

۱- الف) $y_1'' - u_1 = 2u_1''$ $y_2'' - u_2 = 2u_2''$ $\rightarrow y_1'' = y_2''$ ✓
 اگر $u_1 = u_2$ $\rightarrow$ تابع است!

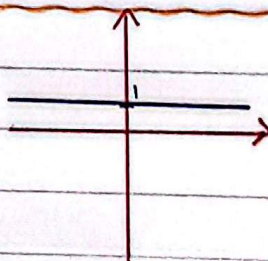
ب) $|y| + u^2 = u + 1^2 \xrightarrow{u=0} |y| = 3 \Rightarrow y < \begin{matrix} 3 \\ -3 \end{matrix}$ $\rightarrow$ تابع نیست!

ج) $\sqrt{u - k} + |y - 2| = 0$ به ازای اعداد مثبت به جز k ناممکن است
 به ازای اعداد منفی و صفر نیز ناممکن است
 پس حالتی داریم که $u = 2$ و $y = 2$ در نتیجه عبارت تابع است!

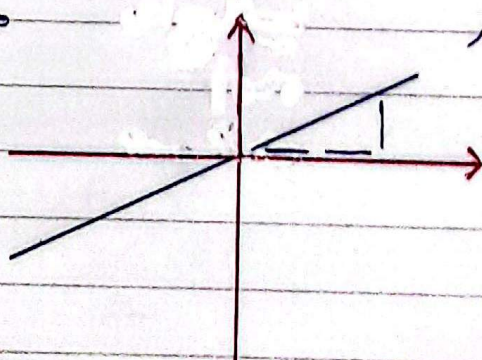
د) $u = \cos y \xrightarrow{u=0} y < \begin{matrix} 90 = \frac{\pi}{2} \\ 270 = \frac{3\pi}{2} \end{matrix}$ $\rightarrow$ تابع نیست!

۲- الف) y^2 ثابت $\Rightarrow$ تابع ثابت

① $y = k$
 $y = 1$



ب) $y = ax + b \Rightarrow 2 = 2 + 0 \Rightarrow b = 0$
 $2 = (2)(1) + 0$ میگذرد



$$y = ax + b \xrightarrow{\text{بما}} x = y \Rightarrow x = 1 \cdot (x) + b \quad \text{م - الف.}$$

$$b = 0$$

نماذج
اول و ثانيا

$$a = 1$$

$$\Rightarrow a + 1b = 1 + 0 = 1$$

$$\frac{-a}{2} = 2 \Rightarrow a = -4$$

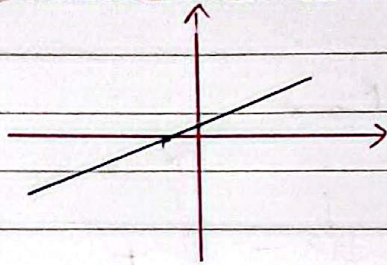
(ب) (3)

$$1 = a^2 - 4x + b \Rightarrow 1 = 4 - 4 + b \Rightarrow b = 1$$

$$a + 2b \Rightarrow -4 + 1 = -3$$

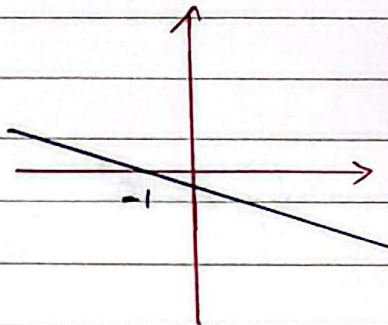
$$y = 2x + 1$$

(4) الف



$$y = -4x + 1$$

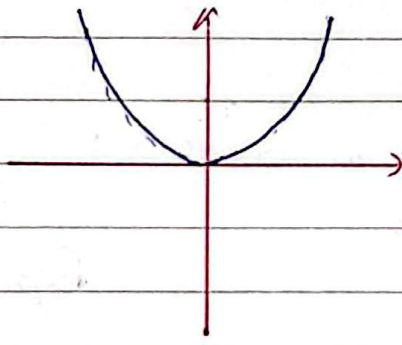
(ب)



$$y = x^2$$

(ج)

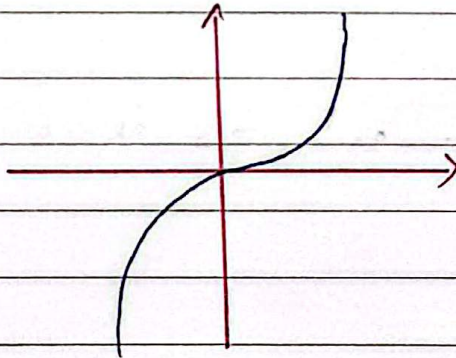
$$y = x^2$$



$$y = a^5$$

$$y = a^2$$

(د)



$$y = \frac{x + \varepsilon}{x^p + x + \varepsilon}$$

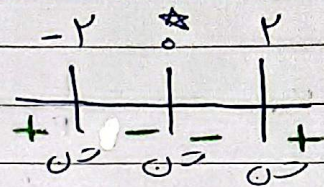
$$\mathcal{D} = \mathbb{R}$$

(ج ٩)

