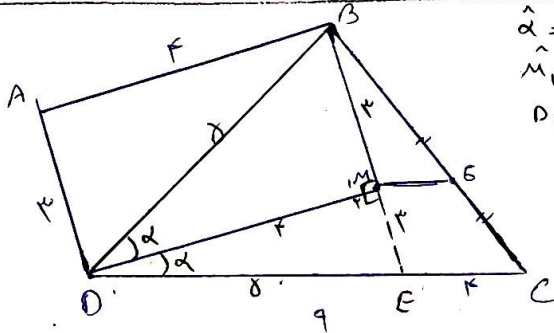


$$DE \parallel BC, BE \rightarrow E_1 = B_1, \frac{DE}{BC} = \frac{AD}{AB} = \frac{8}{17}$$

$$\rightarrow \frac{S_{BCE}}{S_{BDE}} = \frac{\frac{1}{2} \times BE \times BC \times \sin \alpha}{\frac{1}{2} \times BE \times DE \times \sin \alpha} = \frac{BC}{DE} = \frac{17}{8}$$

$$ADE \sim ABC \rightarrow S_{ADE} = 28 \rightarrow S_{ABC} = 145$$

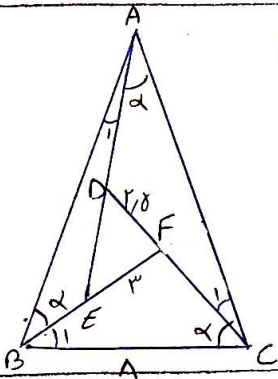
$$\rightarrow S_{DECB} = 119 \rightarrow S_{BCE} = 125, S_{BDE} = 28 \rightarrow \frac{125}{28} = \frac{17}{8}$$



$$\left. \begin{array}{l} \hat{\alpha} = \hat{\alpha} \\ \hat{m}_1 = \hat{m}_2 \\ DM = ME \end{array} \right\} \xrightarrow{100} \Delta DMB \cong \Delta DME \rightarrow DE = DB = 8$$

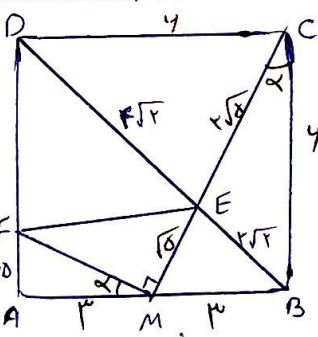
$$\rightarrow \frac{BM}{ME} = \frac{BG}{GC} = 1 \rightarrow MG \parallel EC$$

$$\rightarrow EC = 5 \rightarrow \frac{MG}{EC} = \frac{1}{2} \rightarrow MG = 2.5$$



$$\left. \begin{array}{l} A_1 + \alpha = \hat{E} = \hat{A} \\ C_1 + \alpha = \hat{D} = \hat{C} \\ B_1 + \alpha = \hat{F} = \hat{B} \end{array} \right\} \rightarrow \Delta DEF \sim \Delta ABC \rightarrow \frac{DF}{BC} = \frac{FE}{AB}$$

$$\rightarrow \frac{11}{17} = \frac{5}{AB} \rightarrow AB = 9.1$$

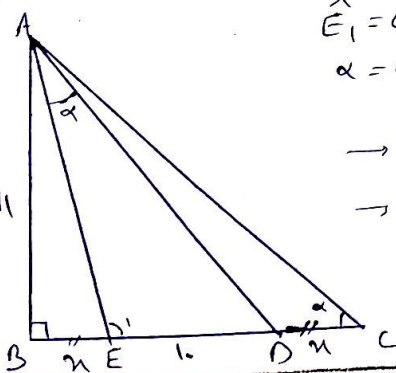


$$\left. \begin{array}{l} \alpha = \alpha \\ \hat{B} = \hat{A} \end{array} \right\} \rightarrow \Delta FAM \sim \Delta MBC \rightarrow \frac{FA}{MB} = \frac{AM}{AB} \rightarrow \frac{FA}{4} = \frac{4}{4} \rightarrow FA = 4$$

$$DCE \sim EMB \rightarrow \frac{CE}{EM} = \frac{4}{4} \rightarrow CE = EM, CE + EM = 4\sqrt{2}$$

$$\rightarrow CE = 2\sqrt{2}, EM = \sqrt{2} \quad \left\{ \begin{array}{l} FM = \sqrt{4^2 + 9} = \sqrt{25} = 5 \\ \end{array} \right.$$

$$\rightarrow S_{AFM} = \frac{\sqrt{25} \times \sqrt{2}}{2} = \frac{5\sqrt{2}}{2} = 2.5\sqrt{2}$$



