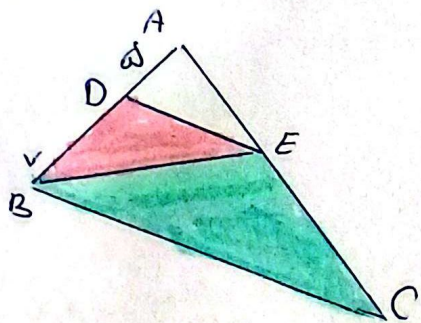


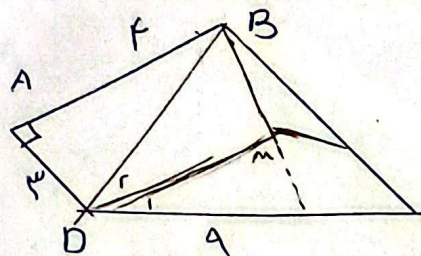


$$\frac{SBCE}{SBDE} \neq$$

$$\frac{BC}{DE} = \frac{AB}{AD}$$

$$\frac{1}{8} \Rightarrow \frac{BC}{DE} = \frac{11}{1.8}$$

$$BC \parallel DE \rightarrow \triangle ADE \sim \triangle ABC$$

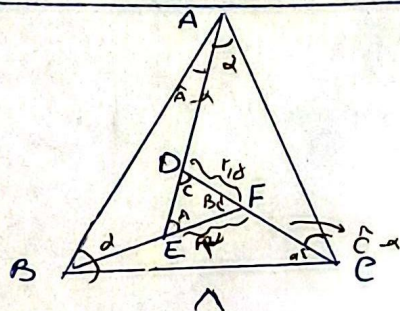


$$\hat{BDC} = \hat{BDM}$$

$$\hat{D}_1 = \hat{D}_2 \rightarrow m\hat{DF} \sim m\hat{DB}$$

$$BM = MF = c \rightarrow DF = d$$

$$FC = e \Rightarrow ME = r$$



$$DF = r, EF = c, \hat{ABF} = \hat{CAE} = \hat{BCD}$$

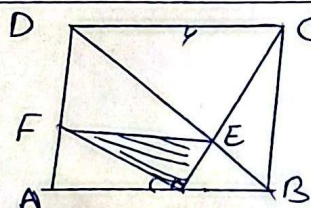
$$AB \neq$$

$$\hat{EFD} = \hat{B} - \alpha + \alpha = \hat{B}$$

$$\hat{EDF} = \hat{C} - \alpha + \alpha = \hat{C}$$

$$\hat{DEF} = \hat{A} - \alpha + \alpha = \hat{A}$$

$$\frac{r}{1} = \frac{c}{\alpha} \rightarrow \alpha = \frac{r}{c}$$



$$\triangle MBC \sim \triangle AMF$$

$$\frac{AF}{r} = \frac{r}{y} \rightarrow AF = \frac{r^2}{y}$$

$$MF = \sqrt{9 + \frac{9}{4}} = \frac{c\sqrt{5}}{2}$$

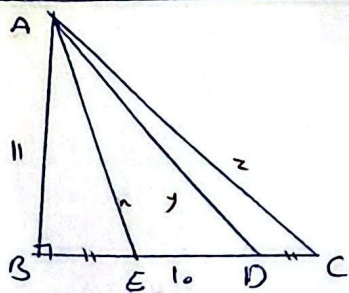
$$\frac{r}{y} = \frac{ME}{CE} \Rightarrow CE = rME$$

$$ME + EC = c\sqrt{5}$$

$$ME + rME = c\sqrt{5} \rightarrow ME = \sqrt{5}$$

$$S_{MEF} = \frac{FM \cdot ME}{2} = \frac{r\sqrt{5} \cdot \sqrt{5}}{2} = \frac{5r}{2}$$

