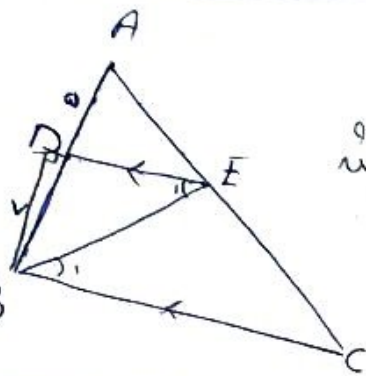
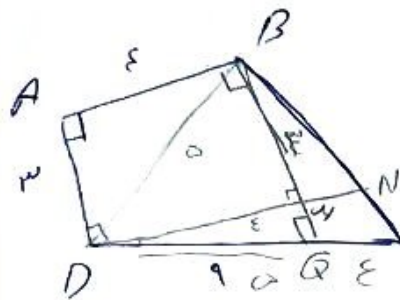




ارتفاع برابر است

$$\frac{S_{\triangle CDE}}{S_{\triangle BDE}} \cdot \frac{BC}{DE} = \frac{AB}{AD} = \frac{12}{5} = 2.4$$

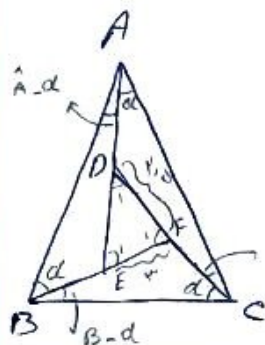


$$AB \cdot MD = \dots$$

$$AD = 3, BA = 4 \rightarrow \text{مساحت} = DB = 2$$

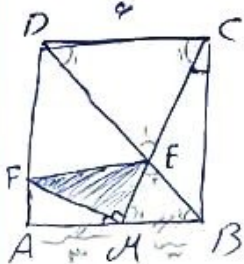
$$BDC = 2 BDM$$

$$\triangle BDC \sim \triangle BDM \Rightarrow \frac{BD}{BM} = \frac{BC}{DM} \Rightarrow \frac{2}{BM} = \frac{4}{DM} \Rightarrow DM = 2BM$$



$$\begin{cases} \hat{F} = \hat{B} - \hat{\alpha} + \hat{\alpha} = \hat{B} \\ \hat{E} = \hat{A} - \hat{\alpha} + \hat{\alpha} = \hat{A} \\ \hat{D} = \hat{C} - \hat{\alpha} + \hat{\alpha} = \hat{C} \end{cases} \Rightarrow \triangle DEF \sim \triangle ABC$$

$$\Rightarrow \frac{DF}{BC} = \frac{EF}{AB} = \frac{DE}{AC} = \frac{1}{2} \Rightarrow AB = \frac{1}{2} \cdot 18 = 9$$

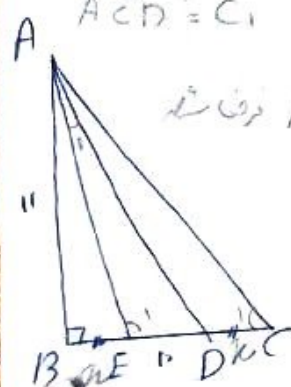


$$CD \parallel MB \Rightarrow \frac{CE}{EM} = \frac{DE}{EB} = \frac{CE}{EM} = 2 \Rightarrow CE = 2EM$$

$$CM = CE + EM = 2EM + EM = 3EM$$

$$CM = MB + BC \rightarrow 3ME = 4 + 4 = 8 \rightarrow ME = \frac{8}{3} \rightarrow MC = \frac{8}{3} \cdot 3 = 8$$

$$\begin{cases} \hat{DAE} = \hat{A}_1 \\ \hat{ACD} = \hat{C}_1 \\ \hat{E}_1 = \hat{E}_1 \end{cases} \Rightarrow \triangle ADE \sim \triangle AEC \Rightarrow \frac{AD}{AC} = \frac{AE}{CE} = \frac{ED}{AE}$$



$$BE = DC$$

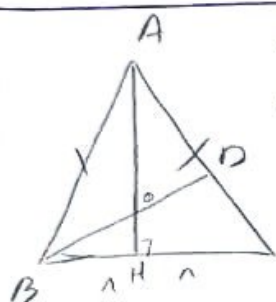
$$AE = 10(1 + \sqrt{2}) = 10 + 10\sqrt{2}$$

