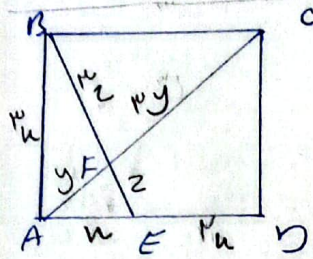


(۱۷)

تئاری حقیقی ۳

به دلیل نایب کردن اسم نمره شما (۱۷) می باشد

①



$$ED = \sqrt{AE}$$

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

$$\frac{FE}{AE} = \frac{\sqrt{1-u}}{\sqrt{1-v}} \rightarrow \frac{\sqrt{1-u}}{\sqrt{1-v}} \rightarrow \left(\frac{\sqrt{1-u}}{\sqrt{1-v}}\right)$$

$$AC \rightarrow \sqrt{1-u} = \sqrt{1-v} \rightarrow y = \sqrt{1-u} \sqrt{1-v} (AF)$$

$$BE \rightarrow \sqrt{1-u} = \sqrt{1-v} \rightarrow \sqrt{1-u} \sqrt{1-v} = z (FE)$$

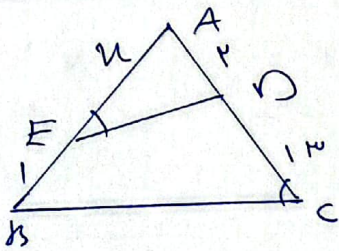
۵

$$ABC \sim AED$$

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

$$\frac{u+1}{v} = \frac{1-u}{u} \rightarrow u(u+1) = 1-u \rightarrow u = \omega$$

۶



$$uy = \omega u \rightarrow u = \omega k / y = \omega k$$

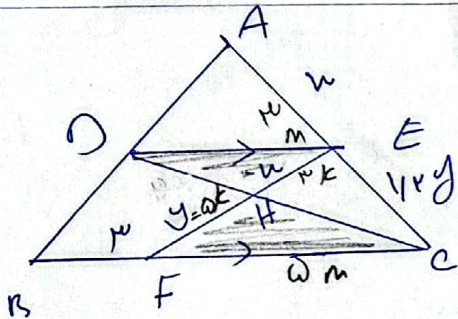
$$CHF \sim DHE \rightarrow \frac{HE}{HF} = \frac{DE}{DF} \rightarrow DE = \omega m$$

$$FC = \omega m$$

$$DE \parallel BC \rightarrow \frac{DE}{BC} = \frac{AE}{AC} = \frac{u}{u+m} = \frac{1}{u} \rightarrow m = \sqrt{1-u}$$

