بنام خدا

ملیکا سنجری

.1

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

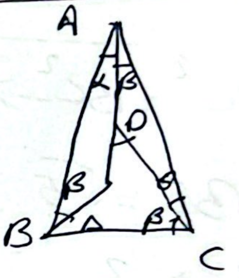
$$\frac{\frac{1}{2} \times 12}{\frac{1}{2} \times 5} = \frac{72}{5} = 44$$

.2

$$\frac{BM}{MD} = \frac{BE}{EC} = 1 \Rightarrow ME \parallel DC \qquad \frac{\overset{3}{BM}}{\underset{6}{BD}} = \frac{ME}{\underset{4}{DC}} \Rightarrow ME = 2$$

~~...~~ $BM = BM = 3$

.3



$F = B + D$

$E = B + \alpha \Rightarrow F = E = D \Rightarrow \hat{ABC} \sim \hat{EFD}$

$D = A + B$

$$\frac{\overset{2,5}{DF}}{8\ BC} = \frac{\overset{3}{EF}}{AB} \Rightarrow AB = 9,6$$

.4

$MB \parallel DC \rightarrow MEB \sim CED \qquad \frac{CE}{ME} = \frac{\overset{3}{CD}}{\underset{3}{MB}} = \frac{ED}{EB} = 2$

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

.5

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

$\Rightarrow 121 x^2 = 200 + 20x \Rightarrow x^2 - 10x + 21 = 0 \Rightarrow (x-7)(x-3) = 0$

$x = 3,\ x = 7$

.6

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

$AB^2 = 4 \times 20 = 80 \Rightarrow AB = \sqrt{80} \qquad AC^2 = BC^2 + AB^2 \Rightarrow 400 - 80 = BC^2$

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

Scanned with CamScanner

.7

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

$128 + 32 = 160 \rightarrow BD = 4\sqrt{10}$

$(8\sqrt{2})^2 + (4\sqrt{2})^2 = NC^2 \Rightarrow NC = 4\sqrt{10}$

.8

$BP^2 + PC^2 = BC^2 \rightarrow BC = \sqrt{20}$

$CE + BE = \sqrt{5}$ $\quad BA^2 = BE \times BC \Rightarrow \sqrt{5} \times \sqrt{20} = AB^2 = 10$

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

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

سؤال 9

.6

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

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

$AB^2 = (20 - HC) + 144 - HC^2$ $\quad \Rightarrow HC = 7.2$

$400 + HC^2 - 40\,HC$

$\frac{DE}{BC} = \frac{AE}{AC} \Rightarrow DE = 3.8$

$\frac{}{12}$ $\quad \frac{}{20}$