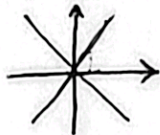


$$P = \left\{ (1, \varepsilon a), (1, a^2 + 3), (2, 3a) \right\} \xrightarrow{i=1} \varepsilon a = a^2 + 3 \Rightarrow -a^2 + \varepsilon a - 3 = 0$$

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

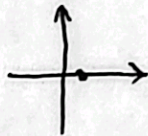
الف) $|y| = |x|$



تابع است

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

تابع است



الف) $|y-1| = \sqrt{x-2} \xrightarrow{x=3} |y-1| = \sqrt{1-1} = 0 \Rightarrow y = 1$ بزرگای یک دارد

ب) $y^5 - y = x^2/2 \Rightarrow y(y^4 - 1) = \frac{x^2}{2} \xrightarrow{x=0} y = \begin{cases} 0 \\ 1 \\ -1 \end{cases}$ تابع نیست

ج) $\sin^2 x + \cos^2 y/2 = 1 \xrightarrow{x=0} 0 + \cos^2 y/2 = 1 \Rightarrow y = 0, \pm\sqrt{2}$ دو تابع نیست

د) $2xy = x \xrightarrow{x=0} 2(0) = 0$ یعنی هر مقدار را می تواند داشته باشد $y = \mathbb{R} \Rightarrow$ تابع نیست

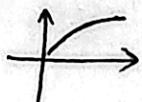
الف) $x^2 + |y-1| = \varepsilon x \xrightarrow{x=1} 1 + |y-1| = \varepsilon \Rightarrow |y-1| = 3 \Rightarrow y-1 = \pm 3$

$\Rightarrow y = \begin{cases} 2 \\ -2 \end{cases}$ تابع نیست

$\Rightarrow y_1 = y_2$ تابع است

ب) $y^5 + 3x = 0$ $\left. \begin{array}{l} y_1^5 + 3x_1 = 0 \\ y_2^5 + 3x_2 = 0 \end{array} \right\} \xrightarrow{x_1=x_2} y_1^5 + 3x_1 = y_2^5 + 3x_2$

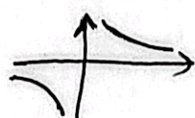
$y = \sqrt[4]{x}$



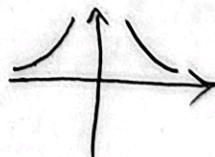
$y = \sqrt[5]{x}$

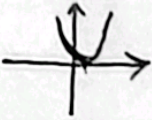


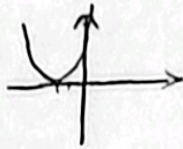
$y = 1/x^3$



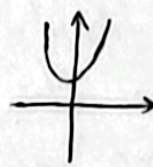
$y = 1/x^2$

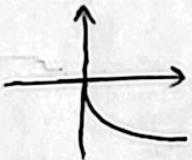


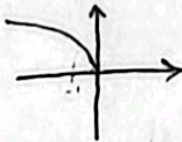
الف) $y = (x-1)^2$ 

ب) $y = (x+2)^2$ 

ج) $y = x^2 - 2$ 

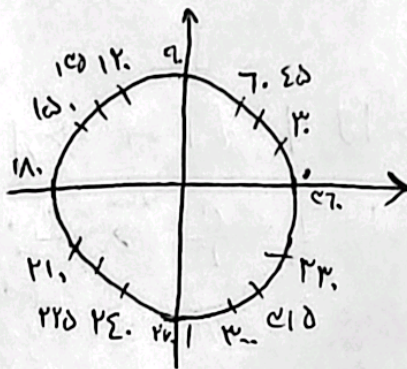
د) $y = x^2 + 1$ 

الف) $y = -\sqrt{x}$ 

ب) $y = \sqrt{-x}$ 

ج) $y = -\sqrt{-x}$ 

د) $y = -\sqrt{x} + 2$ 



الف) $\cos 120^\circ = -\frac{1}{2}$

ب) $\sin 150^\circ = \frac{1}{2}$

ج) $\cos \frac{5\pi}{6} = -\frac{1}{2}$

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