

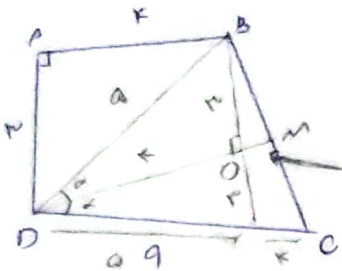
نصف ABC به BC موازی است DE است BCE خط بر جانب مثلث BDE است ؟

$$DE \parallel BC \Rightarrow \frac{AB}{AD} = \frac{AC}{AE} = \frac{BC}{DE} = \frac{11}{9}$$

$$\frac{S_{BCE}}{S_{BDE}} = \frac{\frac{1}{2} \times h \times BC}{\frac{1}{2} \times h \times DE} = \frac{11}{9} = \boxed{1 \frac{2}{9}}$$

1

در مثلث ABC از نقطه D بر خط AB، AD عمود بر BC است. از نقطه M در وسط BC خط عمود بر AD را رسم کنید. BDC = 2 \angle DM



$$\hat{A} = 90^\circ \Rightarrow \triangle ABD \sim \triangle ACD \Rightarrow DM = \frac{1}{2} BC \quad BM = \frac{1}{2} BC$$

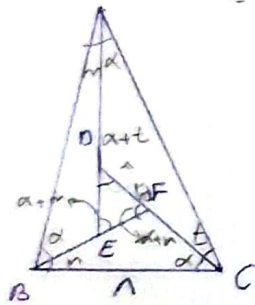
$$\hat{D}_1 = \hat{D}_2 \Rightarrow \triangle MDA \sim \triangle MDC \Rightarrow MF = BM = \frac{1}{2} BC$$

$$DF = a \quad FC = e$$

$$\frac{BM}{BF} = \frac{MO}{FC} = \frac{1}{2} = \frac{1}{2} \Rightarrow \boxed{MO = 1}$$

2

در مثلث ABC از نقطه D بر خط AB، DF = 1/2، EF = 1، ABF = CAE = BCD



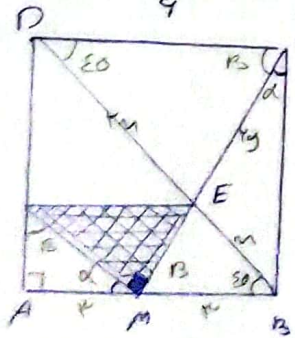
در مثلث ABC از نقطه D بر خط AB، DF = 1/2، EF = 1، ABF = CAE = BCD

$$F = \alpha + m \quad E = \alpha + m$$

$$\left. \begin{matrix} \hat{F} = \hat{B} \\ \hat{D} = \hat{C} \\ \hat{E} = \hat{A} \end{matrix} \right\} \rightarrow \frac{AB}{2} = \frac{1}{2} \Rightarrow \boxed{AB = 1, 1}$$

3

در مثلث ABC از نقطه D بر خط AB، BCE = AMF، AB موازی است BC



$$\tan B = \frac{AM}{AF} = \frac{BC}{MR} \Rightarrow \frac{1}{AF} = 2 \Rightarrow AF = \frac{1}{2}$$

$$MF = \sqrt{\left(\frac{1}{2}\right)^2 + 1^2} = \sqrt{\frac{5}{4}} = \frac{\sqrt{5}}{2}$$

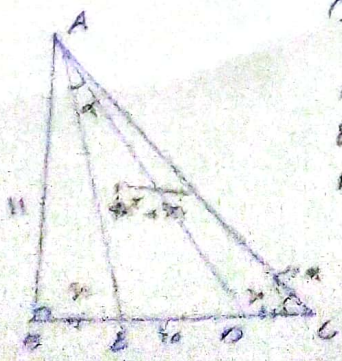
$$\left. \begin{matrix} \hat{E}_1 = \hat{E}_2 \\ \hat{DCE} = \hat{BME} \end{matrix} \right\} \rightarrow \triangle DCE \sim \triangle MEB \Rightarrow \frac{1}{2} = 2 \Rightarrow \sqrt{1^2 + 1^2} = \sqrt{2}$$

$$S_{FEM} = \frac{1}{2} \times MF \times EM = \frac{1}{2} \times \frac{\sqrt{5}}{2} \times \sqrt{2} = \frac{\sqrt{10}}{4}$$

$$\boxed{\sqrt{2} = \sqrt{2}} \quad \boxed{\sqrt{2} = \sqrt{2}}$$

4

در مثلث ABC از نقطه D بر خط AB، BE = DC، DAE = ACO



$$\left. \begin{matrix} \hat{A} = \hat{A} \\ \hat{E} = \hat{E} \\ \hat{D}_1 = \hat{D}_2 \end{matrix} \right\} \rightarrow \triangle CAE \sim \triangle AED \Rightarrow \frac{AE}{ED} = \frac{EC}{AE} \Rightarrow$$

$$\frac{\sqrt{1^2 + 1^2}}{1} = \frac{1+1}{\sqrt{1^2 + 1^2}} \Rightarrow 1+1 = 1+1 \Rightarrow \boxed{m = 1, n = 1}$$

