

$$DE \parallel BC \Rightarrow \hat{B}_1 = \hat{E}_1 \Rightarrow \sin \hat{B}_1 = \hat{E}_1 \quad (1)$$

$$\frac{S_{\triangle BCE}}{S_{\triangle BDE}} = \frac{\frac{1}{2} \sin \hat{B}_1 \times BE \times BC}{\frac{1}{2} \sin \hat{E}_1 \times BE \times ED} = \frac{BC}{ED} = \frac{AB}{AD} = \frac{14}{9}$$

$$\left. \begin{array}{l} \triangle BDM \\ \triangle DME \end{array} \right\}$$

هر دو مثلث متشابه

G → نقطه برخورد
با خط BC

(2)

$$DM = 4, BM = 3 \rightarrow DB = 9 = DE \Rightarrow EC = 4$$

$$\frac{BM}{BE} = \frac{1}{2} = \frac{MG}{EC} \Rightarrow MG = 2$$

$$A_1 + \cancel{B_1} = E \Rightarrow A_1 + A_2 = E \Rightarrow \hat{A} = \hat{E} \quad (3)$$

$$D_1 = A_2 + C_1 \Rightarrow \hat{D}_1 = C_1 + C_2 = \hat{C}$$

به حالت «زاویه» EDF متشابه با مثلث بیرونی

$$\frac{3}{AB} = \frac{2 \times 9}{14} \Rightarrow AB = 9.9$$

$$\triangle AFM \sim \triangle MBC \quad AM = 3 = MB$$

$$AF = 10 \quad \frac{4}{3} = \frac{MB}{AF}$$

$$\triangle DEC \sim \triangle EMB$$

$$EM = \sqrt{9 + 34} = 2\sqrt{10} \quad \begin{array}{l} EM = \sqrt{10} \\ EC = 2\sqrt{10} \end{array}$$

$$\frac{EC}{EM} = 2$$

$$FM = \sqrt{(10)^2 + 9} = \frac{3\sqrt{10}}{2} \quad S = \frac{1}{2} \times \frac{3\sqrt{10}}{2} \times \sqrt{10} = \frac{15}{2}$$

Date

Subject

BE = m = DC

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

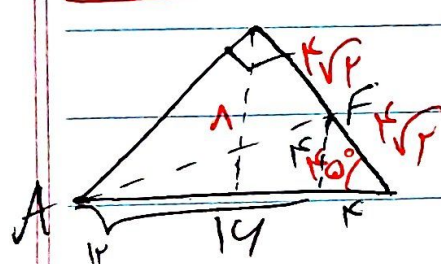
$$E_1 = E_2 \Rightarrow ADE \sim AEC \quad \frac{AE}{CE} = \frac{ED}{AE}$$

$$AE^2 = EC \times ED \Rightarrow AE^2 = 100 + 10m \quad m^2 - 10m + 11 = 0 \quad \left\{ \begin{array}{l} DC \leq \sqrt{10} \\ DC \leq \sqrt{10} \end{array} \right.$$

$$AE^2 = (11)^2 + m^2 \Rightarrow 121 + m^2 = 100 + 10m \quad \uparrow$$

$$EF^2 = DF \times FC \rightarrow 19 = 1 \times FC \Rightarrow FC = 19$$

$$BC^2 = FC \times AC = 19 \times 40 \Rightarrow BC = 1\sqrt{10}$$



$$AF = \sqrt{19 + 19^2} = 1\sqrt{10}$$

(V)

$$DO = m \quad m - m = \sqrt{m^2 - 19}$$

(A)

$$m^2 = 100 + 19, m^2 + 19 \quad m \leq 1, 0 \quad 0C \leq 0B \leq 1, 0$$

$$BC = \sqrt{14 + 19}, 1\sqrt{10} \Rightarrow BE = \sqrt{10} \quad OE = \sqrt{10}$$

$$O = \sqrt{10} \times AE \Rightarrow AE = \sqrt{10} \quad SAEB = \sqrt{10} \times \sqrt{10}, 0$$

$$AB = 1\sqrt{10}$$

$$AC \times BC = AB \times CD$$

$$AD = \frac{10}{\sqrt{10}}$$

$$BD = \frac{10}{\sqrt{10}}$$

$$CD = \frac{9}{\sqrt{10}}, AD = \frac{10}{\sqrt{10}} \quad (9)$$

$$12 = 12 \times 1\sqrt{10}$$

$$\frac{10}{\sqrt{10}} = \frac{10}{9} \Rightarrow m = 1, 1$$

PARDIS

Date _____

Subject _____

$$AC \leq 1. \quad AB \times BC \leq AC \times BH \quad BH \leq \frac{KA}{G} \quad (1.)$$

$$IKK \leq \left(\frac{KA}{G}\right)^2 + HC^2 \Rightarrow HC \leq \sqrt{IKK} \quad AE \leq EH \leq 4IKK$$

$$\frac{DE}{BC} \leq \frac{AE}{AC}$$

$$\frac{DE}{IKK} \leq \frac{4IKK}{G} \Rightarrow DE \leq 4IKK$$