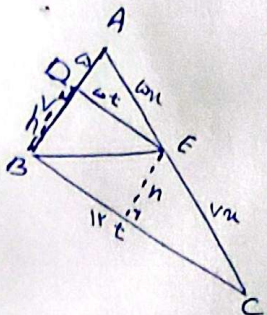


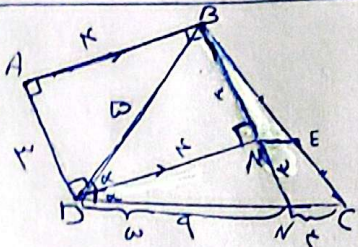
①



$$\frac{S_{BCE}}{S_{BDE}} = \frac{h \times 12}{h \times 60} = \frac{12}{60}$$

5

②

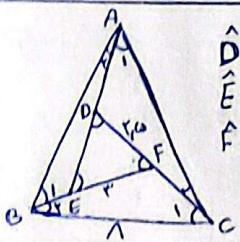


$$\hat{BDC} \sim \hat{BDM} \rightarrow DM \text{ خط میانه } BM = MN = 3$$

$$\frac{BM}{MN} = \frac{BE}{EC} = \frac{1}{1} \Rightarrow ME \parallel NC \xrightarrow{\text{مقدار}} \frac{BM}{BN} = \frac{ME}{NC} = \frac{1}{2} \Rightarrow \frac{1}{2} = \frac{1}{2} \Rightarrow n = 2$$

5

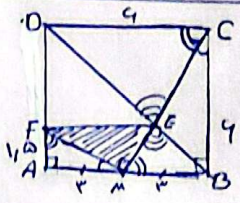
③



$$\left. \begin{array}{l} \hat{D} = \hat{C}_1 + \hat{A}_1 = \hat{A} \\ \hat{E} = \hat{B}_1 + \hat{A}_1 = \hat{A} \\ \hat{F} = \hat{C}_1 + \hat{B}_1 = \hat{B} \end{array} \right\} B_1, A_1, C_1 \Rightarrow \hat{ABC} \sim \hat{DEF} \Rightarrow \frac{DF}{AB} = \frac{EF}{AC} = \frac{24}{60} = \frac{2}{5}$$

5

④

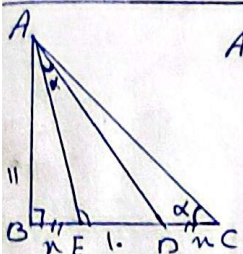


$$\hat{MCB} \sim \hat{AFM} \Rightarrow \frac{AM}{CB} = \frac{FA}{MB} = \frac{FM}{MC} = \frac{1}{2} \Rightarrow \frac{FM}{MC} = \frac{1}{2} \Rightarrow \frac{FM}{MC} = \frac{1}{2} \Rightarrow \frac{FM}{MC} = \frac{1}{2}$$

$$DCE \sim MEB \Rightarrow \frac{MB}{DC} = \frac{ME}{CE} = \frac{1}{2} \Rightarrow ME = 12 \Rightarrow S_{EFM} = 12 \times \frac{1}{2} \times 12 = 72$$

5

⑤



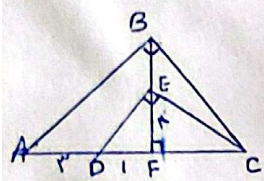
$$AE = \sqrt{12^2 + 12^2}$$

$$\hat{CEA} \sim \hat{AED} \Rightarrow \frac{AE}{DE} = \frac{CE}{AE} \Rightarrow AE^2 = DE \times CE \Rightarrow 12^2 + 12^2 = 12 \times (12 + 48) \Rightarrow 288 = 720 \Rightarrow n^2 - 10n + 21 = 0$$

$$(n-3)(n-7) \Rightarrow \begin{cases} n=3 \\ n=7 \end{cases}$$

5

⑥

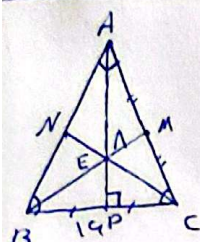


$$EF^2 = DF \times FC \Rightarrow 12^2 = 12 \times FC \Rightarrow FC = 12$$

$$BF^2 = 4 \times 12 \Rightarrow BF = 8 \Rightarrow BC^2 = BF^2 + FC^2 \Rightarrow BC^2 = 64 + 144 = 208 \Rightarrow BC = \sqrt{208}$$

5

⑦



میان نصف اضلاع وارد بر آن - قائم الزامی در رأس A

$$144 = n^2 + n^2 \Rightarrow 121 = n^2 \Rightarrow n = \sqrt{121} = 11 \Rightarrow AM = MC = 11\sqrt{2}$$

$$AMB: MB^2 = (11\sqrt{2})^2 + (11\sqrt{2})^2 = 484 + 484 = 968 \Rightarrow MB = \sqrt{968} = 22\sqrt{2}$$

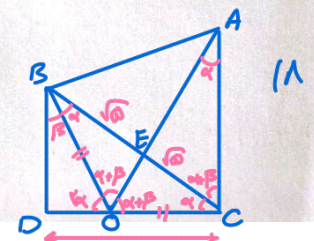
5

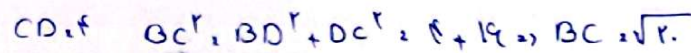
$$\alpha + \beta = 90^\circ$$

$$BD^2 + DC^2 = BC^2 \rightarrow BC = 2\sqrt{10} \Rightarrow BE = EC \rightarrow BE = EC = \sqrt{10}$$

$$\frac{1}{\sqrt{10}} = \frac{F}{AE} = \frac{1\sqrt{10}}{10} \rightarrow AE = \sqrt{10}$$

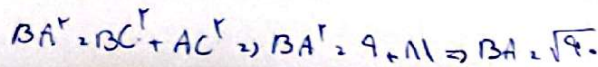
$$S_{ABE} = \frac{1}{2} AE \times BE = 5$$





$$BA^2 + BE^2 + BC^2 \Rightarrow \sqrt{6} + \sqrt{2} + 1, \sqrt{10} \Rightarrow AB = \sqrt{10} \Rightarrow AB^2 + BE^2 + AE^2 \cdot 10 + 6 + AE^2$$

①



$$BD, BE, BC = (\sqrt{9} - \frac{\sqrt{51}}{10}), 9 + \frac{9}{10} - \frac{\sqrt{51}}{10}, \frac{\sqrt{9}}{10} = 9 + BE =$$

9



$$AC^T, \gamma \omega \gamma + 1 \neq f \Rightarrow AC = T.$$

$$AB^T, BH^T, AH^T$$

$$\text{BCl}_2 \cdot \text{HCl} + \text{BH}^+ \Rightarrow \text{H}^+ + \text{HCl} + \text{BH}^+ \Rightarrow \text{BH}^+ + \text{H}^+ + \text{HCl}$$

$$AlBr_3 + HBr + (R-HC) \rightarrow R_2CH + H_2$$

$$HC \approx V, r$$

$$\frac{r_0 - v_1 r}{r} = q_1 r = AE$$

$$DE \parallel BC \rightarrow \frac{AE}{AC} = \frac{DE}{BC} \Rightarrow \frac{4}{12} = \frac{DE}{12} \Rightarrow DE = 4$$