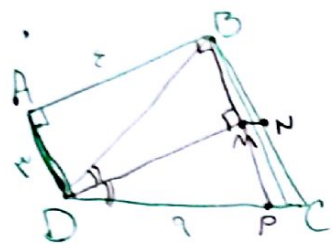


$$\frac{AD}{AB} = \frac{DE}{BC} \rightarrow \frac{\omega}{\omega + v} = \frac{DE}{BC} \rightarrow \frac{DE}{BC} = \frac{\omega}{12}$$

$$\frac{S_{\triangle BCE}}{S_{\triangle BDE}} = \frac{\frac{1}{2} \times h \times BC}{\frac{1}{2} \times h \times DE} = \frac{BC}{DE} = \frac{12}{\omega} = 1, \epsilon$$



$$BD = \sqrt{\epsilon^2 + \epsilon^2} = \omega$$

$$BD = DP \rightarrow DP = \omega$$

$$CP = DC - DP = 9 - \omega = \epsilon$$

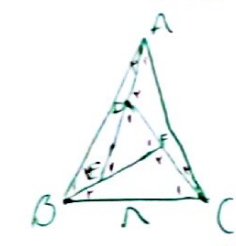
$$\frac{BM}{BP} = \frac{MN}{PC} \rightarrow \frac{MN}{PC} = \frac{1}{2}$$

$$\hat{BDC} = \hat{BOM}$$

$$MN = \frac{1}{2} PC = \frac{\epsilon}{2} = 2$$

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

$$\epsilon = 2, \omega = 2$$

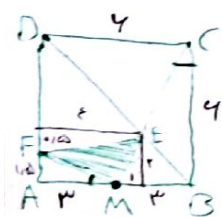


$$\left. \begin{array}{l} D_1 = A_1 + C_1 \\ A_1 = C_1 \end{array} \right\} \left. \begin{array}{l} D_1 = C_1 + C_1 \\ F_1 = B_1 + B_1 \\ E_1 = A_1 + B_1 \end{array} \right\}$$

$$\left. \begin{array}{l} D_1 = C_1 + C_1 \\ F_1 = B_1 + B_1 \\ E_1 = A_1 + B_1 \end{array} \right\} \Delta DFE \sim \Delta CBA$$

$$\rightarrow \frac{EF}{DF} = \frac{AB}{BC} \rightarrow \frac{v}{\omega} = \frac{AB}{12}$$

$$AB = ? \quad \frac{v \times 12}{\omega} = 9, 4$$

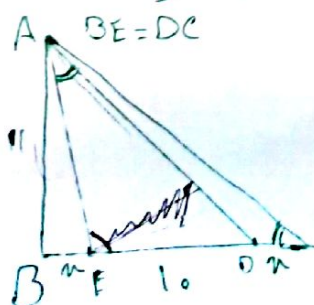


$$\frac{v - u}{u} = \frac{u}{4 - u} = \frac{1}{2} \Rightarrow u = 2$$

$$\hat{C} = \hat{M} / \hat{M} / \hat{M}$$

$$u \times v = \epsilon \times r - \frac{1 \times r}{v} - \frac{1 \times \omega \times r}{v} - \frac{\epsilon \times \omega}{v} = 1, 1, 1$$

$$DC = ? \quad 1, 1, 1$$



$$\left. \begin{array}{l} \hat{A} = \hat{C} \\ \hat{E} = \hat{E} \end{array} \right\} \rightarrow \Delta AED \sim \Delta CEA$$

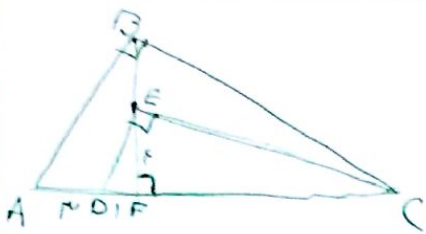
$$\rightarrow \frac{ED}{EA} = \frac{AE}{CE} \rightarrow \frac{1 \times AE}{AE} = \frac{1 \times AE}{1 + u}$$