$$ME = \sqrt{c^2 + 9} = r\sqrt{5}$$



$$DC = d$$

$$BE = DC, \hat{DAE} = \hat{ACD}$$

$$\frac{x}{1+m} = \frac{y}{2} = \frac{1}{\alpha} \rightarrow x = 1 \cdot (1+m)$$

$$|r| + m^2 = 100 + 1 \cdot m \rightarrow m^2 - 1 \cdot m + |r| = 0$$

$$(m+1)(m-1) = 0$$

$$BC = d$$

$$DF = 1, EF = r, AD = y, \hat{ABC} = \hat{CED} = \alpha$$

$$EF^2 = DF \cdot FC$$

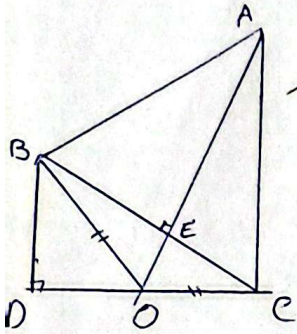
$$14 = 1 \times FC \rightarrow FC = 14$$

$$BC^2 = CF \times CA \rightarrow BC^2 = 14 \times 21 \Rightarrow BC = \sqrt{294}$$

میان دو برآین نصف قاعده (متر) است یعنی، مثل قائم الزاویه است از آنجا که
 ساق های مثل را برابریم

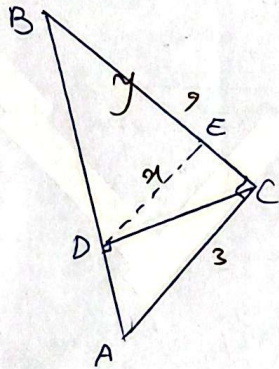
$$x^2 + x^2 = 16 \rightarrow 2x^2 = 16 \rightarrow x^2 = 8 \rightarrow x = \sqrt{8} \quad \text{یا به صورت دیگر} \rightarrow \sqrt{(x\sqrt{2})^2 + (x\sqrt{2})^2} = \sqrt{16} = 4 \quad \text{جواب}$$

$$S_{ABE} = 4 \quad CD = 2, BD = 2 \quad (1)$$



از فاصله نقطه ای از دو سر پاره خط به بیانه با این مقدار روی خط از زاویه است پس AM باشد
 است. $\hat{A}$ مثلث AEB و AEC هم مختلند در مثل BDC و BDC و ECM
 BDC و ECM هم مختلند. و مثل های AEC و ECM هم مختلند $\angle AEC = \angle BDC$ مختلند
 $S_{BDC} = 4$ BC هر برابر $\sqrt{8}$ $EC = \sqrt{8}$ نصف ساق یعنی $\sqrt{8}$

$$K = \frac{EC}{BD} = \frac{\sqrt{8}}{2} \rightarrow S = FK^2 = 4\left(\frac{\sqrt{8}}{2}\right)^2 = 8 \quad \text{جواب}$$



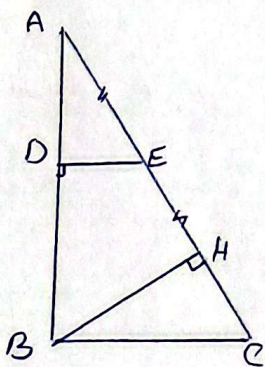
$$BE = 4, BC = 4, AC = 3 \quad (2)$$

$\hat{C} = 90^\circ$
 در مثل BDC نه قائم الزاویه است ارتفاع در آن
 (DE) و ساق های آن مختلند و روی دایره است

$$\frac{x}{y} = \frac{y}{4-y} \rightarrow y = 3x$$

$$x^2 = y(4-y) = 3x(4-3x) \rightarrow x = 2.4 - 9x \rightarrow x = 0.27$$

$$\rightarrow y = 3x = 0.81 \quad \text{جواب}$$



$$\triangle ABC \text{ قائم } \angle B, BC = 12, AB = 14 \quad (1)$$

$$DE \parallel BC$$

$$254 + 144 = AC^2$$

$$AC = 20$$

$$BC^2 = CH \times AC \rightarrow 144 = CH \times 20 \rightarrow CH = 7.2$$

$$AH = 12.8 \rightarrow 2AE = 12.8 \rightarrow AE = 6.4$$

$$\frac{DE}{BC} = \frac{AE}{AC} \rightarrow DE = 12 \times \frac{6.4}{20} = 3.84$$

$$BC^2 = 4 + 14 \rightarrow BC = \sqrt{18}$$

$$BC = 3\sqrt{2}$$

$$CE = BE = \sqrt{8}$$

$$2 = \frac{AE}{\sqrt{2}} \rightarrow AE = 2\sqrt{2}$$

$$S_{ABE} = \frac{1}{2} \times \sqrt{2} \times 2\sqrt{2} = 2$$