

$BFC \sim AFE$

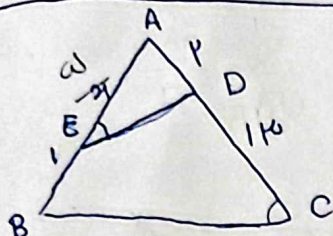
$AC = \sqrt{9+9} = 3\sqrt{2} = 4y \rightarrow y = \frac{3\sqrt{2}}{4}$

$BE = \sqrt{9+1} = \sqrt{10} = 4x \rightarrow x = \frac{\sqrt{10}}{4}$

$\frac{x}{y} = \frac{\frac{\sqrt{10}}{4}}{\frac{3\sqrt{2}}{4}} = \frac{\sqrt{5}}{3}$

1.

5



$\hat{AED} = \hat{ACB}$

$x = \omega$

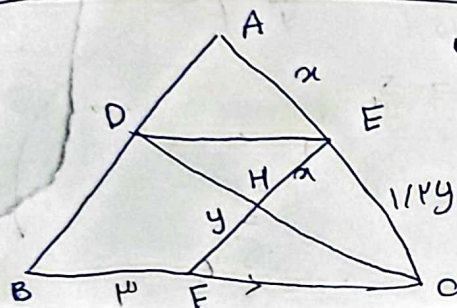
2.

$\frac{BD}{BC} = \frac{y}{x+1} = \frac{\omega}{1\omega} \rightarrow \omega = x^2 + x \rightarrow x^2 + x - \omega = 0$

$(x+1)(x-\omega) = 0$

$\omega = -1$ or $\omega = x$

5



$BF = 3 \quad y = \omega x \quad DE \parallel BC$

$BC = 3$

$\frac{y}{\omega} = \frac{x}{3} - \frac{1}{\omega} = y \quad | \omega = x$

$\frac{1}{\omega} = \frac{3x}{3+x} = \frac{3}{3+x} \quad \text{II}$

$9 = 3 + \omega x$

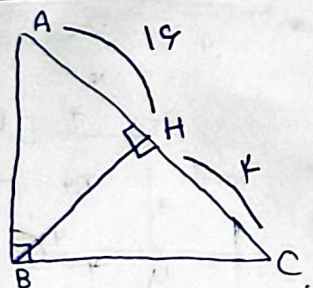
$t = \frac{3}{x} \quad \text{III}$

$BC = 3 + \omega + 1 = \omega = \text{IV}$

$9 = \omega$

3.

5



$AB = 1 \quad BC = 1$

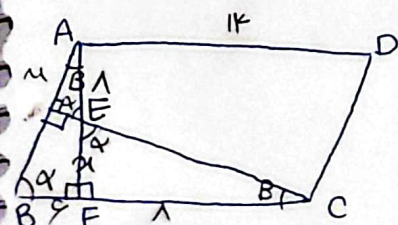
$AB^2 = 1 \times 1 = 1 \rightarrow AB = \sqrt{1}$

$AC^2 = CH \times BH \rightarrow 1 \times 1 = 1 \rightarrow AC = \sqrt{1} = 1$

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

4.

5



$AE = 1 \quad BF = 1 \quad AD = 1 \quad AF = 1$

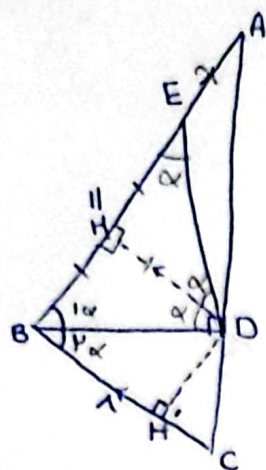
$\frac{EC}{AF} = \frac{EF}{BF} \rightarrow 1 = x^2 + 1 \rightarrow x^2 + 1 - 1 = 0 \rightarrow (x+1)(x-1) = 0$

$AF = 1 + 1 = 2$

5.

