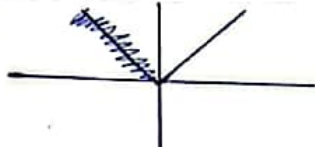


$$f = \{(1, 4a), (1, a^2 + 3), (2, 3a)\} = \text{تابع}$$

$$\rightarrow 4a = a^2 + 3 \rightarrow a^2 - 4a + 3 = 0$$

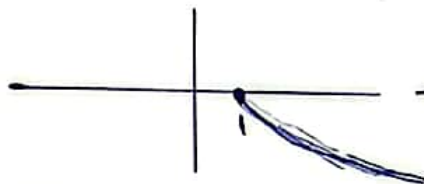
$$\Rightarrow (a-1)(a-3) = 0 \Rightarrow a \begin{cases} 1 \\ 3 \end{cases}$$

الف) $|y| = |x|$ تابع نیست



ب) $|y| + \sqrt{x-1} = 0$

$$\rightarrow |y| = -\sqrt{x-1}$$



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

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

ج) $\sin^2 x + \cos^2 \frac{y}{4} = 1 \xrightarrow{x=0} \cos^2 \frac{y}{4} = 1 \rightarrow y=0$

د) $2xy = x$

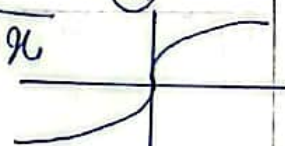
الف) $x^2 + |y-1| = 4x \xrightarrow{x=1} |y-1| = 3 \rightarrow y=4$ تابع نیست

ب) $y^5 + 4x = 0 \rightarrow \begin{cases} y_1^5 = -4x_1 \\ y_2^5 = -4x_2 \end{cases} \xrightarrow{x_1=x_2} y_1^5 = y_2^5 \rightarrow y_1 = y_2$ تابع هست

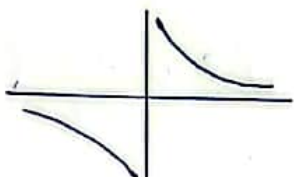
الف) $y = \sqrt[4]{x}$



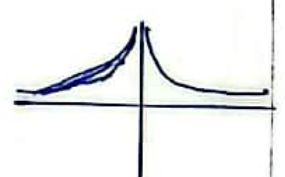
ب) $y = \sqrt[5]{x}$



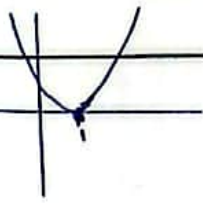
ج) $y = \frac{1}{x^2}$



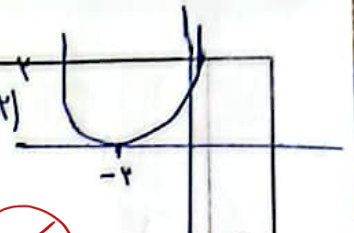
د) $y = \frac{1}{x^4}$



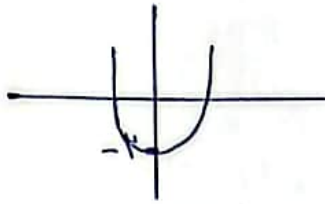
الف) $y = (x-1)^2$



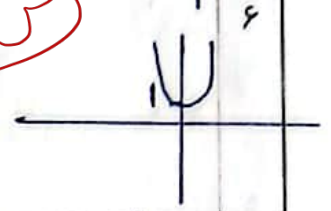
ب) $y = (x+2)^2$



ج) $y = x^2 - 2$



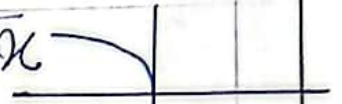
د) $y = x^2 + 1$



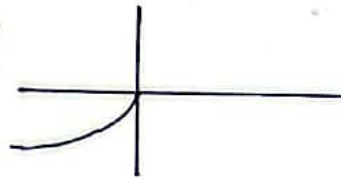
الف) $y = -\sqrt{x}$



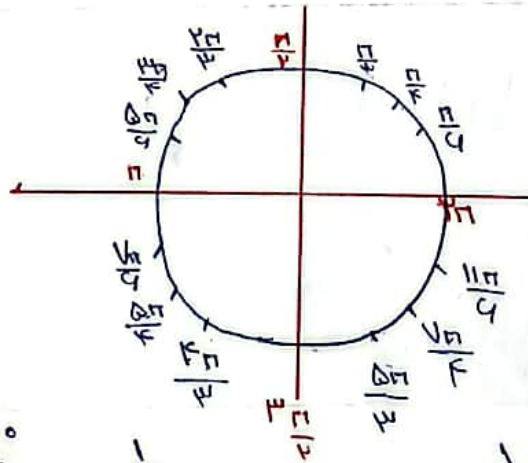
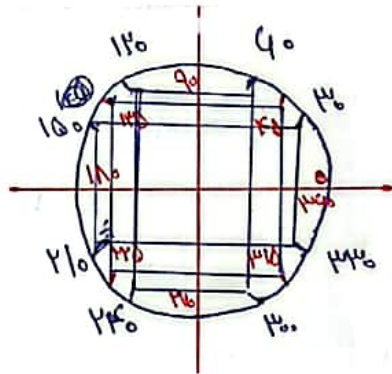
ب) $y = \sqrt{-x}$



ج) $y = -\sqrt{-x}$



د) $y = -\sqrt{x} + 2$



الف) $\cos 12^\circ = \frac{1}{2}$

ب) $\sin 15^\circ = \frac{1}{4}$

ج) $\cos \frac{5\pi}{12} = \frac{1}{2}$

د) $\sin \frac{11\pi}{12} = -\frac{1}{2}$

درازا 8

درازا 8

135°