = x^2 + 6 \qquad x = 1.5 \qquad OC = OB = 2.0$

$BC = \sqrt{14 + 6} = 2\sqrt{5} \Rightarrow BE = \sqrt{5} \qquad OE = \sqrt{1.25}$

$5 = \sqrt{1.25} \times AE \Rightarrow AE = 3\sqrt{5} \qquad S_{AEB} = \frac{3\sqrt{5} \times \sqrt{5}}{2} = 5$ ✓

$AB = 3\sqrt{10}$ $\qquad AC \times BC = AB \times CD$

$AD = \frac{3}{\sqrt{10}} \qquad BD = \frac{27}{\sqrt{10}}$ $\qquad CD = \frac{9}{\sqrt{10}}, AD = \frac{3}{\sqrt{10}}$ (۹

$18 = x \times 3\sqrt{10}$

$\frac{27}{3} = \frac{x}{9} \Rightarrow x = 8.1$ ✓ (۲)

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$AC = 20$ $AB \times BC = AC \times BH$ $BH = \frac{48}{5}$ (1.

(2)

$144 = \left(\frac{48}{5}\right)^2 + HC^2 \Rightarrow HC = 7,2$ $AE = EH = 9,6$

$\frac{DE}{BC} = \frac{AE}{AC}$ $\frac{DE}{12} = \frac{9,6}{20} \Rightarrow DE = 5,76$ ✓