

17, 5

طیقا سنجی

نقطه:

$$\frac{AD}{AB} = \frac{5}{12} \quad \frac{DE}{BC} = \frac{5}{12}$$

$$\frac{\frac{1}{2} \times 12}{\frac{1}{2} \times 5} = \frac{12}{5} = 2.4$$

5

$$\frac{BM}{MO} = \frac{BE}{EC} = 2 \Rightarrow ME \parallel DC$$

$$BM = EM = 3$$

$$\frac{BM}{MO} = \frac{ME}{EC} \Rightarrow ME = 2$$

2

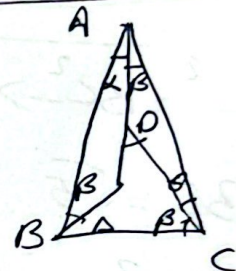
5

$$F = B + D$$

$$F = B + D \Rightarrow F = E - D \Rightarrow \triangle ABC \sim \triangle FED$$

$$D = \frac{1}{2} AB$$

$$\frac{DF}{FE} = \frac{EF}{AB} \Rightarrow AB = 9.6$$



3

$$ME \parallel DC \rightarrow \triangle MEB \sim \triangle CED$$

$$S_{FME} = \frac{1}{2} \times \sqrt{5} \times \frac{3\sqrt{5}}{2} \times \frac{15}{4}$$

$$\frac{CE}{ME} = \frac{CD}{MB} = \frac{ED}{EB} = 2$$

5

$$\frac{CA}{AD} = \frac{CE}{AE} = \frac{AE}{DE} \Rightarrow AE^2 = DE \times CE = 9^2 + 121$$

$$\Rightarrow 121n^2 = 200 + 6n \Rightarrow n^2 - 6n + 21 = 0 \Rightarrow (n-7)(n-3) = 0 \Rightarrow n=3, n=7$$

$$DF^2 = DE \times DC \Rightarrow 17 = 1 + CF \Rightarrow CF = 16$$

$$AB^2 = 4 \times 20 = 80 \Rightarrow AB = \sqrt{80}$$

$$\Rightarrow BC = 8\sqrt{5}$$

$$AC^2 = BC^2 + AB^2 \Rightarrow 400 + 880 = BC^2$$

6

$$BAP \Rightarrow (8\sqrt{2})^2 + (4\sqrt{2})^2 = BP^2$$

$$128 + 32 = 160 \rightarrow BD = 4\sqrt{2}$$

$$(8\sqrt{2})^2 + (4\sqrt{2})^2 = AC^2 \Rightarrow AC = 4\sqrt{2}$$

$$BP^2 + PC^2 = BC^2 \rightarrow BC = \sqrt{2}$$

$$CE + BE = \sqrt{5}$$

$$BA^2 = BE \times BC \Rightarrow \sqrt{5} \times \sqrt{2} = AB^2 = 10$$

(1,0)

$$BA^2 = BE^2 + AE^2 \Rightarrow 10 = 5 + AE^2 \Rightarrow AE = \sqrt{5}$$

$$S_{AEB} = \frac{1}{2} \times \sqrt{5} \times \sqrt{5} = 2.5$$

9

$$16^2 + 12^2 = AC^2 \Rightarrow AC = 20 \quad AB^2 = AH^2 + BH^2$$

$$BC^2 = HC^2 + BH^2 \rightarrow 144 + HC^2 = BH^2$$

$$AB^2 = (20 - HC)^2 + 144 - HC^2 \Rightarrow HC = 7/2$$

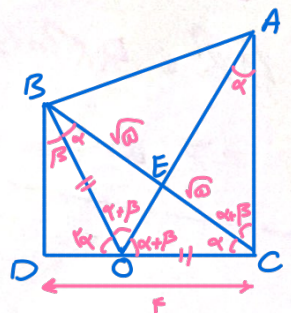
$$\frac{DE}{BC} = \frac{40 + HC^2 - 40 HC}{20} = \frac{40 + (7/2)^2 - 40 \times 7/2}{20} \Rightarrow DE = 3/8$$

$$\angle A + \angle B = 90^\circ$$

$$BD' + DC' = BC' \rightarrow BC = r\sqrt{2} = rBE = rEC \rightarrow BE = EC = \sqrt{2}$$

$$\frac{r}{\sqrt{2}} = \frac{r}{AE} = \frac{r\sqrt{2}}{a} \rightarrow AE = r\sqrt{2}$$

$$S_{ABE} = \frac{1}{2} AE \times BE = a$$



$$\frac{x}{r} = \frac{y}{q} \rightarrow y = \frac{qx}{r}$$

$$x^2 = y(q-y) = \frac{qx}{r}(q-\frac{qx}{r}) \rightarrow x = \frac{r}{q}, y = \frac{q-r}{q}$$