۷

$$BC = \omega m + u = \left(\frac{1}{\sqrt{1-u}}\right)$$



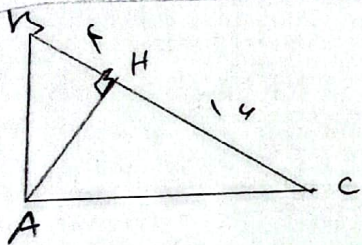
$$AH^2 = BH \cdot HC = 10$$

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

$$\frac{AC^2}{AH^2} = \frac{14}{10} = \frac{7}{5}$$

$$\rightarrow \frac{AC}{AH} = \frac{\sqrt{7}}{\sqrt{5}}$$

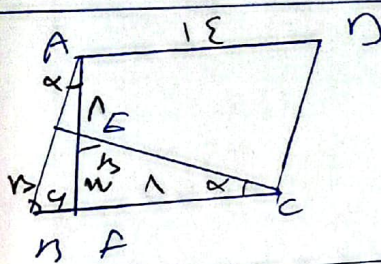
۸



$$CEF \sim AHF \rightarrow \frac{u}{4} = \frac{1}{u+4} \rightarrow u = 2$$

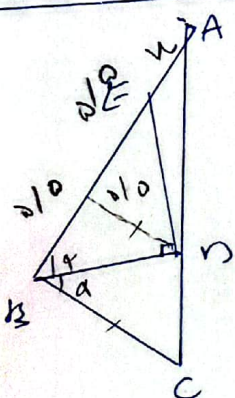
$$AF = 12$$

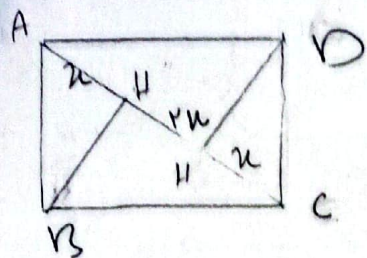
۹



$$\frac{u + \omega/\omega}{u+11} = \frac{2/0}{1} \rightarrow u = 7/4$$

۱۰





$$AB^2 = u^2 + v^2$$

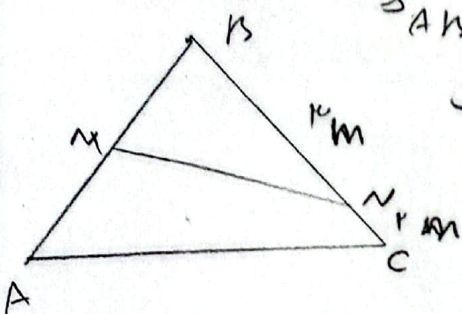
$$BC^2 = v^2 + u^2$$

$$AC^2 = u^2 + v^2$$

$$\frac{S_{ABCD}}{S_{AHD}} = \frac{1/2 \cdot AC \cdot AH}{1/2 \cdot BH \cdot AH} \rightarrow \frac{AC \cdot u}{BH \cdot u} = \frac{2u}{v}$$

$$\frac{r_{AB}}{r_{BC}} = \frac{r_{AC}}{r_{BD}} \quad (5)$$

(1)



$$S_{ABC} = \frac{1}{2} BC \cdot AB \sin B$$

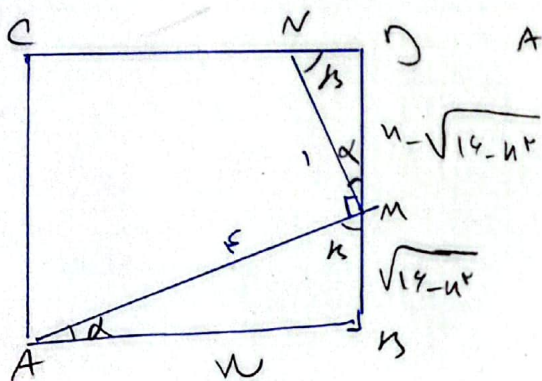
$$S_{MNC} = \frac{1}{2} CN \cdot CM \sin C$$

$$\frac{1}{2} BC \cdot AB \sin B = \frac{1}{2} CN \cdot CM \sin C$$

$$\frac{BC}{CM} = \frac{CN}{AB} \rightarrow \frac{BC}{AB} = \frac{CN}{AB}$$

$$\frac{BC}{AB} = \frac{1}{2} \quad (5)$$

(1)



$$AM \parallel BN \rightarrow \frac{AM}{AB} = \frac{BN}{AB} = \frac{AM}{BN}$$

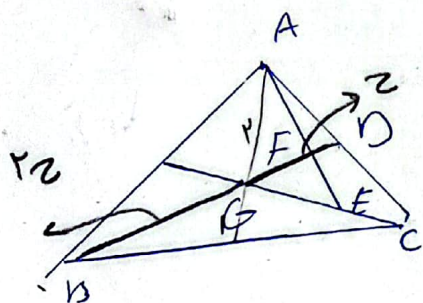
$$\frac{u}{\sqrt{14-u^2}} = \frac{1}{2}$$

(4)

$$\frac{u}{\sqrt{14-u^2}} = \frac{1}{2} \rightarrow u = \frac{1}{2} \sqrt{14-u^2}$$

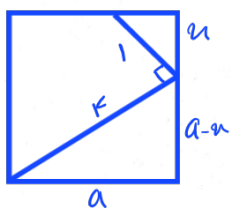
$$4u^2 = \frac{1}{4} (14-u^2)$$

$$16u^2 = 14 - u^2 \rightarrow 17u^2 = 14 \rightarrow u = \frac{\sqrt{14}}{\sqrt{17}}$$



$$\frac{BD}{ED} = \frac{v}{u} = \frac{1}{2} \quad (5)$$

(1)



$$\frac{y}{a-x} = \frac{x}{a} = \frac{1}{2} \rightarrow \begin{cases} a-x = 2y \\ a-x = 2y \end{cases}$$

$$x-a = 2y \rightarrow x = \frac{2y}{2}$$

$$S_{\square} = a^2 = \frac{2y^2}{2}$$

(9)

$$F = (a-x) + a \rightarrow x = \frac{F}{2}, a = \frac{14}{2}$$