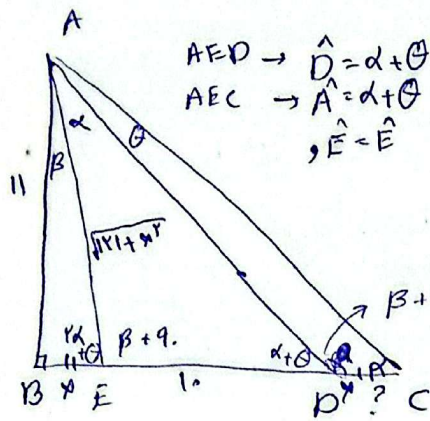




$$\begin{aligned} \triangle AED &\rightarrow \hat{D} = \alpha + \theta \\ \triangle AEC &\rightarrow \hat{A} = \alpha + \theta \\ &\Rightarrow \hat{A} = \hat{D} \quad ; \quad \hat{E} = \hat{E} \\ &\Rightarrow \triangle AEC \sim \triangle AED \end{aligned}$$

$$\begin{matrix} A & E & D \\ C & E & A \end{matrix}$$

$$\begin{aligned} \triangle AED &\rightarrow \hat{A} = \alpha \\ \triangle AEC &\rightarrow \hat{C} = \alpha \end{aligned}$$

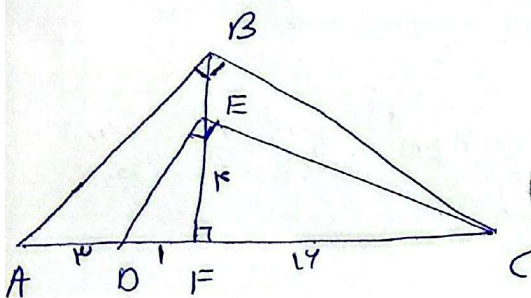
$$\frac{AE}{CE} = \frac{ED}{EA} = \frac{AD}{CA}$$

$$\Rightarrow 1 \times 1 + \alpha^2 = 1 + 1 + \alpha$$

$$\Rightarrow \alpha^2 - 1 + \alpha = 0$$

$$(\alpha - 1)(\alpha + 1) = 0$$

$$\begin{cases} \alpha = 1 \\ \alpha = -1 \end{cases}$$



$$BC = ?$$

$$\triangle DEF \sim \triangle EFC$$

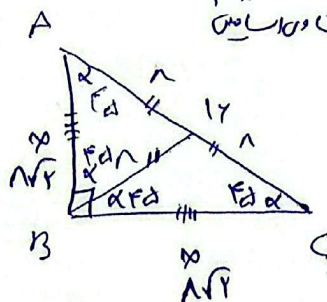
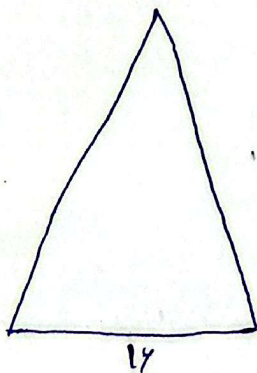
$$14 = 1 \times FC \Rightarrow FC = 14$$

