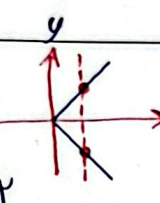


$$f = \{(1, fa), (1, a^2 + 3), (2, 3a)\}$$

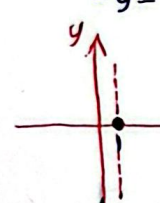
$$\hookrightarrow fa = a^2 + 3 \rightarrow a^2 - fa + 3 = 0 \rightarrow (a-1)(a-3) = 0 \rightarrow \begin{cases} a=1 \\ a=3 \end{cases}$$

۱

الف) $|y| = |x| \rightarrow y = \pm |x|$  تابع نیست $\rightarrow$

$x=2$ مثال باعد $y = \pm 2$ $y=2$ $y=-2$

۲

ب) $|y| + \sqrt{x-1} = 0$  تابع است $\rightarrow$

دو عبارت نامنفی هستند پس هر دو باید صفر باشند.

الف) $|y-1| = \sqrt{x-2} \xrightarrow{x=2} |y-1| = 2 \rightarrow y-1 = \pm 2 \rightarrow y=3 \text{ } y=-1$ تابع نیست

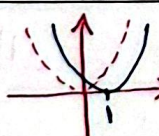
ب) $y^5 - y = \frac{x^2}{y} \xrightarrow{x=0} y^5 - y = 0 \rightarrow y(y^4 - 1) = 0 \rightarrow y=0 \text{ } y=1 \text{ } y=-1$ تابع نیست

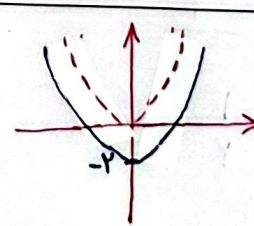
ج) $\sin^2 x + \cos^2 \frac{y}{y} = 1 \xrightarrow{x=0} 0 + \cos^2 \frac{y}{y} = 1 \rightarrow \cos^2 \frac{y}{y} = 1 \rightarrow y=0 \text{ } y=360^\circ$

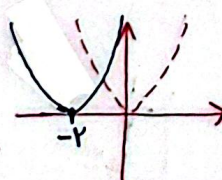
د) $2xy = x \rightarrow 2xy - x = 0 \rightarrow x(2y-1) = 0 \xrightarrow{x=0} 2y-1$ با هر مقداری می تواند برابر باشد.

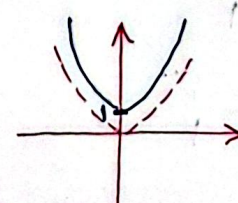
الف) $x^2 + |y-1| = 4x \rightarrow |y-1| = 4x - x^2 \xrightarrow{x=2} |y-1| = 4 \rightarrow y-1 = \pm 4 \rightarrow \begin{cases} y=5 \\ y=-3 \end{cases}$ تابع نیست

ب) $y^5 + 3x = 0 \rightarrow \begin{cases} y_1^5 + 3x_1 = 0 \\ y_2^5 + 3x_2 = 0 \end{cases} \xrightarrow{x_1=x_2} y_1^5 = y_2^5 \rightarrow y_1 = y_2$ تابع است

الف) $y = (x-1)^2$ 

ج) $y = x^2 - 2$ 

ب) $y = (x+2)^2$ 

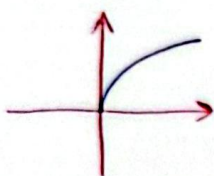
د) $y = x^2 + 1$ 

جواب سوال ۶

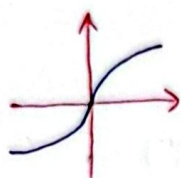
۶

جواب سوال ۵ در صفحه بعد

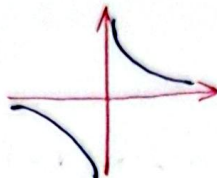
الف) $y = \sqrt{x}$



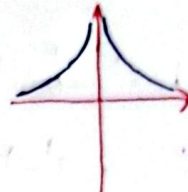
ب) $y = \sqrt[5]{x}$



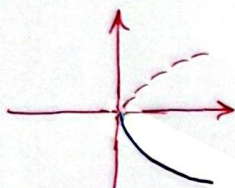
ج) $y = \frac{1}{x^3}$



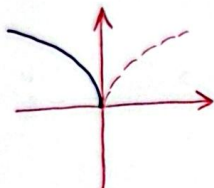
د) $y = \frac{1}{x^4}$



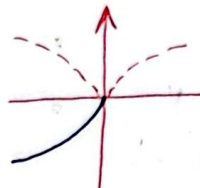
الف) $y = -\sqrt{x}$



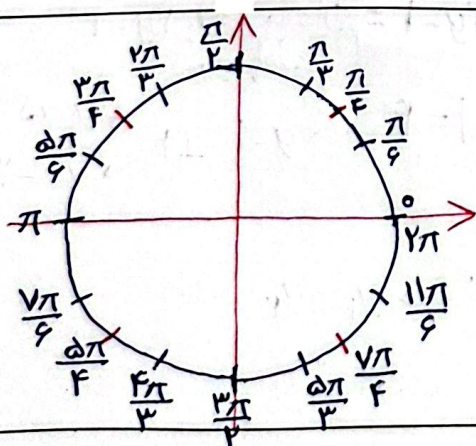
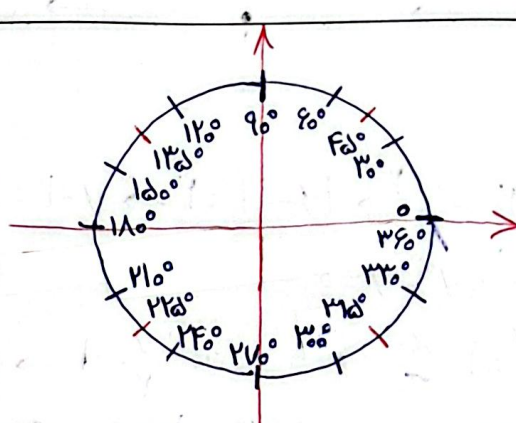
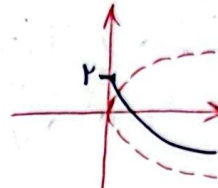
ب) $y = \sqrt{-x}$



ج) $y = -\sqrt{-x}$



د) $y = -\sqrt{x} + 2$



الف) $\cos 120^\circ = -\frac{1}{2}$

ب) $\sin 150^\circ = \frac{1}{2}$

ج) $\cos \frac{5\pi}{3} = \frac{1}{2}$

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

cos
sin

باتوجه به شکل های سوال

۸ و ۹ :

$120^\circ = \left| \frac{-\frac{1}{2}}{\frac{\sqrt{3}}{2}} \right|$

$150^\circ = \left| \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} \right|$

$\frac{5\pi}{3} = 300^\circ = \left| \frac{\frac{1}{2}}{-\frac{\sqrt{3}}{2}} \right|$

$\frac{11\pi}{6} = 330^\circ = \left| \frac{\frac{\sqrt{3}}{2}}{-\frac{1}{2}} \right|$