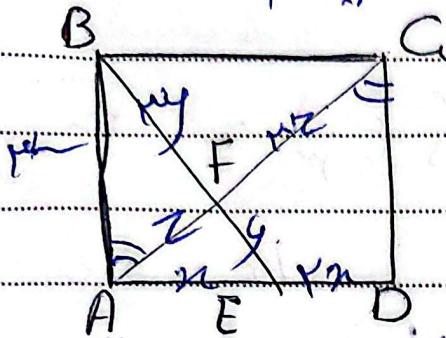


بنام خدا

با یزدان اختر A

مستطیل ذایار



$$ED = 2AE$$

①

$$AC = 3\sqrt{2}x$$

$$BE = \sqrt{10}x$$

$$\sqrt{10}x = \epsilon\gamma$$

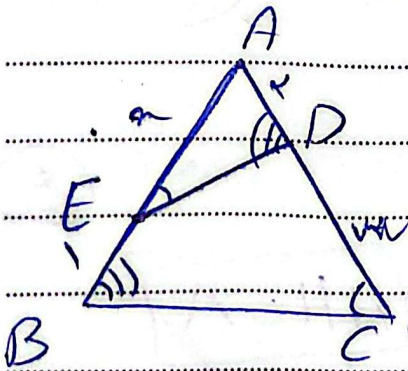
$$\triangle BCF \sim \triangle AEF$$

$$3\sqrt{2}x = \epsilon\alpha$$

$$\frac{\gamma}{\alpha} = \frac{\sqrt{10}}{3\sqrt{2}} = \frac{\sqrt{5}}{3}$$

②

در مثل بنا بر حالت از یزدان مستطیل



$$\hat{B} = \hat{D} \sim \frac{x}{x+3} = \frac{2}{x+1} = \frac{ED}{BC}$$

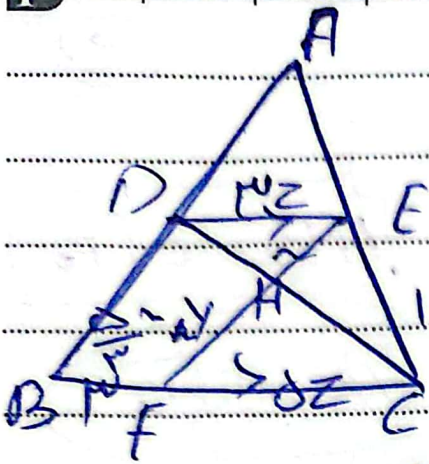
$$\hat{E} = \hat{C} \quad \hat{A} = \hat{A}$$

$$x(x+1) = 3$$

$$x = 5$$

$$x = -4$$

$$x = 5$$



$$wy = \Delta z \Rightarrow y = \frac{\Delta z}{w}$$

(5)

$$\frac{y}{w} = \frac{y}{w} \times \frac{\Delta z}{r} = \frac{\Delta z}{r}$$

$$\triangle FHC \sim \triangle DHC \quad \frac{FC}{DE} = \frac{\Delta z}{w} \quad \begin{cases} FC = \Delta z \\ DE = wz \end{cases}$$

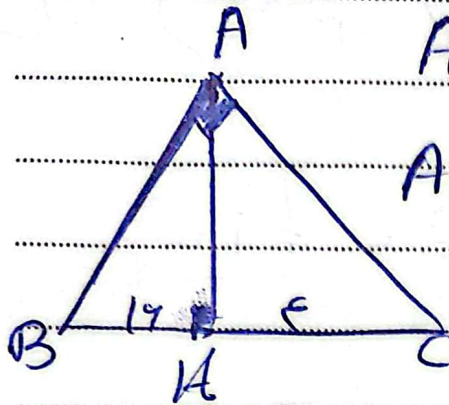
$$\triangle ADE \sim \triangle ABC \quad \frac{DE}{BC} = \frac{AE}{AC} = \frac{z}{r} = \frac{1}{r}$$

$$\frac{wz}{w + \Delta z} = \frac{1}{r} \rightarrow wz = r \rightarrow \boxed{z = \frac{r}{\epsilon}}$$

$$BC = r + \Delta z = r \rightarrow \Delta \times \frac{r}{\epsilon} = r + \frac{r}{\epsilon}$$

