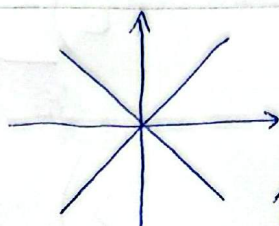


$$a^2 + 2 = 2a \rightarrow a^2 - 2a + 2 = 0 \xrightarrow{a=x} x^2 - 2x + 2 = 0 \rightarrow a+b+c=0$$

$$\boxed{a=1, a=3} \quad \begin{matrix} a=x \\ \swarrow \searrow \\ x=\frac{c}{a}=2 \end{matrix} \quad \begin{matrix} \swarrow \searrow \\ x=1 \end{matrix}$$

الف) $|y| = |x| \rightarrow \begin{matrix} y=x \\ y=-x \end{matrix}$



تابع نیست $\Rightarrow$

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



تابع نیست $\Rightarrow$

الف) $|y-1| = \sqrt{x-2} \xrightarrow{x=4} |y-1| = \sqrt{4-2} = \sqrt{2} \rightarrow y=1+\sqrt{2}, y=1-\sqrt{2}$

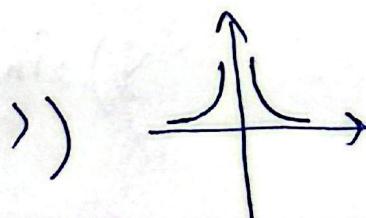
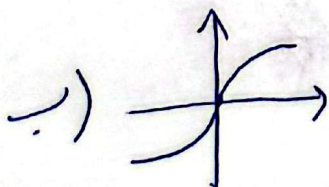
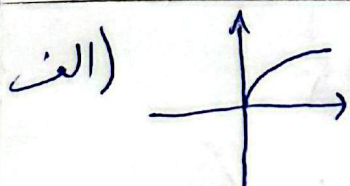
ب) $y^2 - y = \frac{x^2}{y} \xrightarrow{x=0} y^2 - y = 0 \rightarrow y(y^2 - 1) = 0 \rightarrow y=0, y=1$

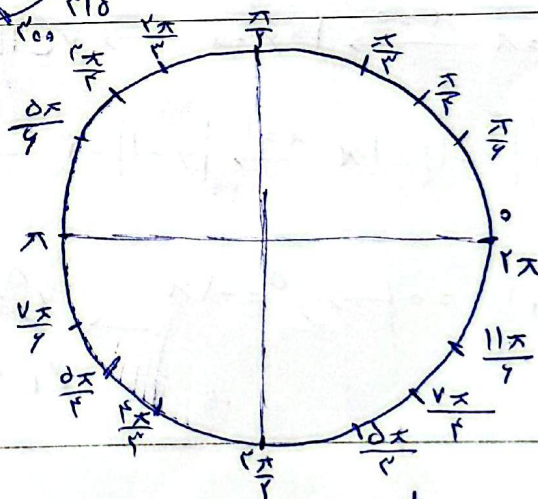
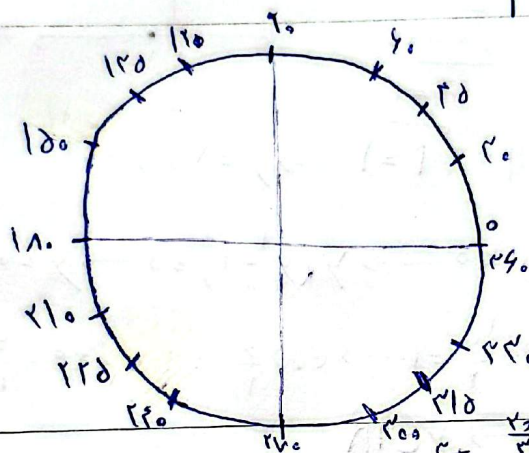
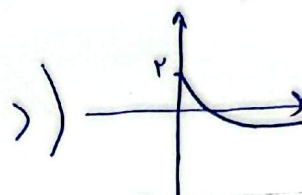
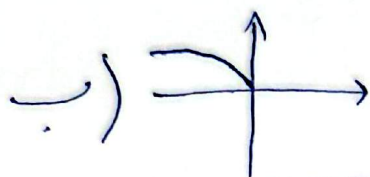
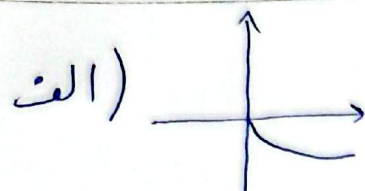
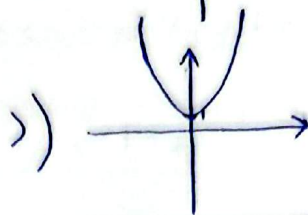
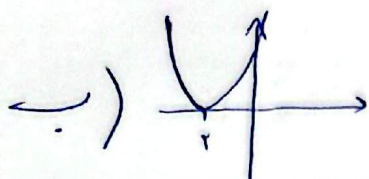
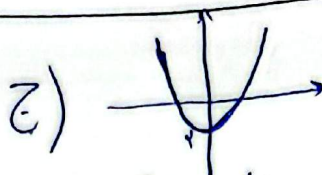
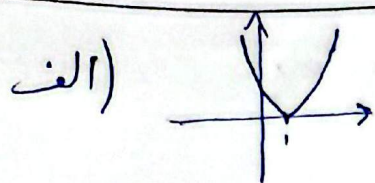
ج) $\sin^2 x + \cos^2 \frac{y}{x} = 1 \xrightarrow{x=0} \cos^2 \frac{y}{x} = 1 \rightarrow \cos \frac{y}{x} = \pm 1 \rightarrow \frac{y}{x} = 0, \frac{y}{x} = \pi \rightarrow y=0, y=\pi x$

د) $2xy = x \xrightarrow{x=0} 2xy = 0 \rightarrow y \in \mathbb{R}$

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

ب) $y^2 + 2x = 0 \rightarrow y^2 = -2x \rightarrow \begin{matrix} y_1^2 = -2x_1 \\ y_2^2 = -2x_2 \end{matrix} \xrightarrow{x_1=x_2} y_1^2 = y_2^2 \rightarrow y_1 = y_2$ تابع نیست $\leftarrow$





الف) $\cos 120^\circ = -\frac{1}{2}$

ج) $\cos \frac{2\pi}{3} = \cos 120^\circ = -\frac{1}{2}$

ب) $\sin 150^\circ = \frac{1}{2}$

د) $\sin \frac{11\pi}{6} = \sin 330^\circ = -\frac{1}{2}$