$$AE = AB + BE \rightarrow 10 + 10\sqrt{2} = 10 + BE \cdot \frac{CD}{BE} = 10 + \sqrt{2} \cdot 10 = 10 + 10\sqrt{2}$$

$$\rightarrow x^2 - 10x + 10 = 0 \rightarrow (x-5)(x-2) = 0 \Rightarrow x = 5 \text{ or } x = 2$$

$$\Delta DFC \rightarrow EF^r = DF \times FC \rightarrow E^r = 1 \times FC \rightarrow FC = 14$$

$$\Delta ABC \rightarrow BC^r = CF \times CA \rightarrow 14 \times (14 + E) = 14 \times 20 \rightarrow BC = 1\sqrt{5}$$



$$AH = 14/r \quad HO = 1/r \rightarrow r \cdot h = 1 \rightarrow h = \frac{1}{r}$$

$$AH = \frac{14}{r} \quad HO = \frac{1}{r}$$

$$\Delta BOH = 14 + \frac{1}{r} = \frac{140}{r} = \frac{E \sqrt{10}}{r} = 130 \rightarrow \text{خطا}$$

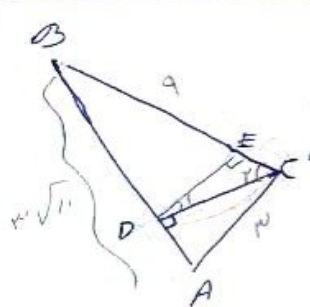
$$\frac{BD}{BO} = \frac{14}{\frac{E \sqrt{10}}{r}} \rightarrow BD = E \sqrt{10}$$

$$\left. \begin{array}{l} OE = OE \\ OB = OC \\ \angle O = \angle O \end{array} \right\} \Delta OBE \sim \Delta OCE \rightarrow BE = EC$$

$$\overset{\text{خطا}}{\rightarrow} BC = \sqrt{1^2 + 19^2} = \sqrt{380} \rightarrow BC = 2\sqrt{95} \quad EC = \sqrt{95}$$

$$\left. \begin{array}{l} \hat{D} = \hat{E} = 90^\circ \\ DB \parallel AC \rightarrow \hat{B}_1 = \hat{C}_1 \end{array} \right\} \Delta BCD \sim \Delta AEC \rightarrow \frac{r}{\sqrt{5}} = \frac{E}{AE} = \frac{2\sqrt{5}}{5} \rightarrow AE = 2\sqrt{5}$$

$$S_{ABE} = \frac{AE \times EC}{2} = \frac{(2\sqrt{5})(\sqrt{5})}{2} = 5 \leftarrow \text{جواب}$$



$$D_1 = 11 \quad D_1 + C_1 = 110$$

$$C_1 = 9 \rightarrow BA = 11\sqrt{10}$$

$$BC^r = BD \times BA \rightarrow DB = \frac{11}{\sqrt{10}} = \frac{11\sqrt{10}}{10}$$

$$\Rightarrow DC^r = CE^r \times CB^r \rightarrow \frac{11}{10} = CE^r \times 11 \rightarrow CE^r = \frac{1}{10} \rightarrow CE = \frac{1}{\sqrt{10}}$$

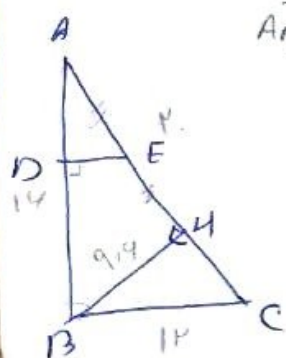
$$BC - CE = EB = 9 = \frac{1}{\sqrt{10}} = 114$$

$$DC^r + BD^r = BC^r$$

$$DC^r = 11 - \frac{\sqrt{10} \cdot 9}{10} = \frac{11}{10} \rightarrow DC = \frac{11}{\sqrt{10}} \cdot 9$$

$$DE^r + EC^r = DC^r$$

$$CE^r = \frac{\frac{11}{10}}{\frac{1}{10}} = \frac{1}{10} \rightarrow CE = \frac{1}{\sqrt{10}}$$



$$\Delta ABH \rightarrow DE \times AB = BH \times AE$$

$$S = \frac{BH \times AE}{2} = \frac{14 \times 14}{2} \rightarrow BH = 9.4$$

$$14^r = 140^r + (AH)^r \rightarrow 14E = AH \Rightarrow AE = 9.4E$$

$$DE = 9.4 \times 9.4E$$

$$\frac{DE}{14} = \frac{1}{14} \times 14 = 1 \rightarrow AE$$