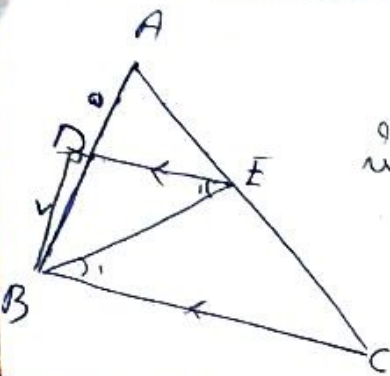
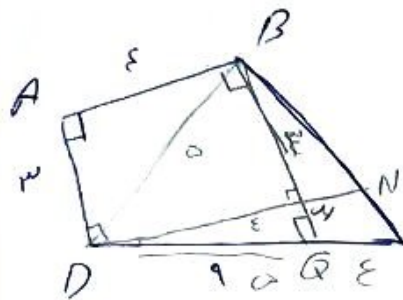




ارتفاع برابر است

$$\frac{S_{\triangle CDE}}{S_{\triangle BDE}} \cdot \frac{BC}{DE} = \frac{AB}{AD} = \frac{12}{5} = 2,4$$

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$AB \cdot MD = \dots$

$AD = 3, BA = 4 \rightarrow \dots = DB = 2$

$BD = 2 \cdot BM$

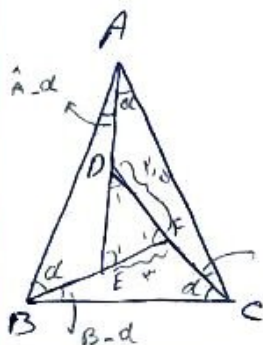
$AB \cdot MD = \dots$

$BD = 2$

$\dots \Rightarrow PQ = 5$

$MN = \frac{1}{2} QC \rightarrow MN = \frac{1}{2} \times 4 = 2$

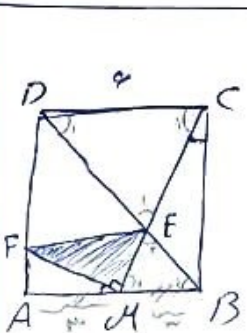
۹



$\hat{F} \leftarrow \dots, \hat{B} - \hat{\alpha} + \hat{\alpha} = \hat{B}$
 $\hat{E} \leftarrow \dots, \hat{A} - \hat{\alpha} + \hat{\alpha} = \hat{A}$
 $\hat{D} \leftarrow \dots, \hat{C} - \hat{\alpha} + \hat{\alpha} = \hat{C}$

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$\Rightarrow \frac{DF}{BC} = \frac{EF}{AB} = \frac{DE}{AC} = \frac{VW}{A} = \frac{W}{AB} \rightarrow AB = \frac{W \cdot A}{V \cdot W} = 9,4$



$CD \parallel MB \rightarrow \left. \begin{matrix} \angle C = \angle B \\ \angle D = \angle B \end{matrix} \right\} \triangle DEC \sim \triangle MB \Rightarrow \frac{DC}{MB} = \frac{DE}{EB} = \frac{CE}{ME} = 2 \rightarrow CE = 2ME$

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

$CM^2 = MB^2 + BC^2 \rightarrow 9ME^2 = 3^2 + 9 = 18 \rightarrow ME^2 = 2 \rightarrow ME = \sqrt{2}$

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$\left. \begin{matrix} \angle PAE = \angle A_1 \\ \angle ACD = \angle C_1 \end{matrix} \right\} \triangle ADE \sim \triangle AEC \rightarrow \frac{AD}{AC} = \frac{AE}{CE} = \frac{ED}{AE} \rightarrow AE^2 = ED \times CE$



$BE = DC$

$AE^2 = 10(10 + 2BE) = 100 + 20BE$

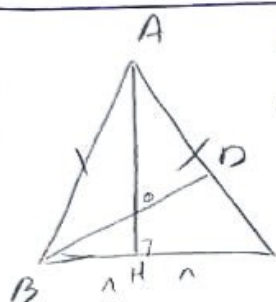
۹

$AE^2 = AB^2 + BE^2 \rightarrow 100 + 20BE = 10^2 + BE^2 \rightarrow BE^2 - 20BE + 10 = 0$

$\rightarrow x^2 - 20x + 10 = 0 \rightarrow (x-4)(x-16) = 0 \rightarrow x=4 \text{ or } x=16$

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

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



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

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

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

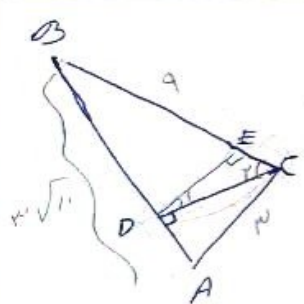
$$\frac{BD}{BO} = r = \frac{BD}{\frac{E \sqrt{10}}{r}} \rightarrow BD = E \sqrt{10}$$

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

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

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

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



$$D_1 = 90^\circ \quad D_1 + C_1 = 180^\circ$$

$$C_1 = 90^\circ \rightarrow BA = 13\sqrt{10}$$

$$BC^r = BD \times BA \rightarrow DB = \frac{11}{13\sqrt{10}} = \frac{11}{130}$$

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

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

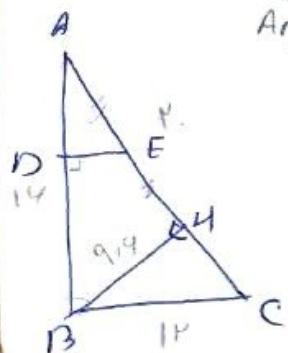
$$DC^r = 11 - \frac{11}{10} = \frac{109}{10} \rightarrow DC = \frac{9}{\sqrt{10}}$$

$$DE^r + EC^r = DC^r \quad 1, \sqrt{5}$$

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

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

$$9 - \frac{1}{\sqrt{10}} = 111$$



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

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

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

$$DE = 9.4 \times 9.4E$$

$$\frac{DE}{14} = \frac{9.4 \times 14}{14} = 9.4E$$

$$MC^r = \varphi^r + \psi^r \rightarrow MC = \mu\sqrt{a}$$

$$\tan F = \frac{\mu}{AF} = \tan M = \frac{BC}{MB} = \mu \rightarrow AF = \frac{\mu}{\mu}$$

$$FM^r = AF^r + AM^r \rightarrow MF = \frac{\mu\sqrt{a}}{\mu}$$

$$\triangle DEC, \triangle MEB \text{ نسبت متساوی (در مثلث)} = \frac{y}{\mu} = \mu \rightarrow \mu y = \mu\sqrt{a} \rightarrow y = \sqrt{a}$$

$$S_{FME} = \frac{1}{\mu} ME \times MF = \frac{1a}{\mu}$$

$$\frac{x}{\mu} = \frac{y}{a} \rightarrow y = \mu x$$

$$x^r = y(9-y) = \mu x(9-\mu x) \rightarrow x = 1, \sqrt{1}, y = 1, 1$$