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$$MP = CF \times AC \Rightarrow MP = 19 \times 1$$

$$m = F \times \sqrt{a} = \sqrt{\lambda \sqrt{a}}$$

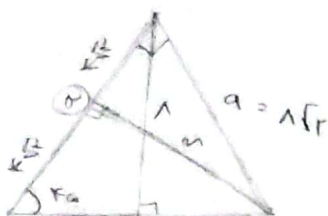
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$$P a^T = 14^T \rightarrow a^T = A \times 14 \rightarrow a = K \times P \sqrt{r} = 1\sqrt{r}$$

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$$R_T = \sqrt{(\Delta R_T)^2 + (R \sqrt{T})^2} = \sqrt{140} = 11.83 \text{ ft.}$$


$$BC = \sqrt{y^2 + e^2} = y\sqrt{a} \quad \text{---} \quad \frac{1}{\sin \theta} = \frac{1}{\cos \phi} \Rightarrow \sin \theta = \cos \phi \Rightarrow \theta = 90^\circ - \phi$$

$$(K-n)r = K + nr \Rightarrow nr - nr + 19 = nr + 8 \Rightarrow n = \frac{r}{r}$$

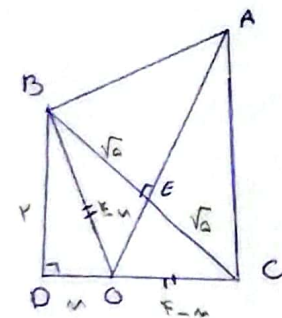
B0 $\rightarrow K_{-u} \Rightarrow K_{-1/r} = a/r$

$$\Delta OEC \Rightarrow OE^r = \left(\frac{a}{r}\right)^r - (r_0)^r = \frac{r_0}{\varepsilon} - \omega = \frac{a}{\varepsilon}$$

$$OE = \frac{\sqrt{a}}{r} \Rightarrow A_0 \times OE = \frac{A_0}{r} \times \sqrt{a} = \left(\frac{a}{r}\right)^{\frac{1}{2}} A_0$$

$$A_0 = \frac{r_0}{r \sqrt{a}} \Rightarrow \frac{a \sqrt{a}}{r} \leadsto S_{AEB} = \frac{1}{r} \times \sqrt{a} \left(\frac{a \sqrt{a}}{r} - \frac{\sqrt{a}}{r} \right) = \boxed{a}$$

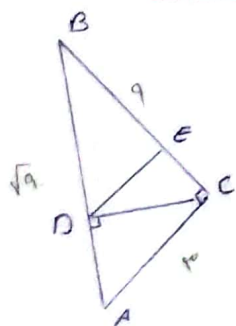
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$$BC^r = BD \times AB \rightarrow 9^r = BD \times \sqrt{9} = BD \times \frac{11}{\sqrt{9}} = \frac{91}{\sqrt{9}}$$

$$BD^r = BE \times BC \rightarrow \left(\frac{YV}{\sqrt{5}}\right)^r = BE \times 9$$

$$BE = \frac{K_V \times K_V}{1.0 \times A} = \sqrt{1,1}$$

9


$$AC = r$$

$$BH \times AC = AB \times BC \rightarrow BH \times 17 = 14 \times 11 \Rightarrow BH = \frac{154}{17} = 9,14$$

$$AH = \sqrt{19^2 - 9,9^2} = 17,1 \Rightarrow AE = 9,8$$

$$\left. \begin{array}{l} \hat{A} = \hat{A} \\ \hat{H} = \hat{B} \end{array} \right\} \rightarrow \triangle ADE \sim \triangle AHB \rightarrow \frac{DE}{BH} = \frac{AE}{AB} \rightarrow \frac{DE}{\frac{14}{2}} = \frac{11}{14} \rightarrow DE = \frac{11}{2}$$

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