

$$f = \{ (0, 4a), (a^2+3), (1, 3a) \}$$

$$\begin{aligned} 4a &= a^2+3 \\ a^2-4a+3 &= 0 \\ (a-1)(a-3) &= 0 \\ a &= 1, a=3 \end{aligned}$$

$$f = \{ (1, 4), (2, 3) \}$$

$$f = \{ (1, 12), (2, 9) \}$$

$$|y| = |x| \rightarrow y = \pm|x| \rightarrow y = |x|$$



تابع است

$$|y| + \sqrt{x-1} = 0 \rightarrow |y| = -\sqrt{x-1} \quad \begin{cases} x=1 \\ y=0 \end{cases}$$



نقطه یک نقطه

تابع است ✓

$$|y-1| = \sqrt{x-2} \quad x \geq 2 \quad x=3 \rightarrow |y-1|=1 \rightarrow y-1 = \pm 1 \rightarrow y=0, y=2 \quad \times$$

$$y^5 - y = \frac{x^r}{r} \quad x=0 \rightarrow y^5 - y = 0 \rightarrow y(y^4 - 1) = 0 \rightarrow y=0, y=\pm 1 \quad \times$$

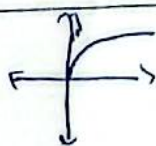
$$2) \sin^2 x + \cos^2 \frac{y}{r} = 1 \quad x=0 \rightarrow \cos^2 \frac{y}{r} = 1 \rightarrow \cos \frac{y}{r} = -1, \cos \frac{y}{r} = +1 \quad \times$$

$$3) 2xy = x \quad x=0 \rightarrow y \text{ هر چه باشد } \times \quad \frac{y}{r} = x, 3\pi, \dots \Rightarrow y = 2x, 4x, \dots / \frac{y}{r} = 0, 2x, 4x, \dots \Rightarrow y=0, 4x, 8x, \dots$$

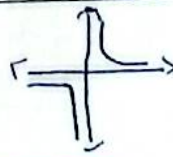
$$|x^2 + |y-1|| = 4x \quad x=1 \rightarrow |y-1|=3 \rightarrow y-1 = \pm 3 \rightarrow y=-2, y=4 \quad \times$$

$$y^5 + 4x = 0 \Rightarrow \begin{cases} y_1^5 + 4x_1 = 0 \\ y_2^5 + 4x_2 = 0 \end{cases} \Rightarrow y_1 = y_2 \rightarrow \sqrt[5]{y_1^5} = \sqrt[5]{y_2^5} \rightarrow y_1 = y_2 \quad \checkmark$$

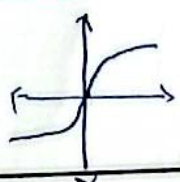
$$y = \sqrt[3]{x}$$



$$y = \frac{1}{x^3}$$



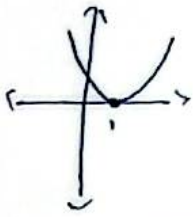
$$y = \sqrt[5]{x}$$



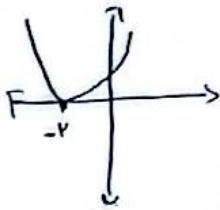
$$y = \frac{1}{x^4}$$



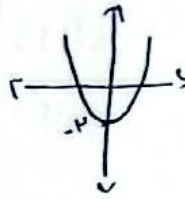
$$\text{ا) } y = (x-1)^2$$



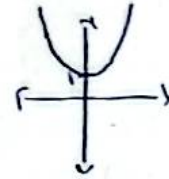
$$\text{ب) } y = (x+2)^2$$



$$\text{ج) } y = x^2 - 2$$

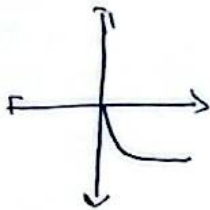


$$y = x^2 + 1$$

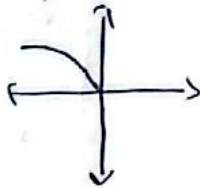


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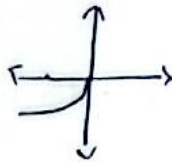
$$\text{ا) } y = -\sqrt{x}$$



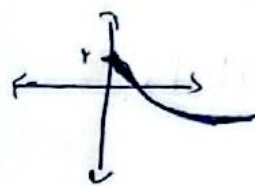
$$\text{ب) } y = \sqrt{x}$$



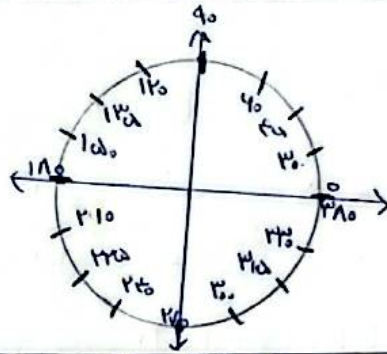
$$\text{ج) } y = -\sqrt{-x}$$



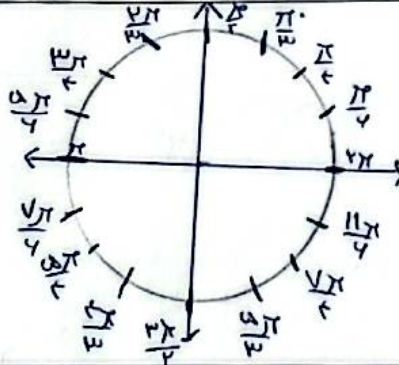
$$y = -\sqrt{x+2}$$



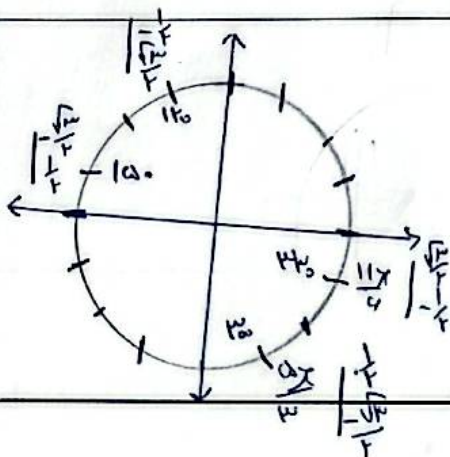
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$$\text{ا) } \cos 120^\circ = -\frac{1}{2}$$

$$\text{ب) } \sin 120^\circ = \frac{\sqrt{3}}{2}$$

$$\text{ج) } \cos \frac{4\pi}{3} = -\frac{1}{2}$$

$$\text{د) } \sin \frac{4\pi}{3} = -\frac{\sqrt{3}}{2}$$

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