

۱ $a^2 + 3 - 4a = 0 \Rightarrow (a-1)(a-3) = 0 \Rightarrow a=1$
 $\Rightarrow a=3$
 ا. ی. ک. ن. د. معادله ۱ و ۳ را امتحان کنید.

۲ الف) $|y| = |x|$
 در از این معادله می‌توانیم دو جواب پیدا کنیم
 دو جواب می‌دهد و در از این معادله
 معادله ما صفر می‌دهد پس
 تابع نیست.

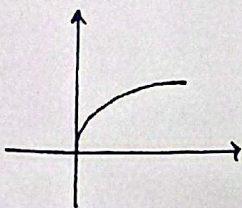
ب) $|y| + \sqrt{x-1} = 0$
 دو عدد نامنفی جمعشان
 صفر شده یعنی هر دو
 صفر هستند و تنها در نقطه
 $x=1$ و $y=0$
 پس تابع نیست.

۳ الف) $|y-1| = \sqrt{x-2} \Rightarrow |y-1| = \sqrt{1} \Rightarrow y-1 = \pm 1 \Rightarrow y=2$
 $\Rightarrow y=0$
 ب) $y^5 - y = \frac{x^2}{y} \Rightarrow y(y^4 - 1) = 0 \Rightarrow y=0$
 $\Rightarrow y=1$
 $\Rightarrow y=-1$
 ج) $\sin^2 x + \cos^2 \frac{y}{2} = 1 \Rightarrow \sin^2 90^\circ + \cos^2 \frac{y}{2} = 1 \Rightarrow 1 + \cos^2 \frac{y}{2} = 1 \Rightarrow \cos^2 \frac{y}{2} = 0$
 $\Rightarrow \cos \frac{y}{2} = 0 \Rightarrow y = \pi$
 $\Rightarrow y = 3\pi$
 د) $2xy = x \Rightarrow y \rightarrow \mathbb{R}$

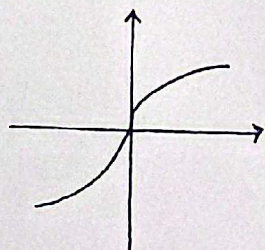
۴ الف) $x^2 + |y-1| = 4x \Rightarrow |y-1| = 4-x \Rightarrow |y-1| = 3 \Rightarrow y-1 = \pm 3 \Rightarrow y=4$
 $\Rightarrow y=-2$
 تابع نیست

ب) $y^5 + 3x = 0$
 $y_1^5 + 3x_1 = 0$
 $y_2^5 + 3x_2 = 0 \rightarrow \text{if } x_1 = x_2 \Rightarrow y_1^5 = y_2^5 \Rightarrow y_1 = y_2$
 تابع هست

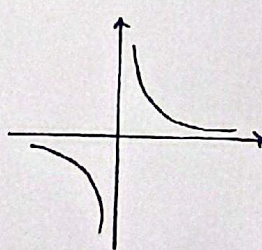
الف) $y = \sqrt[4]{x}$



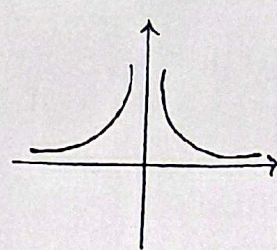
ب) $y = \sqrt[5]{x}$

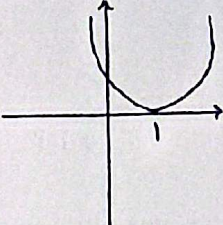
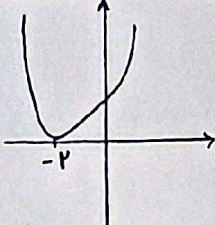
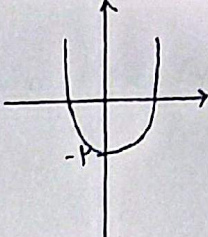
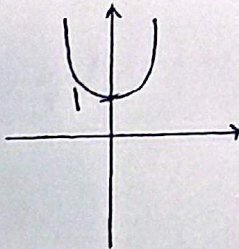
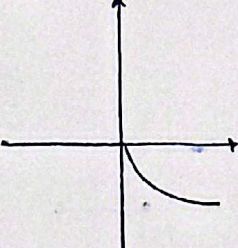
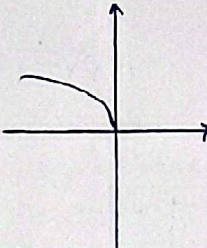
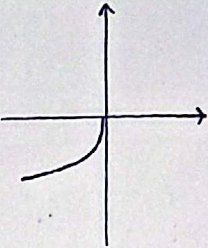
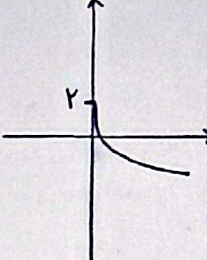
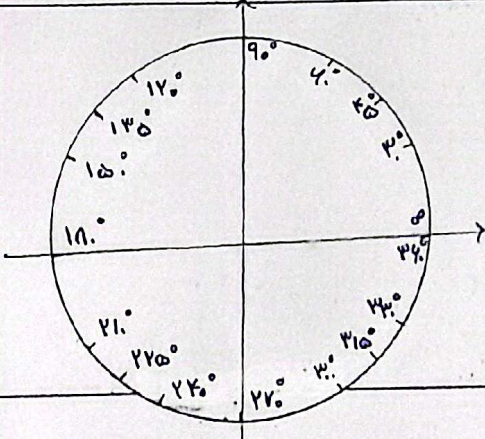
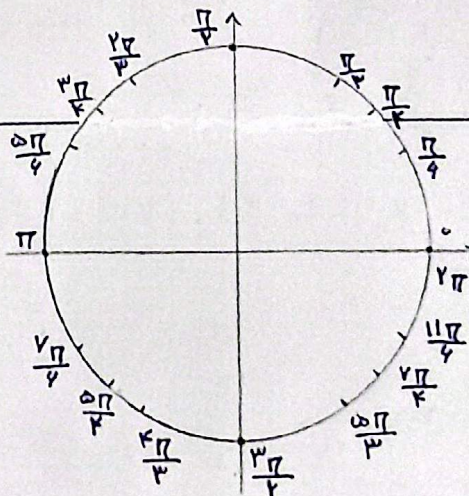


ج) $y = \frac{1}{x^2}$



د) $y = \frac{1}{x^4}$



الف) $y = (x-1)^2$ 	ب) $y = (x+1)^2$ 	ج) $y = x^2 - 2$ 	د) $y = x^2 + 1$ 	٦
الف) $y = -\sqrt{x}$ 	ب) $y = \sqrt{-x}$ 	ج) $y = -\sqrt{-x}$ 	د) $y = -\sqrt{x} + 2$ 	٧
				٨
				٩
الف) $\cos 120^\circ = -\frac{1}{2}$ ب) $\sin 150^\circ = \frac{1}{2}$	ج) $\cos \frac{5\pi}{4} = -\frac{1}{2}$ د) $\sin \frac{11\pi}{4} = -\frac{1}{2}$			١٠