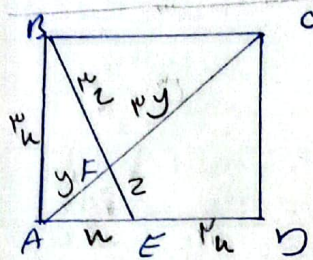


نسارک صغی 3



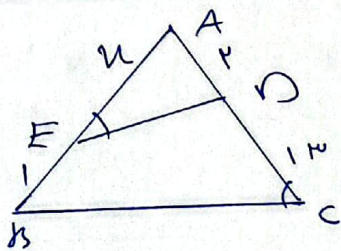
$$ED = PAE$$

$$\frac{EF}{AF} = ?$$

$$\frac{FE}{AF} = \frac{\frac{V_1}{x}}{\frac{w}{y}} \rightarrow \frac{V_1}{wy} \rightarrow \left(\frac{V_1}{w}\right)$$

$$AC \rightarrow w\sqrt{x}u = y \rightarrow y = \frac{w\sqrt{x}}{x}u \quad (AF)$$

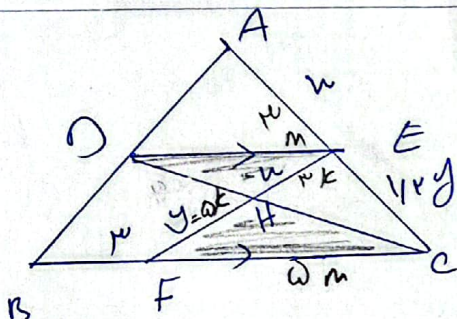
$$BE \rightarrow \sqrt{1-x}u = z \rightarrow \frac{\sqrt{1-x}u}{x} = z \quad (FE)$$



$$ABC \sim AED$$

$$\rightarrow \frac{AB}{AD} = \frac{BC}{ED} = \frac{AC}{AE}$$

$$\frac{x+1}{x} = \frac{10}{u} \rightarrow 10 = u(x+1) \rightarrow u = 10$$

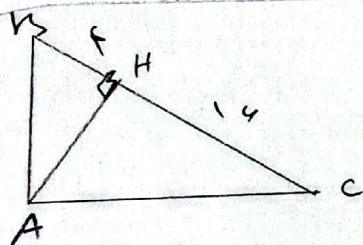


$$wy = 2u \rightarrow u = wk / y = wk$$

$$CHF \sim DHE \rightarrow \frac{HE}{HF} = \frac{DE}{DF} \rightarrow DE = km$$

$$DE \parallel BC \rightarrow \frac{DE}{BC} = \frac{AE}{AC} = \frac{m}{n+m} = \frac{1}{2} \rightarrow m = n$$

