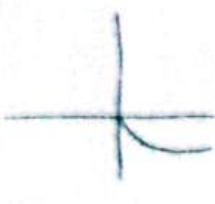
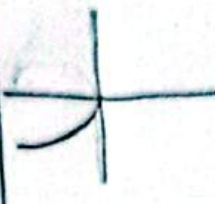
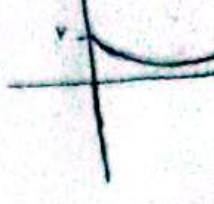
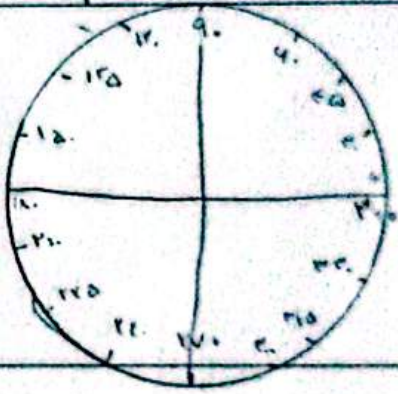
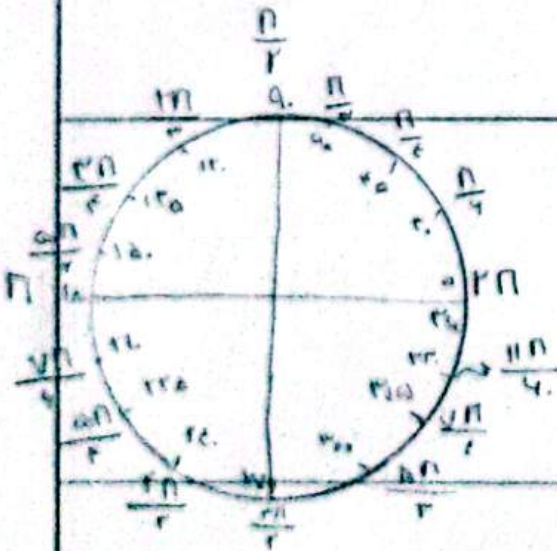


$1) y = (m-1)^2$ 	$2) y = (m+1)^2$ 	$3) y = m^2 - 1$ 	$4) y = m^2 + 1$ 	8
$1) y = -\sqrt{m}$ 	$2) y = \sqrt{-m}$ 	$3) y = -\sqrt{m}$ 	$4) y = -\sqrt{m+1}$ 	9
				10
				11
$1) \cos 120^\circ = -\frac{1}{2}$ $2) \sin 120^\circ = \frac{\sqrt{3}}{2}$	$3) \cos \frac{11\pi}{6} = \frac{1}{2}$ $4) \sin \frac{11\pi}{6} = -\frac{\sqrt{3}}{2}$			12

$$f = \{(1, 4a), (1, a^2 + 3), (2, 3a)\} \quad \begin{aligned} (1, 4 \times 3) &= (1, 12) \\ (1, 3^2 + 3) &= (1, 12) \end{aligned}$$

$$4a = a^2 + 3$$

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

$$a = 3$$

$$0 = (a-1)(a-3) \Rightarrow a=1$$

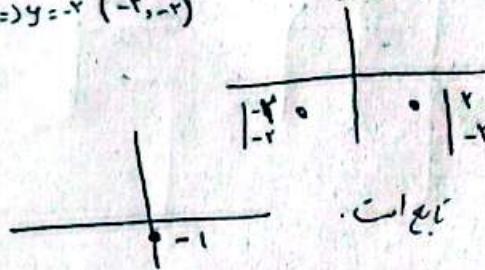
۱

$$|y| = |x| \quad \text{الف}$$

$$\begin{aligned} y = x &\Rightarrow x = 2 \Rightarrow y = 2 \quad (2, 2) \\ y = -x &\Rightarrow x = 2 \Rightarrow y = -2 \quad (2, -2) \end{aligned}$$

در دو نقطه تقاطع می کند پس تابع نیست

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



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$$|y-1| = \sqrt{x-2} \Rightarrow x=0 \Rightarrow |y-1| = \sqrt{-2} \quad \text{تابع نیست چون عدد منفی زیر رادیکال بافرجه زوج قرار نمی گیرد.}$$

$$\text{ب) } y^5 - y = \frac{x^2}{4} \Rightarrow x=0 \Rightarrow \frac{0^2}{4} = 0 \Rightarrow y^5 - y = 0 \Rightarrow y(y^4 - 1) = 0 \Rightarrow y = 0, 1, -1, i, -i$$

۳ تابع نیست

$$\text{ج) } \sin^2 x + \cos^2 \frac{y}{4} = 1 \Rightarrow \sin^2(\frac{\pi}{4}) = 1 \Rightarrow 1 + \frac{\cos^2 y}{4} = 1 \Rightarrow \cos^2 \frac{y}{4} = 0 \Rightarrow \cos \frac{y}{4} = 0 \Rightarrow \frac{y}{4} = \frac{\pi}{2}, \frac{3\pi}{2}, \dots \Rightarrow y = 2\pi, 6\pi, \dots$$

$$\text{د) } x^2 + |y-1| = 4x \quad x=0 \quad x^2 - y + 1 = 4x \Rightarrow 0 - y + 1 = 4x \Rightarrow 1 - 4x = y$$

$$|y-1| = y-1 \quad -y+1 \Rightarrow x^2 + y - 1 = 4x \Rightarrow 0 + y - 1 = 4x \Rightarrow 4x = y - 1$$

$$\text{ب) } y^5 + 4x = 0$$

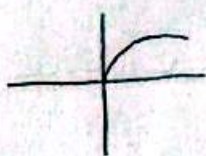
$$x=0$$

$$y^5 = 0$$

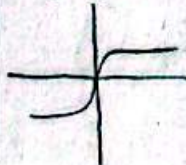
تابع است

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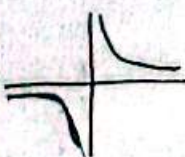
$$\text{الف) } y = \sqrt{x}$$



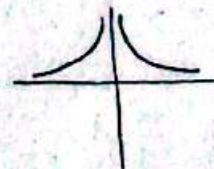
$$\text{ب) } y = \sqrt{x}$$



$$\text{ج) } y = y = \frac{1}{x^2}$$



$$\text{د) } y = \frac{1}{x^2}$$



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