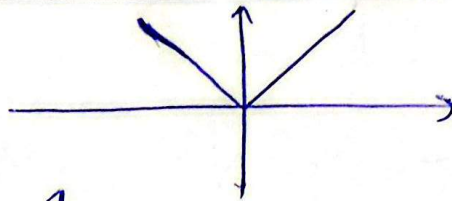


$$F = \{(1, a), (1, a^2 + 3), (2, 2a)\} \rightarrow 2asa^2 + 3 \rightarrow a^2 - 2a + 3 = 0$$

$$\rightarrow (a-3)(a-1) = 0 \rightarrow \boxed{a=1, a=3}$$

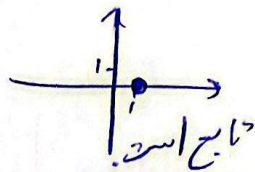
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الف) $|y| = |x| \rightarrow y = |x|$



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ب) $|y| + \sqrt{x-1} = 0 \rightarrow x \geq 1, y = 0$
 هر دو عبارت + هستند
 حتی نقطه تقاطعش صفر است



الف) $|y-1| = \sqrt{x-2} \rightarrow x \geq 2$ اگر $x=2$ $|y-1| = 0 \rightarrow y=1$
 اگر $x > 2$ $|y-1| = \sqrt{x-2} \rightarrow y-1 = \pm \sqrt{x-2} \rightarrow y = 1 \pm \sqrt{x-2}$
 ب) $y^2 = x^2 \rightarrow y = x$ یا $y = -x$ (تابع نیست)

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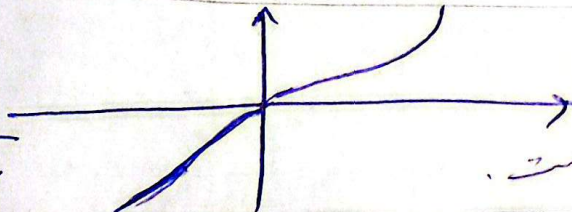
ج) $\sin^2 x + \cos^2 \frac{y}{2} = 1 \rightarrow \sin^2 x = 0, \cos^2 \frac{y}{2} = 1 \rightarrow \frac{y}{2} = 0, \pi, 2\pi, \dots \rightarrow y = 0, 2\pi, 4\pi, \dots$
 د) $2xy = x \rightarrow x=0$ یا $2y=1 \rightarrow y=\frac{1}{2}$ (تابع نیست)

الف) $x^2 + |y-1| = 2x \rightarrow x^2 - 2x = -|y-1| \rightarrow x^2 - 2x + 1 = 1 - |y-1| \rightarrow (x-1)^2 = 1 - |y-1|$
 $\rightarrow 1 - |y-1| \geq 0 \rightarrow |y-1| \leq 1 \rightarrow y-1 = \pm 1 \rightarrow y = 2, y = 0$ (تابع نیست)

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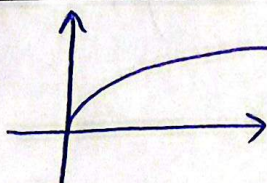
ب) $y^2 + 3x = 0 \rightarrow y^2 = -3x$

