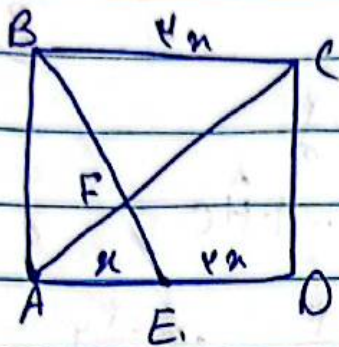


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$$\triangle AFE \sim \triangle BFC$$

$$\frac{AE}{BC} = \frac{FE}{BF} = \frac{AF}{FC} = \frac{1}{\sqrt{5}}$$

$$\frac{FE}{BF} = \frac{1}{\sqrt{5}} \rightarrow \frac{FE}{BE} = \frac{1}{\sqrt{5}}$$

$$BE = \sqrt{(2x)^2 + n^2} = \sqrt{5} \cdot n \quad \text{and} \quad FE = \frac{\sqrt{5} \cdot n}{\sqrt{5}}$$

$$\frac{AF}{FC} = \frac{1}{\sqrt{5}} \xrightarrow{\text{AC is } 2\sqrt{5}x} \frac{AF}{AC} = \frac{1}{\sqrt{5}} \Rightarrow AF = \frac{2\sqrt{5}x}{\sqrt{5}}$$

$$\frac{EF}{AF} = \frac{\frac{\sqrt{5} \cdot n}{\sqrt{5}}}{\frac{2\sqrt{5}x}{\sqrt{5}}} = \sqrt{\frac{1}{10}}$$

$$\triangle AEO \sim \triangle ABC$$

$$\frac{EO}{BC} = \frac{AO}{AB} = \frac{AE}{AC}$$

$$\frac{y}{2n+1} = \frac{n}{10}$$

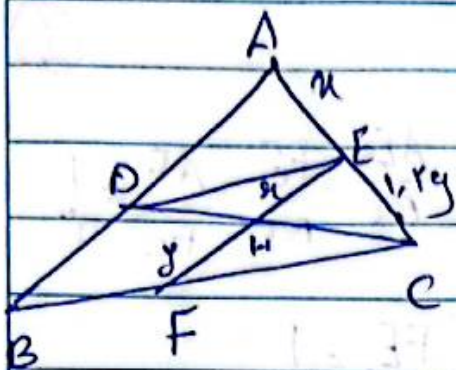
$$n^2 + n = 20 \rightarrow n^2 + n - 20 = 0 \rightarrow (n+5)(n-4) = 0$$

$$\begin{matrix} -5 & 4 \\ \text{---} & \text{---} \end{matrix}$$

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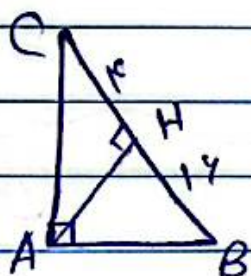
युग सम $\frac{x}{y} = \frac{r}{\omega}$

$$\triangle DHE \sim \triangle FHC$$

$$\frac{DE}{FC} = \frac{r}{\omega}, \quad x = \frac{r}{\omega} y$$

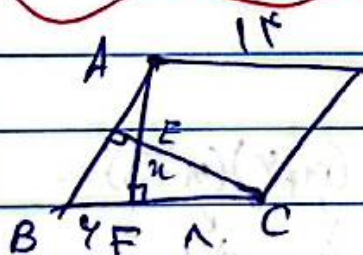
$$DE \parallel BC \rightarrow \frac{AE}{AC} = \frac{DE}{BC} = \frac{\frac{r}{\omega} y}{\frac{r}{\omega} y} = \frac{1}{r} = \frac{DE}{r + FC} = \frac{r}{\omega + r}$$

$$r x = \omega x + r \rightarrow x = \frac{r}{r} \rightarrow BC = \omega x + r = \frac{\omega}{r} + r = \frac{\omega + r^2}{r}$$



$BC = r$
 $AC^2 = r \times r$
 $AC = r\sqrt{2}$
 $AB^2 = r \times r$
 $AB = r\sqrt{2}$

$$\frac{AB}{AC} = \frac{r\sqrt{2}}{r\sqrt{2}} = 1$$



$ABF \sim EFC$

$$\frac{1}{1+x} = \frac{EC}{AF} = \frac{x}{y}$$

$$rA = x^2 + 1x$$

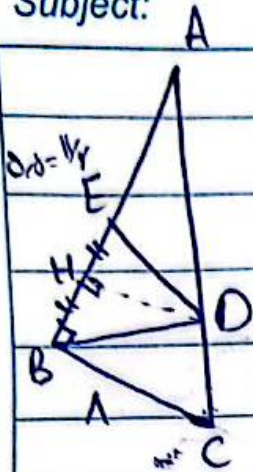
$$x^2 + 1x - rAs = 0$$

$$(x+1)(x-r) = 0$$

गुं - 1x $\rightarrow$ YASHA $\rightarrow AF = 1 + r = 1x$

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$$DH \parallel BC \Rightarrow \frac{d, d+n}{1+n} = \frac{d, d}{1}$$