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

$$\left. \begin{array}{l} 1 + u = AE \\ 1 + 1 = AE \end{array} \right\} \rightarrow u = 1$$

$$u - 1 = 0 \Rightarrow u = 1$$

$$u = 1$$



$$EF^2 = DF \times CF$$

$$1^2 = DF \times 14 \quad CF = 14$$

$$BF^2 = AF \times CF$$

$$BF^2 = 1 \times 14 \rightarrow BF = \sqrt{14}$$

$$BC = ? \quad \sqrt{BF^2 + CF^2} = \sqrt{14 + 14^2} = 14\sqrt{5}$$



مساحت مثلث = ? $\frac{1}{2} \times \text{طول وتر} \times \text{ارتفاع}$ $\frac{1}{2} \times 14\sqrt{5} \times 1 = 7\sqrt{5}$

$$\begin{cases} DM + MC = 14 \\ MC = MB \end{cases} \rightarrow DM + MB = 14$$

$$DM + DM = (14 - DM) \rightarrow 2DM = 14 - DM \rightarrow 3DM = 14 \rightarrow DM = \frac{14}{3}$$

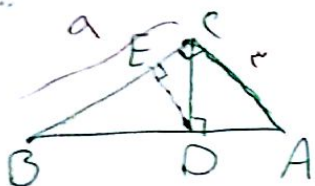
$$AD = 14 \rightarrow DM = \frac{14}{3} \rightarrow BM = \frac{14}{3}$$

$$BE = \frac{1}{2} BC = 7\sqrt{5}$$

$$BM^2 = BE^2 + ME^2 \rightarrow \left(\frac{14}{3}\right)^2 = (7\sqrt{5})^2 + ME^2 \rightarrow ME = \frac{14\sqrt{5}}{3}$$

$$BE^2 = ME \times AE \rightarrow 49 \times 5 = \frac{14\sqrt{5}}{3} \times AE \rightarrow AE = \frac{105\sqrt{5}}{14\sqrt{5}} = \frac{15\sqrt{5}}{2}$$

$$S_{ABE} = \frac{1}{2} (AE + EM) BE = \frac{1}{2} \left(\frac{15\sqrt{5}}{2} + \frac{14\sqrt{5}}{3} \right) \times 7\sqrt{5} = 41 \times 5$$

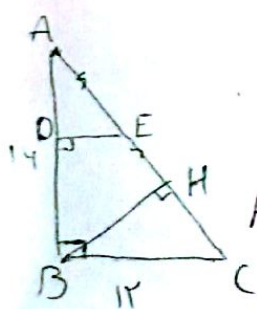


$$BA = \sqrt{14^2 + 1^2} = 14\sqrt{5}$$

$$\frac{AD}{DC} = \frac{DB}{CB} = \frac{1}{14} \rightarrow \frac{AD}{DB} = \frac{1}{14} \rightarrow \begin{cases} AD = \frac{14\sqrt{5}}{15} \\ DB = \frac{14\sqrt{5}}{15} \end{cases}$$

$$AC = 1$$

$$BC = 14\sqrt{5} \quad BE = ? \quad \frac{BE}{BC} = \frac{BD}{BA} \rightarrow \frac{BE}{14\sqrt{5}} = \frac{\frac{14\sqrt{5}}{15}}{14\sqrt{5}} \rightarrow BE = \frac{14\sqrt{5}}{15}$$



$$AC = \sqrt{14^2 + 1^2} = 14\sqrt{5}$$

$$\frac{CH}{BH} = \frac{AH}{CH} = \frac{1}{14} \rightarrow \begin{cases} CH = \frac{14\sqrt{5}}{15} \\ AH = \frac{14\sqrt{5}}{15} \end{cases} \rightarrow CH + AH = \frac{28\sqrt{5}}{15}$$

$$DE = ? \quad \frac{DE}{BC} = \frac{AE}{AC} \rightarrow \frac{DE}{14\sqrt{5}} = \frac{\frac{14\sqrt{5}}{15}}{14\sqrt{5}} \rightarrow DE = \frac{14\sqrt{5}}{15}$$