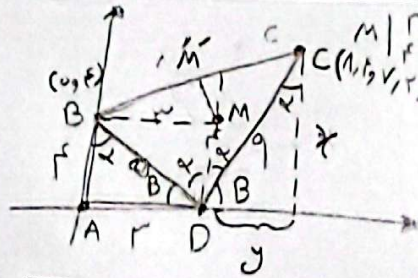
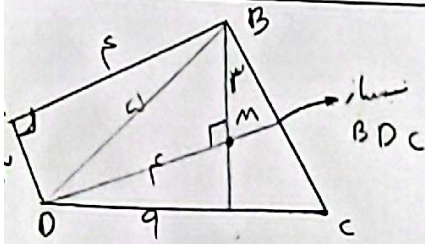


$$\frac{11}{12} = \frac{AE}{AC} = \frac{DE}{BC}$$

$$\left(\frac{DE}{BC}\right) = \frac{11}{12}$$

BE, BDE

$$\frac{S_{BCE}}{S_{BDE}} = \frac{BC}{DE} = \frac{12}{11} = 1.1$$



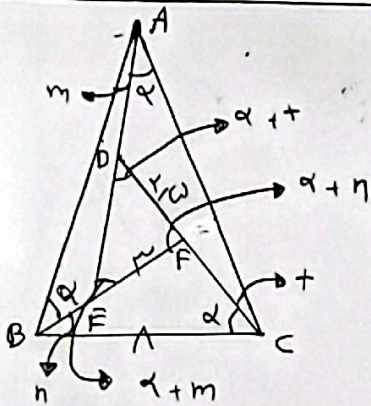
$$A \perp O \quad D \perp O$$

$$\sin B = \frac{f}{a} = \frac{x}{9}$$

$$\cos B = \frac{r}{a} = \frac{y}{9} \Rightarrow y = 9 \cos B$$

$$M'(f, r, a, y)$$

$$MM' = \sqrt{\frac{11^2}{100} + \frac{12^2}{100}} = \sqrt{f} = 1.1$$



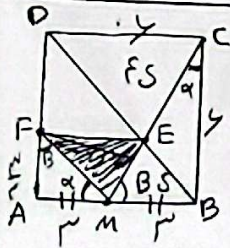
$$ABF = CAE = BCD \quad EF = r \quad DF = 11 \quad AB = ?$$

$$DEF \sim ABC \quad \text{and} \quad r$$

$$\frac{AB}{r} = \frac{11}{12} \quad \text{and} \quad AB = 11 \cdot \frac{12}{r}$$