$$\triangle ABC \sim \triangle EFC$$

$$BC^2 = \frac{CF}{EF} \cdot \frac{AC}{EC}$$

$$\Rightarrow BC = 14 \times \sqrt{2} = 14\sqrt{2}$$

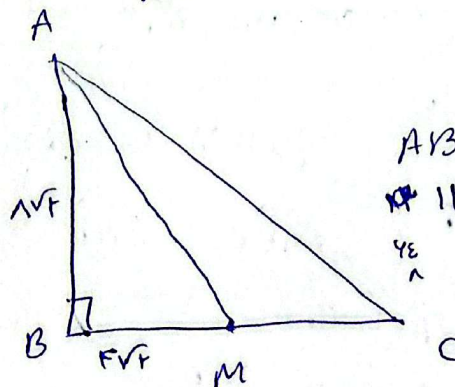
$$= \sqrt{392}$$



$$\alpha^2 + \alpha^2 = (14)^2$$

$$\Rightarrow \alpha^2 = 14^2 \Rightarrow \alpha = 14$$

$$= 14\sqrt{2}$$



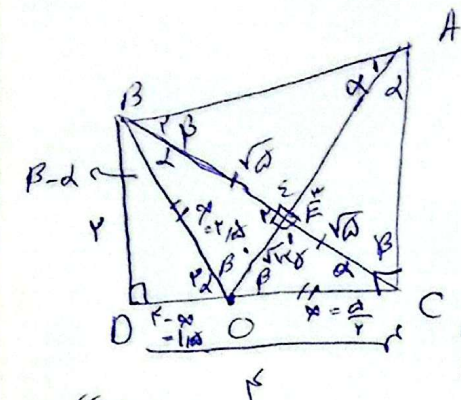
$$AB^2 + BM^2 = AM^2$$

$$14^2 + 14^2 = 14^2$$

$$\Rightarrow AM = 14\sqrt{2}$$

المسألة ١٢

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

$$B + d = 9$$

$$\triangle OBE \cong \triangle OEC \Rightarrow \begin{cases} \hat{E}_1 = \hat{E}_2 = 90^\circ \\ EO = EO \\ OC = OB \end{cases} \Rightarrow EB = EC$$

$$\triangle ABE \cong \triangle AEC \Rightarrow \begin{cases} \hat{A}_1 = d \\ \hat{B}_1 = B \end{cases}$$

في المثلث BDC

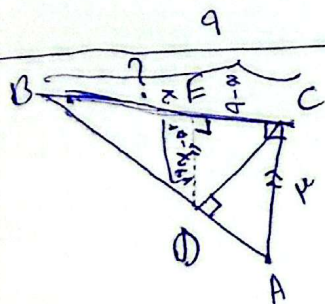
$$DB + DC = BC \Rightarrow \frac{(r)^2}{r} + \frac{(r)^2}{r} = BC \Rightarrow BC = \sqrt{r} = \sqrt{a}$$

$$\triangle BDO \Rightarrow BD + DO = BO \Rightarrow r + 14 + 9 - 14 = r \Rightarrow 14 = r \Rightarrow r = 14$$

$$\triangle OEC \Rightarrow (OE)^2 + (OC)^2 = (EC)^2 \Rightarrow OE = \sqrt{r \cdot d}$$

$$\triangle ABE \sim \triangle COE \Rightarrow \frac{AB}{CO} = \frac{BE}{OE} = \frac{AE}{CE} \Rightarrow \frac{\sqrt{a}}{\sqrt{r \cdot d}} = \frac{AE}{\sqrt{a}} \Rightarrow AE = \frac{d}{\sqrt{r \cdot d}} = \sqrt{\frac{r \cdot d}{r \cdot d}} = \sqrt{r}$$

$$= \sqrt{a}$$



$$DE = EC \cdot EB = (9 - x)(x) = 9x - x^2$$

$$\Rightarrow DE = \sqrt{9x - x^2}$$

$$DE \parallel AC \Rightarrow \frac{BE}{BC} = \frac{DE}{AC}$$

$$x = \sqrt{9x - x^2}$$

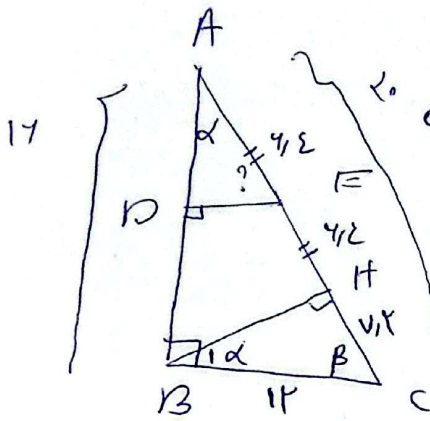
$$x^2 = 9(9x - x^2)$$

$$14x - 14x = 0$$

$$x(14 - 14) = 0$$

$$\Rightarrow 14 = 14 \Rightarrow x = 14$$

⑩



$\frac{A^1}{A^0} : AB^T + BC^T = AC^T$
 $(1+)^T + (4)^T = AC^T \Rightarrow AC = 2$

$\hat{C} = \hat{B}$
 $\hat{B}_1 = \alpha$
 $\hat{A} = \alpha$

$$\frac{BC}{AC} = \frac{HC}{BC} \Rightarrow \frac{1r}{r} = \frac{HC}{1r}$$

$$\Rightarrow HCP \Rightarrow 18e \Rightarrow d H C \Rightarrow 14e \Rightarrow H C \Rightarrow 10e$$

$$AE = \frac{AC - HC}{r} = \frac{15 - 11}{r} = \frac{4}{r} = 4\%$$

$$\hat{B} = \hat{D} = 90^\circ \Rightarrow DE \parallel BC \Rightarrow \frac{DE}{BC} = \frac{AE}{AC} \Rightarrow \frac{DE}{15} = \frac{4,8}{10} \Rightarrow \frac{4,8 \times 15}{10} = DE$$
$$= \frac{19,2}{2} = \frac{11,8}{1} = \boxed{11,8}$$