$$BC = \frac{rV}{\epsilon}$$

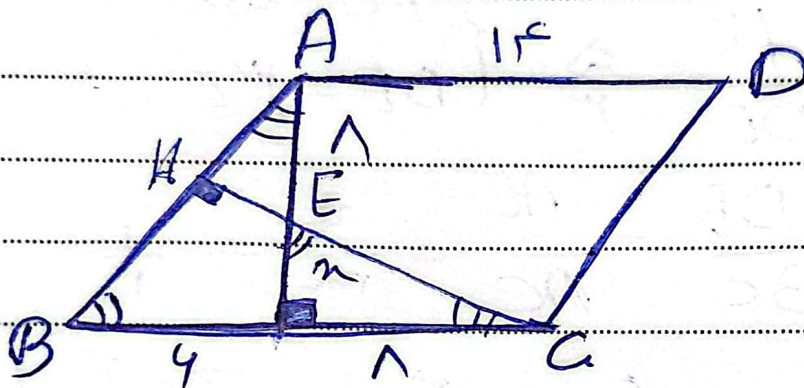
②



$$AH^2 = BH \times HC \Rightarrow AH = 1$$

$$AB^2 = BH \times BC \Rightarrow AB = 5\sqrt{2}$$

$$AC^2 = CH \times BC \Rightarrow AC = 5\sqrt{2}$$



!... $\triangle BCF \sim \triangle ABE$...

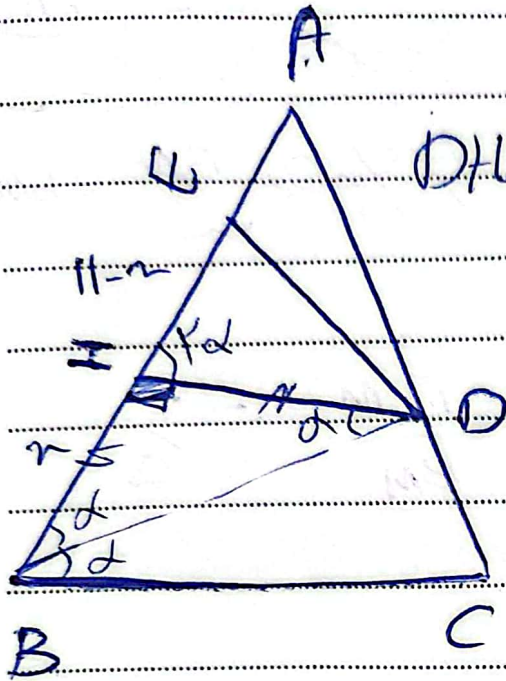
$$\frac{AF}{CH} = \frac{AB}{BC} = \frac{BF}{BH} \Rightarrow \frac{12}{CH} = \frac{AB}{14} = \frac{9}{BH}$$

$$\triangle FEC \sim \triangle BEA \quad \frac{1}{HE} = \frac{2}{BH}$$

$$\frac{1}{BH} = \frac{(2+1)2}{9 \times CH} \Rightarrow \frac{2}{BH} = \frac{2+1 \cdot 2}{9CH}$$

$$\frac{1}{HC} = \frac{2+1 \cdot 2}{9CH} \Rightarrow 2+1 \cdot 2 = 9 \quad \left\{ \begin{array}{l} 2 = 9 \\ 2 = -12 \end{array} \right.$$

