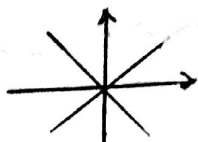


$$P = \{(1, 4a), (1, a^2 + 3), (2, 3a)\} \Rightarrow \text{مجموعه}$$

$$a^2 + 3 = 4a \Rightarrow a^2 - 4a + 3 = 0 \Rightarrow (a-3)(a-1) = 0 \Rightarrow \begin{cases} a=3 \\ a=1 \end{cases}$$

$$\begin{cases} a=3 \Rightarrow \{(1, 12), (1, 12), (2, 9)\} \quad \emptyset \\ a=1 \Rightarrow \{(1, 4), (1, 4), (2, 3)\} \quad \emptyset \end{cases}$$

الف) $|x| = |y|$



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



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

ب) $y^5 - y = \frac{x^2}{y} \xrightarrow{x=0} y^5 - y = 0 \Rightarrow \begin{cases} y=1 \\ y=-1 \\ y=0 \end{cases}$

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

د) $2xy = x \xrightarrow{x=0} y=0 \Rightarrow$ خط مستقیم منبسط به محور x

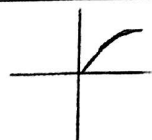
الف) $x^2 + |y-1| = 4x \Rightarrow x^2 - 4x + |y-1| = 0 \xrightarrow{x=2} |y-1| = 0 \Rightarrow \begin{cases} y=1 \\ y=-1 \end{cases} \quad \times$

محل تقاطع

ب) $y^5 + 3x = 0 \Rightarrow \begin{cases} y_1^5 + 3x_1 = 0 \\ y_2^5 + 3x_2 = 0 \end{cases} \xrightarrow{x_1=x_2} y_1^5 = y_2^5 \quad \checkmark$

(1, 0), (0, 1), (0, -1)

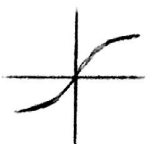
الف) $y = \sqrt[4]{x}$



ج) $y = \frac{1}{x^4}$



ب) $y = \sqrt[5]{x}$



د) $y = \frac{1}{x^4}$



الف) $y = (x-1)^2$



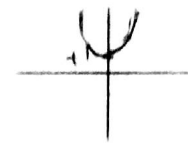
ج) $y = x^2 - 2$



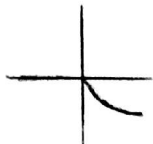
ب) $y = (x+2)^2$



د) $y = x^2 + 1$



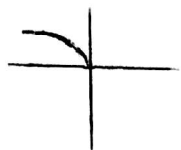
الف) $y = -\sqrt{x}$



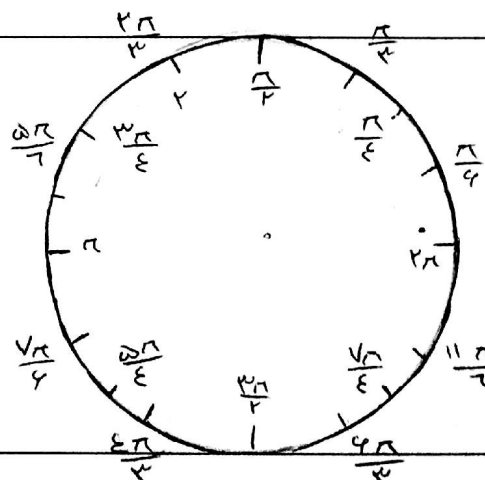
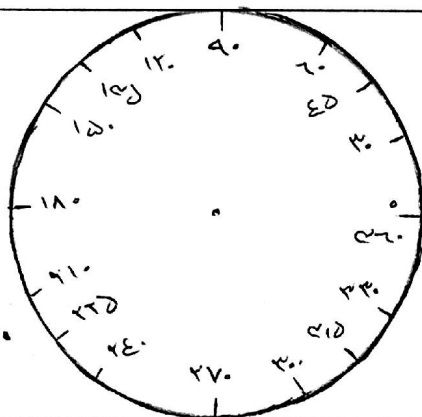
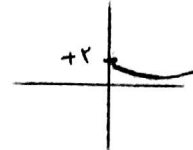
ج) $y = -\sqrt{-x}$



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