$$BC = m + n = 2m$$

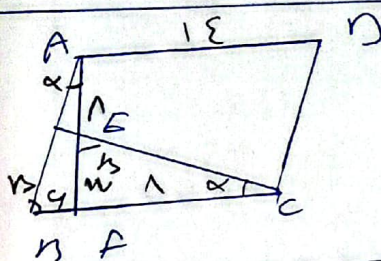


$$AH^2 = BH \cdot HC = 10$$

$$AC^2 = CH \cdot BC = 14$$

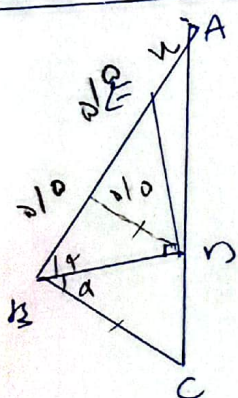
$$\frac{AC^2}{AH^2} = 2$$

$$\rightarrow \frac{AC}{AH} = \sqrt{2}$$

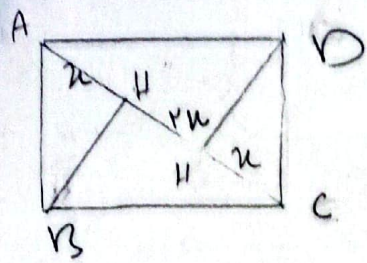


$$CEF \sim AEF \rightarrow \frac{u}{y} = \frac{1}{u+y} \rightarrow u = 1$$

$$AF = 12$$

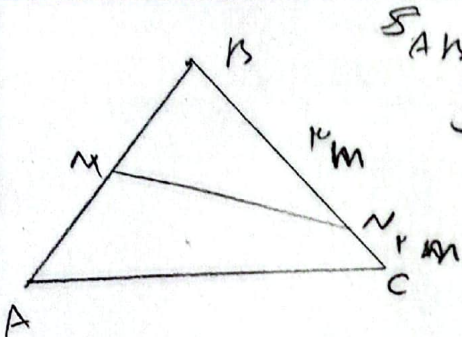


$$\frac{n + 0/10}{n+11} = \frac{2/10}{1} \rightarrow n = 7/4$$

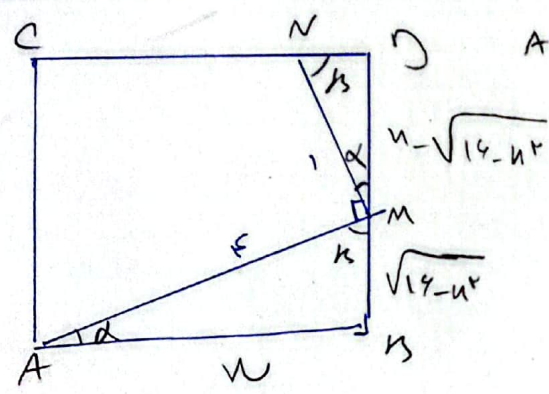


$AB^2 = u \cdot 2u$
 $BC^2 = v \cdot 2v$
 $AC^2 = u \cdot 2v$

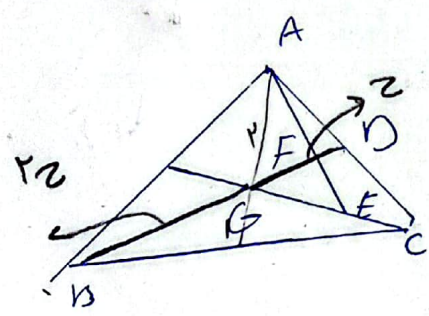
$$\frac{S_{ABCD}}{S_{AHD}} = \frac{BC \times AB}{BH \times \frac{1}{2} AC} \rightsquigarrow \frac{\sqrt{2} u \times \sqrt{2} v}{\sqrt{2} u \cdot \frac{1}{2} \sqrt{2} \sqrt{u \cdot 2v}} = \frac{r_H}{\frac{r_H}{2}} = 2$$



$S_{ABC} = \frac{1}{2} BC \cdot AB \sin B$ $S_{MNC} = \frac{1}{2} CN \cdot CM \sin C$
 $\rightarrow \frac{1}{2} BC \cdot AB \sin B = \frac{1}{2} CN \cdot CM \sin C$
 $\omega \cdot AB \cdot \sin B = \omega \cdot CN \cdot \sin C \rightarrow \frac{CN}{AB} = \frac{\omega}{\omega}$
 $\frac{CN}{AB - CN} = \frac{1}{1}$



$AM \sim MD \rightarrow \frac{AM}{AB} = \frac{MD}{BC} = \frac{AM}{MN}$
 $\frac{u - \sqrt{14 - u^2}}{\sqrt{14 - u^2}} = \frac{1}{2}$
 $\frac{u}{\sqrt{14 - u^2}} = \frac{\omega}{2} \rightarrow r_H = \omega \sqrt{14 - u^2}$
 $14u^2 = r_H^2 (14 - u^2)$
 $14u^2 = r_H^2 \times 14 \rightarrow u^2 = \frac{r_H^2 \times 14}{14}$



$\frac{BD}{FD} = \frac{r_D}{\frac{1}{2} r_B} = 2$