$$F = B \quad E = A \quad D = C$$

$$AB = 11, 12$$



$$BCE = AMF$$

$$rEB = OFE$$

$$rME = EC$$

$$\tan \alpha = \frac{1}{r}$$

$$\tan \alpha = \frac{AF}{AM} = \frac{1}{r}$$

$$AF = \frac{r}{r}$$

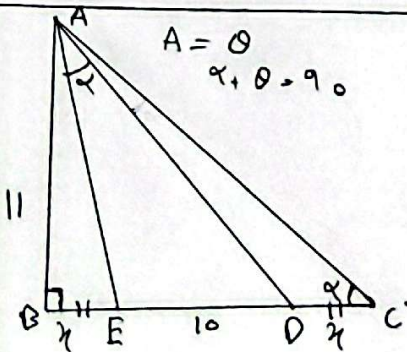
$$MC = 9 + r$$

$$FM = \frac{r\sqrt{2}}{r}$$

$$MC = r\sqrt{2}$$

$$y = \sqrt{2}$$

$$\frac{\sqrt{2} \times r\sqrt{2}}{r} = \frac{10}{r} = (r, \sqrt{2})$$



$$A = 90^\circ$$

$$\alpha + \theta = 90^\circ$$

$$BE = DC, DAE = ACD$$

$$AE^2 = ED \times EC$$

$$11^2 + x^2 = 10x + 100$$

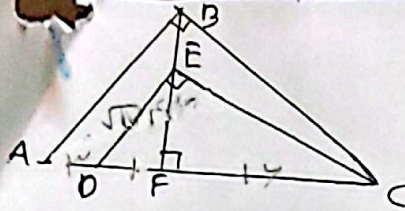
$$x^2 - 10x + 11 = 0$$

$$(x-5)(x-2)$$

$$x_1 = 2, x_2 = 5$$

$$x_1 = 2, x_2 = 5$$

هم قابل قبوله



$$AD = r \quad EF = r \quad DF = 1 \quad BC = ?$$

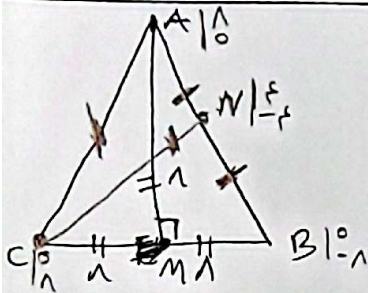
$$1r = 1 \times FC$$

$$BC = 14 \times 10$$

$$FC = 14$$

$$BC = 140$$

(2)



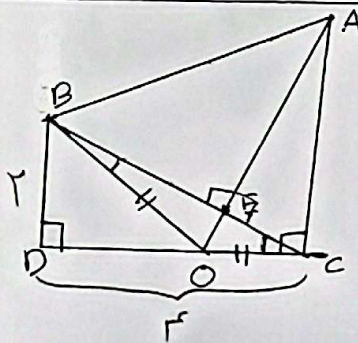
$$r^2 + r^2 = AB^2$$

$$AB^2 = 100$$

$$11(r^2 - 1)$$

$$\sqrt{(r-1)^2 + (-r-1)^2} = \sqrt{100} = 10$$

(2) - v



$$BD = r \quad CD = r \quad \triangle ABE$$

$$\triangle ABE \sim \triangle ACD$$

$$\frac{AE}{AC} = \frac{BE}{CD}$$

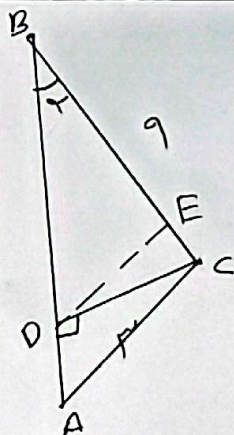
$$AE = r\sqrt{2} \quad BE = \sqrt{2}$$

$$AC = 10$$

$$\frac{1}{r} AE \times B$$

$$\frac{1}{r} \times r\sqrt{2} \times \sqrt{2} = 2$$

(2) - 1

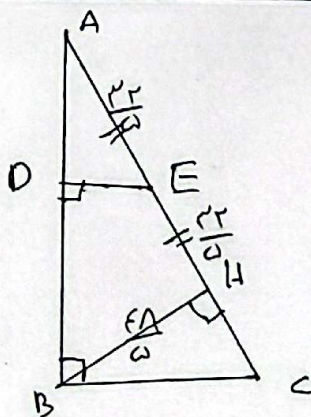


$$\tan \alpha = \frac{r}{9} = \frac{1}{r}$$

$$\cos \alpha = \frac{r}{\sqrt{r^2 + 81}}$$

$$BE = BC \times \frac{BD}{BC} \times \frac{BE}{BD} = 9 \times \frac{r}{\sqrt{r^2 + 81}} \times \frac{r}{\sqrt{r^2 + 81}} = \frac{1}{10} = 1.1$$

(2) - 9



$$AB = 13 \quad BC = 10$$

$$BH = \frac{13 \times 10}{10} = 13$$

$$13r = AH \times 10$$

$$AH = \frac{13r}{10}$$

$$\frac{13r}{10} = \frac{DE}{\frac{r}{10}}$$

$$DE = 13r$$

(2) - 10