5

$x = -1$ or $x = 1$

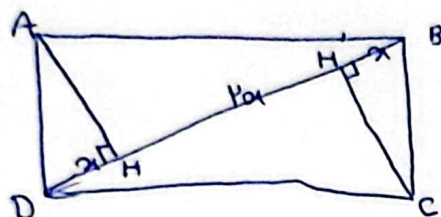


$$\hat{B}_1 = \hat{B}_2$$

$$EH = BH \rightarrow \frac{11}{\sqrt{}} = \frac{\omega}{\omega} = EH$$

$$\frac{DH}{BC} = \frac{AH}{AB} \rightarrow \frac{\omega/\omega}{\Lambda} = \frac{x + \omega/\omega}{x + 11} \rightarrow \Lambda x + 44 = \omega/\omega x + 9/\omega - 12 \cdot 9/9$$

5



$$h^2 = x \times 4x \rightarrow h = \sqrt{4x} \times$$

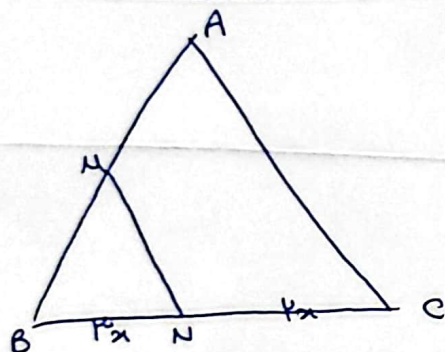
5

$$S_{\square} = S_{ABD} \times 2 = 2 \times \frac{2 \times 4x}{2} = \sqrt{4x} \times 4x \rightarrow 4\sqrt{4x} \times$$

$$S = \frac{\sqrt{4x} \times 4x}{2}$$

$$\frac{4\sqrt{4x} \times 4x}{\sqrt{4x} \times 4x} = \Lambda$$

7

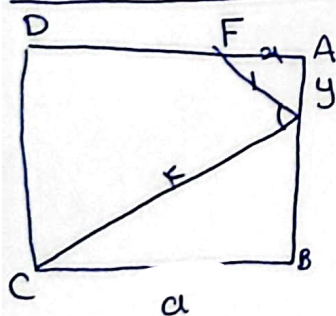


$$\frac{S_{BMN}}{S_{ABC}} = \frac{BM \times BN}{BA \times BC} = \frac{BM}{\frac{AB}{\omega}} \times \frac{\omega}{\omega} = \frac{1}{\omega}$$

5

$$\frac{BM}{AB} = \frac{\omega}{9} \rightarrow \frac{\omega}{9} = 1/\omega$$

8

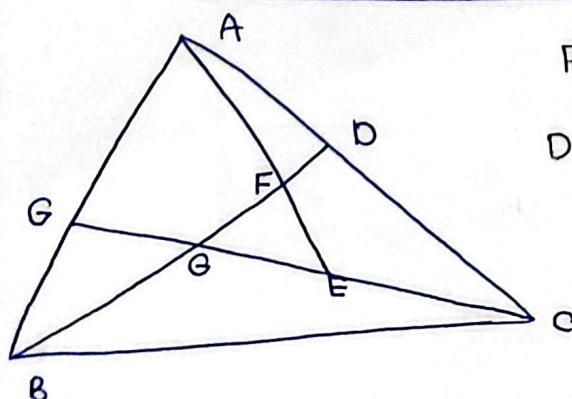


$$\frac{x}{a-y} = \frac{y}{a} = \frac{1}{4} \rightarrow y = \frac{a}{4} \rightarrow x = \frac{4a}{19} \rightarrow \triangle BCE = a^2 + \left(\frac{4a}{19}\right)^2 = 4^2$$

$$a^2 = \frac{(19)^2}{19} = 144$$

5

9



$$FD = \frac{1}{\omega} GD \rightarrow \text{ACB نقل } F$$

$$D = \frac{1}{\omega} BD \rightarrow \text{ABC نقل } \theta$$

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

5

10