$\rightarrow y = \pm \sqrt{-3x}$

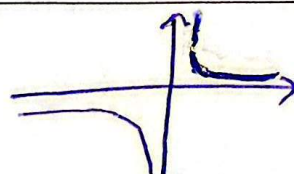


تابع است

الف) $y = \sqrt{x}$

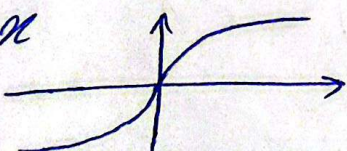


ج) $y = \frac{1}{x^3}$

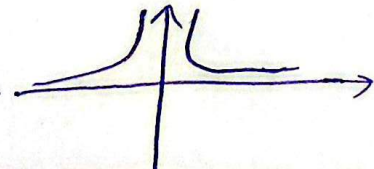


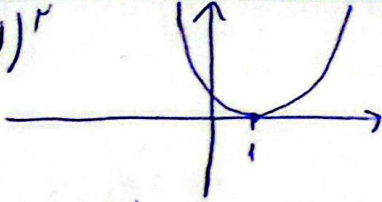
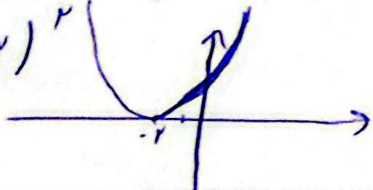
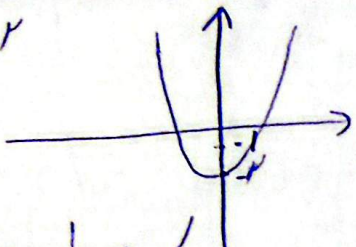
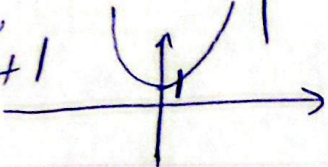
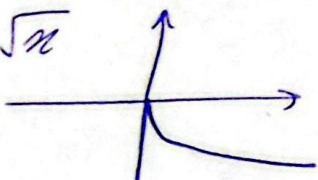
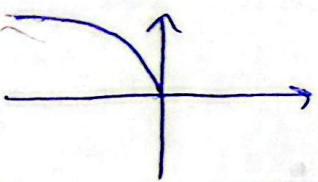
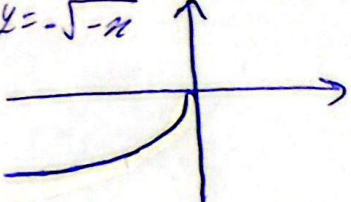
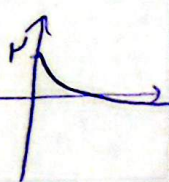
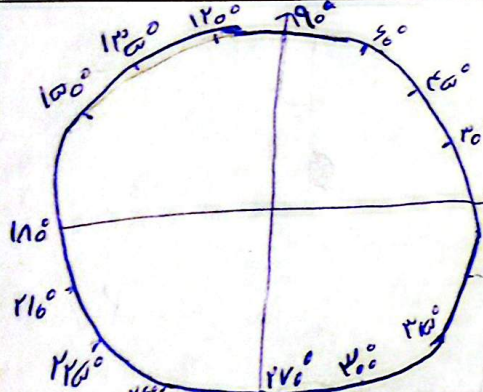
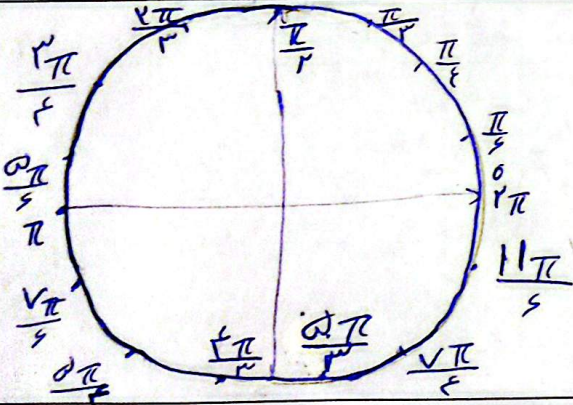
۵

ب) $y = \sqrt[3]{x}$



د) $y = \frac{1}{x^4}$



الف) $y = (x-1)^2$  ب) $y = (x+1)^2$ 	ج) $y = x^2 - 2$  د) $y = x^2 + 1$ 	٦
الف) $y = -\sqrt{x}$  ب) $y = \sqrt{-x}$ 	ج) $y = -\sqrt{-x}$  د) $y = -\sqrt{x} + 1$ 	٧
	$0^\circ: \begin{matrix} \cos & 1 \\ \sin & 0 \end{matrix}$ $30^\circ: \begin{matrix} \cos & \frac{\sqrt{3}}{2} \\ \sin & \frac{1}{2} \end{matrix}$ $45^\circ: \begin{matrix} \cos & \frac{\sqrt{2}}{2} \\ \sin & \frac{\sqrt{2}}{2} \end{matrix}$ $60^\circ: \begin{matrix} \cos & \frac{1}{2} \\ \sin & \frac{\sqrt{3}}{2} \end{matrix}$ $90^\circ: \begin{matrix} \cos & 0 \\ \sin & 1 \end{matrix}$ $120^\circ: \begin{matrix} \cos & -\frac{1}{2} \\ \sin & \frac{\sqrt{3}}{2} \end{matrix}$ $135^\circ: \begin{matrix} \cos & -\frac{\sqrt{2}}{2} \\ \sin & \frac{\sqrt{2}}{2} \end{matrix}$ $150^\circ: \begin{matrix} \cos & -\frac{\sqrt{3}}{2} \\ \sin & \frac{1}{2} \end{matrix}$ $180^\circ: \begin{matrix} \cos & -1 \\ \sin & 0 \end{matrix}$ $210^\circ: \begin{matrix} \cos & -\frac{1}{2} \\ \sin & -\frac{\sqrt{3}}{2} \end{matrix}$ $225^\circ: \begin{matrix} \cos & -\frac{\sqrt{2}}{2} \\ \sin & -\frac{\sqrt{2}}{2} \end{matrix}$ $240^\circ: \begin{matrix} \cos & -\frac{\sqrt{3}}{2} \\ \sin & -\frac{1}{2} \end{matrix}$ $270^\circ: \begin{matrix} \cos & 0 \\ \sin & -1 \end{matrix}$ $300^\circ: \begin{matrix} \cos & \frac{1}{2} \\ \sin & -\frac{\sqrt{3}}{2} \end{matrix}$ $315^\circ: \begin{matrix} \cos & \frac{\sqrt{2}}{2} \\ \sin & -\frac{\sqrt{2}}{2} \end{matrix}$ $330^\circ: \begin{matrix} \cos & \frac{\sqrt{3}}{2} \\ \sin & -\frac{1}{2} \end{matrix}$ $360^\circ: \begin{matrix} \cos & 1 \\ \sin & 0 \end{matrix}$	٨
		٩
الف) $\cos 120^\circ = -\frac{1}{2}, \sin \frac{\sqrt{3}}{2}$ ج) $\cos \frac{5\pi}{3} = \frac{1}{2}, \sin -\frac{\sqrt{3}}{2}$	ب) $\sin 180^\circ = 0, \cos -\frac{\sqrt{3}}{2}$ د) $\sin \frac{11\pi}{6} = -\frac{1}{2}, \cos \frac{\sqrt{3}}{2}$	١٠