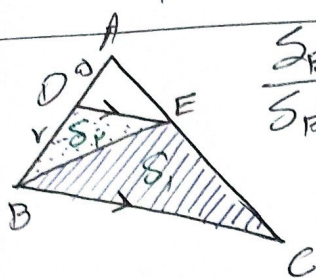


۵, ۷, ۵



$$\frac{S_{\triangle BCE}}{S_{\triangle BDE}} = 8 \rightarrow \frac{S_1}{S_2} = \frac{\sqrt{h} \cdot 12m}{\sqrt{m} \cdot 5h} = \frac{12}{5} = 2,4 \checkmark$$

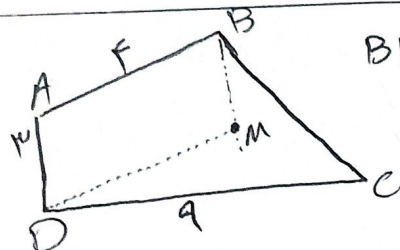
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تجربیه تیر ۱۴۰۳ داخل

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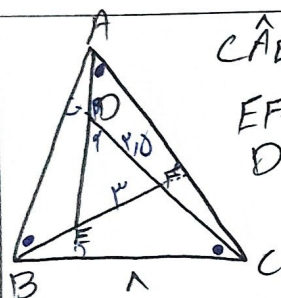


$$\hat{BDC} = 2\hat{BDM}$$

ریاضیه تیر ۱۴۰۲ داخل

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۳

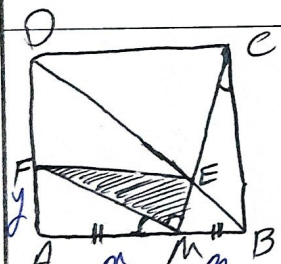


$$\hat{CAE} = \hat{ABF} = \hat{BCD}$$

$$EF = 3$$

$$DF = 2,5$$

$$AB = 8$$



$$AM = MB$$

$$\hat{BCF} = \hat{AMF}$$

$$CM = \sqrt{3^2 + 4^2} = \sqrt{25}$$

$$MB = 3 \text{ } \left\{ \begin{array}{l} \text{کمانه} \\ \text{کمانه} \end{array} \right. \rightarrow DCE \sim MEB \rightarrow \frac{ME}{MC} = \frac{1}{3} = \frac{x}{\sqrt{25}}$$

$$DC = 4$$

$$\left\{ \begin{array}{l} y = \frac{3}{4} \\ x = 3 \end{array} \right.$$

$$MF = \sqrt{3^2 + \left(\frac{3}{4}\right)^2} = \sqrt{9 + \frac{9}{16}} = \sqrt{\frac{145}{16}}$$

$$\Rightarrow x = \sqrt{5} = ME$$

$$\Rightarrow \Delta \text{ Cofm} = \sqrt{5} \times \sqrt{\frac{145}{16}} = \sqrt{\frac{725}{16}} = \sqrt{\frac{29 \times 25}{16}} = \frac{5\sqrt{29}}{4} \approx 6,7$$

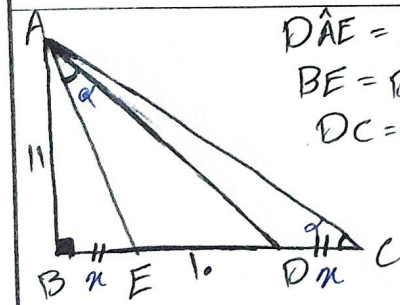
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ریاضیه اردیبهشت ۱۴۰۳ داخل

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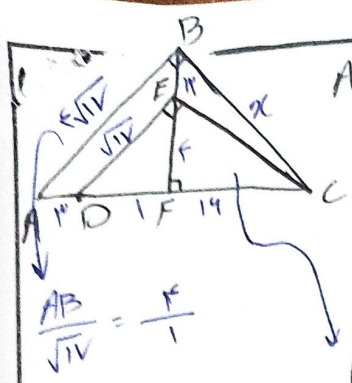
۵



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

$$BE = DC$$

$$DC = 8$$



$$\hat{ABC} = \hat{CED} = 90^\circ$$

$$\begin{aligned} AD &= 7 \\ EF &= 1 \\ DF &= 1 \\ BC &= 8 \end{aligned}$$

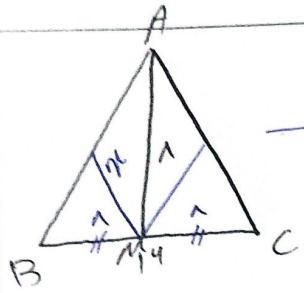
$$\frac{EB+1}{\sqrt{17}} = \frac{1}{\sqrt{17}} \rightarrow EB = 17$$

$$\frac{17+1}{14} = \frac{1}{EC} \rightarrow EC^2 = EF^2 + FC^2$$

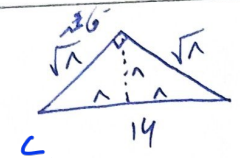
$$(\sqrt{17})^2 = 1 \times DC \rightarrow DC = 17$$