$$y = \frac{x + \varepsilon}{x^p - \varepsilon x^p}$$

$$x^p(x^p - \varepsilon) \Rightarrow x^p(x - p)(x + p)$$

نشان ده *



(د ٩)

$$\mathcal{D} = (-\infty, -p) \cup (p, +\infty)$$

$$y = \sqrt{4 - x} + \sqrt{x - 2}$$

(الف ٧)

$$4 - x \geq 0$$

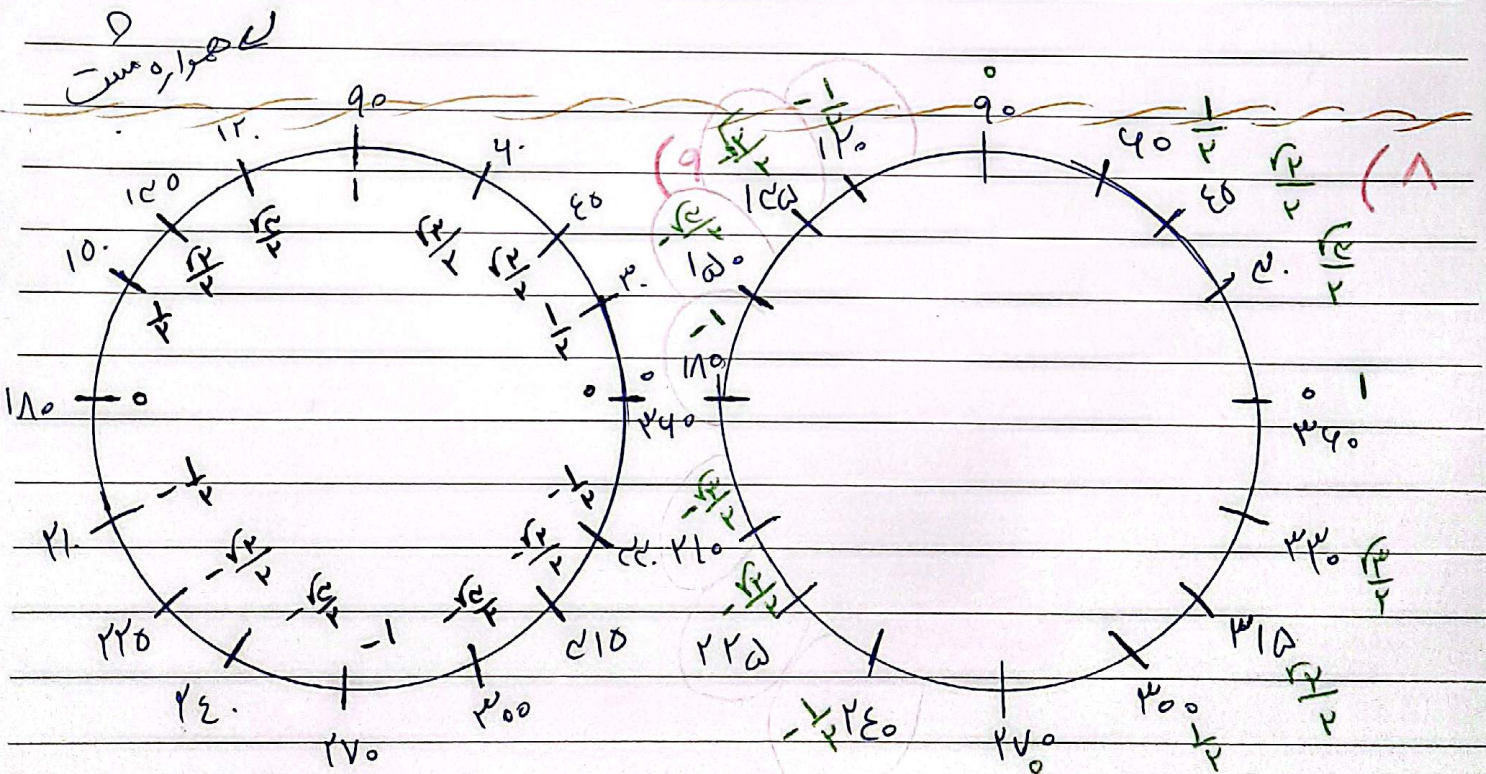
$$4 \geq x \text{ و } x - 2 \geq 0 \Rightarrow \mathcal{D} = [2, 4]$$

$$\cap x \geq 2$$

$$y = \frac{x^2 + 1}{x^2 + 1}$$

$$\Rightarrow \mathcal{D} = \mathbb{R}$$

(ب ٧)



(10)

$$r\left(\frac{1}{\mu}\right) = 1r_0$$

الف)

$$\cos 1r_0 = -\frac{1}{\mu} \xrightarrow{\text{قرينة}} \frac{1}{\mu} \Rightarrow \sin \frac{\pi}{6}, \frac{5\pi}{6}$$

ب)

$$11\left(\frac{1}{\mu}\right) = 3r_0 / \cos 3r_0 = \frac{\sqrt{\mu}}{\mu} \xrightarrow{\text{قرينة}} -\frac{\sqrt{\mu}}{\mu}$$

$$\sin \frac{7\pi}{6}, \frac{5\pi}{6}$$