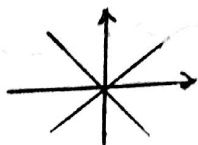


$$P = \{(1, 4a), (1, a^2 + 4), (2, 3a)\} \Rightarrow \text{مجموعه}$$

$$a^2 + 4 = 4a \Rightarrow a^2 - 4a + 4 = 0 \Rightarrow (a-2)(a-2) = 0 \Rightarrow \begin{cases} a=2 \\ a=0 \end{cases}$$

$$\begin{cases} a=2 \Rightarrow \{(1, 2), (1, 2), (2, 6)\} \quad \checkmark \\ a=0 \Rightarrow \{(1, 4), (1, 4), (2, 0)\} \quad \checkmark \end{cases}$$

$$\text{الف) } |x| = |y|$$



$$\text{ب) } |y| + \sqrt{x-1} = 0 \Rightarrow |y| = -\sqrt{x-1} \Rightarrow \begin{cases} y=0 \\ x-1=0 \Rightarrow x=1 \end{cases}$$



$$\text{الف) } |y-1| = \sqrt{x-2} \xrightarrow{x=4} |y-1| = 2 \Rightarrow \begin{cases} y=-1 \\ y=3 \end{cases}$$

$$\text{ب) } y^{\omega} - y = \frac{x^2}{y} \xrightarrow{x=0} y^{\omega} - y = 0 \Rightarrow \begin{cases} y=1 \\ y=-1 \\ y=0 \end{cases}$$

$$\text{ج) } \sin^2 x + \cos^2 \frac{y}{x} = 1 \xrightarrow{x=0} \cos^2 \frac{y}{x} = 1 \xrightarrow{\sqrt{}} \cos \frac{y}{x} = \pm 1 \quad \times$$

$$\text{د) } 2xy = x \xrightarrow{x=0} y=0 \Rightarrow \text{خط مستقیم منفرجه}$$

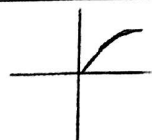
$$\text{الف) } x^2 + |y-1| = 4x \Rightarrow x^2 - 4x + |y-1| = 0 \xrightarrow{x=2} |y-1| = 0 \Rightarrow \begin{cases} y=1 \\ y=-1 \end{cases} \quad \times$$

محل تقاطع

$$\text{ب) } y^{\omega} + 3x = 0 \Rightarrow \begin{cases} y_1^{\omega} + 3x_1 = 0 \\ y_2^{\omega} + 3x_2 = 0 \end{cases} \xrightarrow{x_1=x_2} y_1^{\omega} = y_2^{\omega}$$

(1, 1), (1, -1)

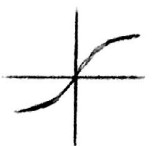
$$\text{الف) } y = \sqrt[4]{x}$$



$$\text{ج) } y = \frac{1}{x^4}$$



$$\text{ب) } y = \sqrt[5]{x}$$



$$\text{د) } y = \frac{1}{x^4}$$



الف) $y = (x-1)^2$



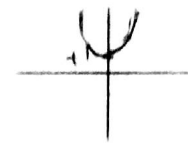
ج) $y = x^2 - 2$



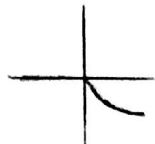
ب) $y = (x+2)^2$



د) $y = x^2 + 1$



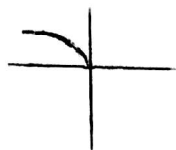
الف) $y = -\sqrt{x}$



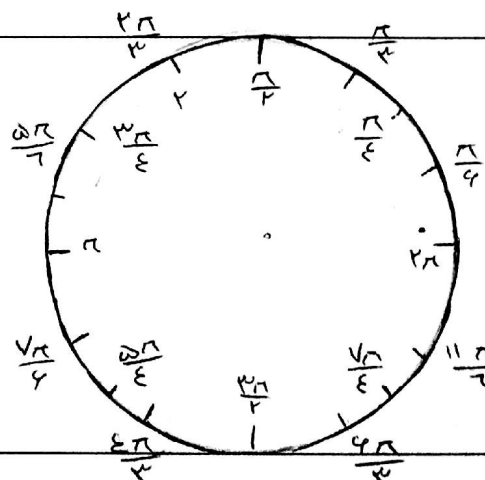
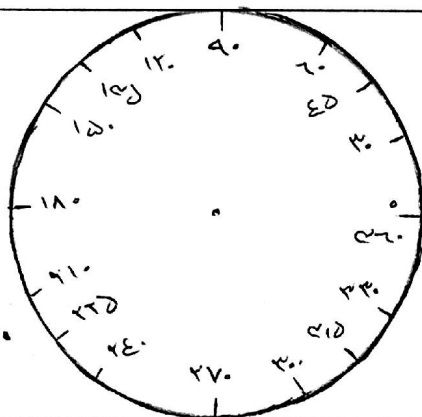
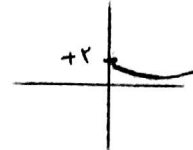
ج) $y = -\sqrt{-x}$



ب) $y = \sqrt{-x}$



د) $y = 1 - \sqrt{x} + 2$



الف) $\sin 120^\circ \Rightarrow -\frac{1}{2}$

ج) $\sin \frac{5\pi}{6} \Rightarrow \frac{1}{2}$

ب) $\sin 150^\circ \Rightarrow \frac{1}{2}$

د) $\sin \frac{11\pi}{6} \Rightarrow -\frac{1}{2}$