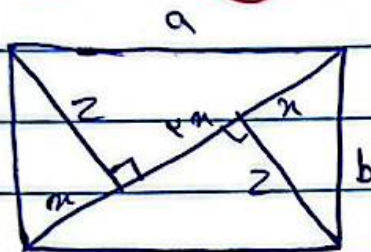
(4)

$$k + 1n = y, d + d, d$$

(5)

$$y, d = 1, d$$

$$n = 1, 1$$



$$a^2 + 4n^2 + 2^2 \rightarrow a^2 = 11n^2$$

$$a = \sqrt{11}n$$

$$b^2 = n^2 + 2^2 \rightarrow b^2 = 5n^2 \rightarrow b = \sqrt{5}n$$

(7)

(5)

$$2 = \sqrt{11}n$$

$$a^2 + b^2 = 11n^2$$

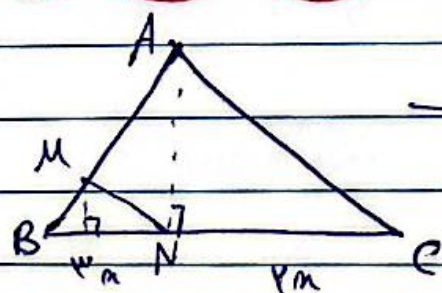
$$4n^2 + 2^2 + n^2 + 2^2 = 11n^2$$

$$2^2 = 11n^2$$

$$2 = \sqrt{11}n$$

8/

$$\frac{a \cdot b}{\frac{n \cdot z}{y}} = \frac{11\sqrt{11}n \times \sqrt{5}n}{\frac{n \times \sqrt{11}n}{1}} = 1$$



$$\frac{S_{ABC}}{S_{BMN}} = \frac{h_1 \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}}{h_r \times \frac{1}{2} \times \frac{1}{2} \times \frac{1}{2}} = \frac{1}{4}$$

(8)

(5)

$$h_1 \parallel h_r \Rightarrow \frac{h_r}{h_1} = \frac{BM}{AB} = \frac{d}{a} \rightarrow \frac{AM}{AB} = \frac{r}{a}$$

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

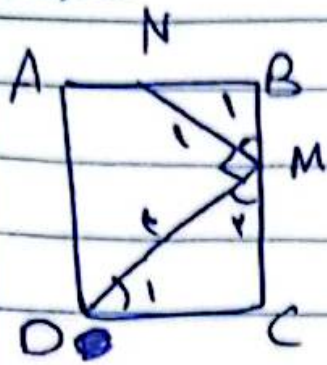
$$\frac{BM}{AM}$$

$$= \frac{d}{r}$$

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$$\left. \begin{aligned} M_1 + M_2 &= 90^\circ \\ M_2 + \angle D_1 &= 90^\circ \end{aligned} \right\}$$

$$M_1 = \angle D_1 \rightarrow \triangle DCM \sim \triangle BMN$$

$$\frac{MC}{BN} = \frac{MD}{NM} = \frac{CD}{BM} = k$$

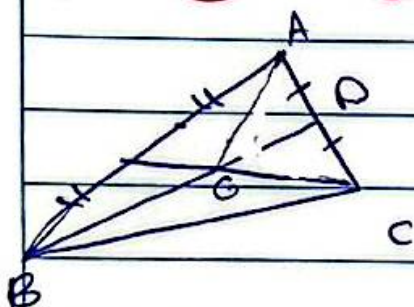
$$BM = \frac{1}{k} CD$$

$$MC = \frac{1}{k} CD$$

$$\left(\frac{1}{k} CD\right)^2 + (CD)^2 = 14 \quad \left(\frac{9}{14} + \frac{14}{14}\right) CD^2 = 14$$

$$\frac{20}{k} CD = k \rightarrow CD = \frac{14}{20}$$

$$S = (CD)^2 = \frac{2 \times 14}{20}$$



$$GD = \frac{1}{3} DB$$

$$FD = \frac{1}{3} GD$$

$$\rightarrow FD = \frac{1}{9} BD$$

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

فقط هر دو ضلع را بنویسید
فقط یک ضلع را بنویسید

YASHA