$$AF = 12 = 12 = 12 = 12$$



$$DH^2 = BH \times HE = 4, n^2 = n(11-n)$$

$$n = \frac{11}{2} = 5,5$$

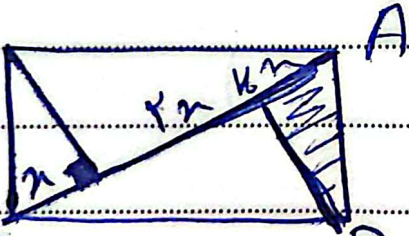
$$\frac{DH}{BC} = \frac{AE + HE}{AB}$$

$$\frac{5,5}{11} = \frac{y + 5,5}{11 + y}$$

$$11y + 55 = 11y + 60,5$$

$$5,5y = 5,5$$

$$y = 1$$



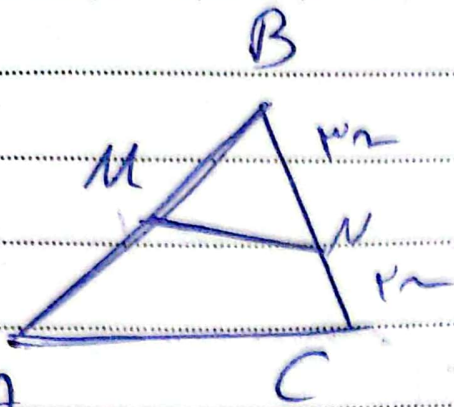
۲ مثلث ABC و ABH با هم متشابه هستند

نسبت متشابه آن ها $\frac{4}{2}$ است پس نسبت

مستطیل برابر ۱۶ می باشد یعنی اگر مساحت ABH برابر ۴ باشد

مساحت مثلث ABC برابر ۱۶ می باشد پس مساحت

مستطیل ۳۲ برابر مساحت مثلث یکم است

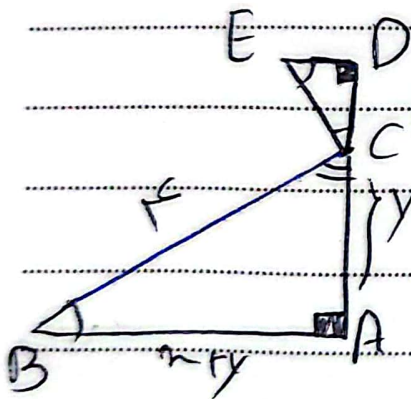


$$\frac{S_{ABC}}{S_{MBN}} = \frac{\frac{1}{2} \sin B \cdot BC \cdot AB}{\frac{1}{2} \sin B \cdot BN \cdot BM} = \frac{r^2}{1}$$

$$\frac{BM + AM}{BM} = \frac{1}{\epsilon} \Rightarrow 1 + \frac{AM}{BM} = \frac{1}{\epsilon}$$

$$\boxed{\frac{BM}{AM} = \frac{1}{\epsilon}}$$

$$\frac{BM}{AB}$$



$$E + C = 90^\circ \Rightarrow C = E$$

$$C + C = 90^\circ \Rightarrow A = D = 90^\circ$$

$$\triangle EDC \sim \triangle ABC \quad (ij)$$

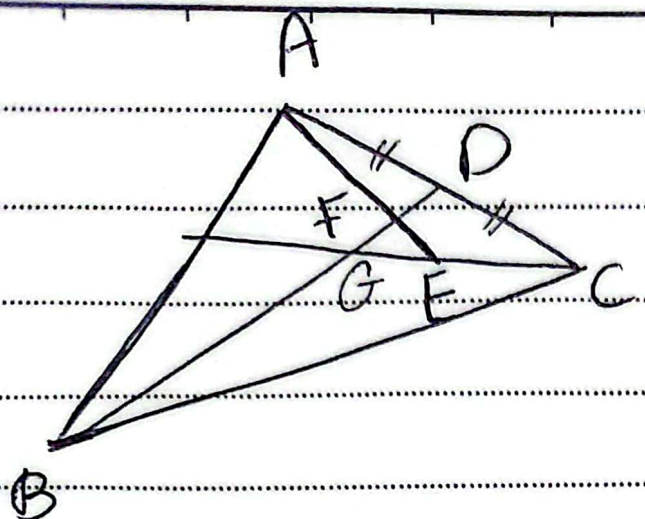
$$\Rightarrow \frac{x+y}{x} = \epsilon \Rightarrow 1 + \frac{y}{x} = \epsilon \Rightarrow y = rx$$

$$AB^2 + AC^2 = BC^2 \rightarrow 19x^2 + 9x^2 = 19 \rightarrow x = \epsilon$$

$$x = 1/\epsilon$$

$$y = r/\epsilon \rightarrow AB = \sqrt{19} \sim AB^2 = (19/\epsilon)^2$$

$$10, 1/\epsilon$$



$$GE = EC$$

10

$$\frac{BD}{FD} =$$

G - كل لربوذا مينا

$$\left. \begin{array}{l} GE = EC \\ AGC \end{array} \right\} \begin{array}{l} GD, AE \rightarrow \text{مقاطع } F \\ \text{مينا } G \end{array}$$

AGC مركزا F

$$FD = x \rightarrow GF = 2x \rightarrow GD = 3x$$

$$ABC \rightarrow G$$

مركزا

$$BG = 4x$$

$$BD = 9x$$

$$\frac{BD}{FD} = \frac{9x}{x} = 9$$