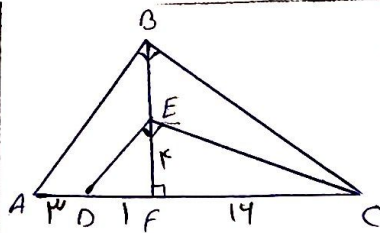
$$\left. \begin{array}{l} \hat{E}_1 = \hat{E}_2 \\ \alpha = \alpha \end{array} \right\} \Delta AED \sim \Delta AEC \rightarrow \frac{AE}{CE} = \frac{ED}{AE} \rightarrow AE^2 = (1+1) \times 1$$

$$\rightarrow AE^2 = 1 + 1 = 2$$

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

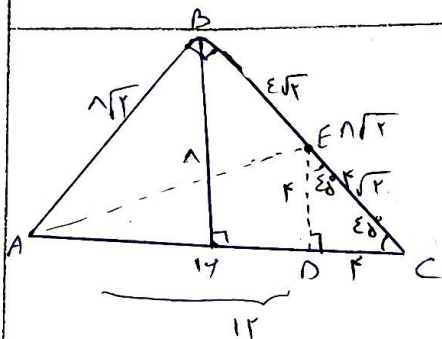
$$n^2 - 1 \cdot n + 1 = 0 \rightarrow (n-1)(n-1) = 0$$

$$\rightarrow \left\{ \begin{array}{l} n = 1 \\ n = 1 \end{array} \right.$$



$$EF^2 = DF \times FC \rightarrow FC = 14$$

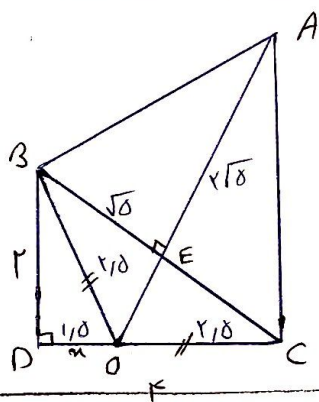
$$\rightarrow BC^2 = 14 \times (14 + 2) = 14 \times 16 \rightarrow BC = 4\sqrt{14}$$



میان نصف و تر است ← مثلث قائم الزاویه است

$$\left. \begin{array}{l} C = E = 45^\circ \\ D = 90^\circ \end{array} \right\} \rightarrow ED = DC = 2$$

$$\rightarrow AE^2 = 14^2 + 2^2 \rightarrow AE = \sqrt{14^2 + 2^2} = 2\sqrt{10}$$



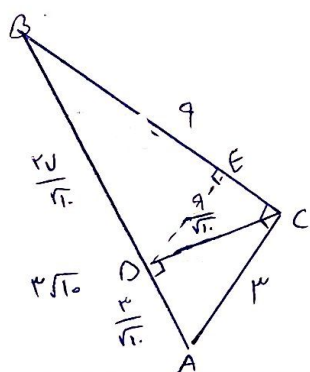
$$r - m = \sqrt{m^2 + 2} \rightarrow 14 + m^2 - 14m = m^2 + 2 \rightarrow 14m = 12 \rightarrow m = 1.8 \rightarrow OC = OB = 2.8$$

* عرض نصف مساوی الساقین ← میانه

$$BC = \sqrt{14^2 + 2^2} = 2\sqrt{10} \rightarrow BE = \sqrt{8} \rightarrow 2.8^2 = 8 + OE^2$$

$$\rightarrow OE = \sqrt{11.2} \rightarrow BE^2 = AE \times OE \rightarrow 8 = \sqrt{11.2} \times AE \rightarrow AE = 2\sqrt{8}$$

$$\rightarrow S_{AEB} = 2\sqrt{8} \times \sqrt{8} \div 2 = 8$$

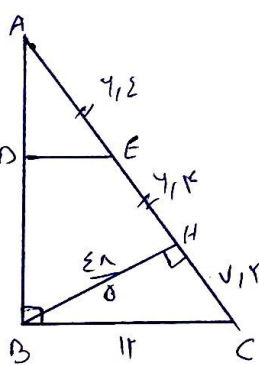


$$AB = \sqrt{14^2 + 9^2} = 3\sqrt{10} \rightarrow AC \times BC = AB \times CD$$

$$\rightarrow CD = \frac{9}{11} \rightarrow AD^2 + \frac{11}{1} = 9 \rightarrow AD = \frac{4}{11}$$

$$BD^2 + \frac{11}{1} = 11 \rightarrow BD = \frac{2\sqrt{11}}{11}$$

$$\rightarrow \frac{BD}{BA} = \frac{BE}{BC} \rightarrow \frac{9}{10} = \frac{BE}{9} \rightarrow BE = 1.1$$



$$AC = 20 \rightarrow AB \times BC = AC \times BH \rightarrow BH = \frac{80}{8}$$

$$\rightarrow 14^2 = \left(\frac{80}{8}\right)^2 + HC^2 \rightarrow HC = 11.2$$

$$AE = EH = \frac{20 - 11.2}{2} = 4.4 \rightarrow \frac{DE}{BC} = \frac{AE}{AC}$$

$$\frac{DE}{14} = \frac{4.4}{20} \rightarrow DE = 3.12$$