$$EC = \sqrt{14^2 + 1^2} = 14.19$$

$$\Rightarrow m = 4.44$$

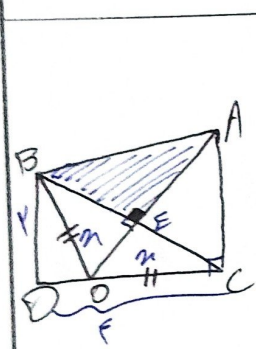


$$a = 8\sqrt{2}$$



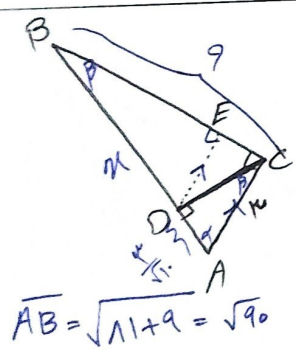
$$a^2 + a^2 = (14)^2 \rightarrow a = 8\sqrt{2}$$

$$m^2 = (8\sqrt{2})^2 + (4\sqrt{2})^2 \rightarrow m = 4\sqrt{10}$$



$$\begin{aligned} BD &= 7 \\ CD &= 7 \\ \hat{ACD} &= 90^\circ \\ \angle ABE &= 5^\circ \end{aligned}$$

تجربہ تیرہ ۱۴۰۴ داخل



$$\begin{aligned} AC &= 9 \\ BC &= 9 \\ DE \perp BC &\rightarrow DE \parallel AC \\ \hat{C} &= 90^\circ \end{aligned}$$

$$DE \parallel AC \rightarrow \text{شکل متشابه}$$

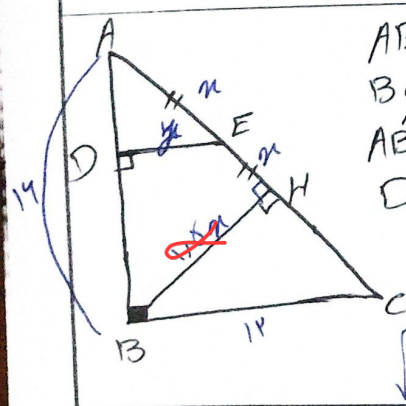
$$ADC \sim ABC \text{ (I)}$$

$$BDE \sim ABC \text{ (II)}$$

$$\text{(I)} \rightarrow \frac{\sqrt{90}}{9} = \frac{9}{AD} \rightarrow AD = \frac{9}{\sqrt{90}} = \sqrt{\frac{11}{90}} = \sqrt{\frac{9}{10}} = \frac{3}{\sqrt{10}}$$

$$\text{(II)} \rightarrow \frac{9}{9} = \frac{DE}{BE} \Rightarrow m = \sqrt{90} - \frac{3}{\sqrt{10}} \Rightarrow \frac{\sqrt{90}}{9} = \frac{\sqrt{90} - \frac{3}{\sqrt{10}}}{DE} \rightarrow DE = 2.14$$

$$BE = 3DE$$



$$\begin{aligned} AB &= 14 \\ BC &= 17 \\ \hat{ABC} &= 90^\circ \\ DE &= 5 \end{aligned}$$

$$\Rightarrow \frac{AD}{DE} = \frac{AB}{BC} = \frac{14}{17} = \frac{1}{4} = \frac{4}{17}$$

$$\frac{m}{y} = \frac{14}{17m}$$

$$m^2 = 14y \rightarrow y = \frac{m^2}{14} = 4.14$$

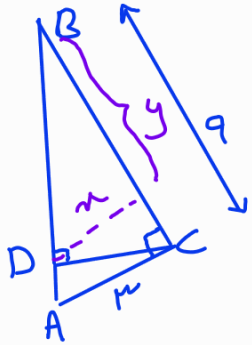
$$ABH \sim BHC \rightarrow \frac{14}{17} = \frac{m}{14} \rightarrow \frac{14m}{17} = \frac{m}{14}$$

$$\sqrt{\frac{9}{17}m^2 + 5m^2} = \frac{5}{17}m \rightarrow 14 \rightarrow m = 14 \times \frac{5}{17} = \frac{70}{17} = 4.12$$

$$(EF)^{\perp} = DF \times FC \rightarrow (F)^{\perp} = FC \times 1 \rightarrow FC = 14$$

-4

$$(BC)^{\perp} = FC \times AC \rightarrow (BC)^{\perp} = 14 \times 20 \rightarrow BC = \boxed{1\sqrt{5}}$$



$$\frac{x}{r} = \frac{y}{q} \rightarrow y = rx$$

$$x^2 = y(9-y) \rightarrow x = 2,7 \quad (y = 1,1)$$

-9

$$\text{مستقيم} \rightarrow AC = 20$$

-10

$$S_{ABC} = \frac{AB \times BC}{2} = \frac{BH \times AC}{2} \rightarrow 14 \times 12 = BH \times 20 \rightarrow BH = \boxed{9,4}$$

$$\triangle ABC, (14)^{\perp} = AH \times 20 \rightarrow AH = 12,1 \rightarrow AE = \frac{AH}{r} = \boxed{4,4}$$

$$\triangle ADE \sim \triangle ABH \rightarrow \frac{DE}{BH} = \frac{AE}{14} \rightarrow \frac{DE}{9,4} = \frac{4,4}{14} \rightarrow DE = \boxed{3,14}$$