

$$fa = a^2 + 3 \Rightarrow fa - a^2 = 3$$

$$a(a - a) = 3 \Rightarrow a = 1 \rightarrow (1, 4)(1, 4)(2, 3)$$

تابع هست ✓

الف) $y = x$ یا $y = -x$



ب) $|y| + \sqrt{x-1} = 0$

$\sqrt{x-1} = 0 \Rightarrow x = 1$
 $|y| = 0 \Rightarrow y = 0$

✓ تابع است

الف) $|y-1| = \sqrt{x-2}$ $x \geq 2 \rightarrow |y-1| = 2 \Rightarrow y-1 = \pm 2 \Rightarrow \begin{cases} y = 3 \\ y = -1 \end{cases}$ تابع نیست

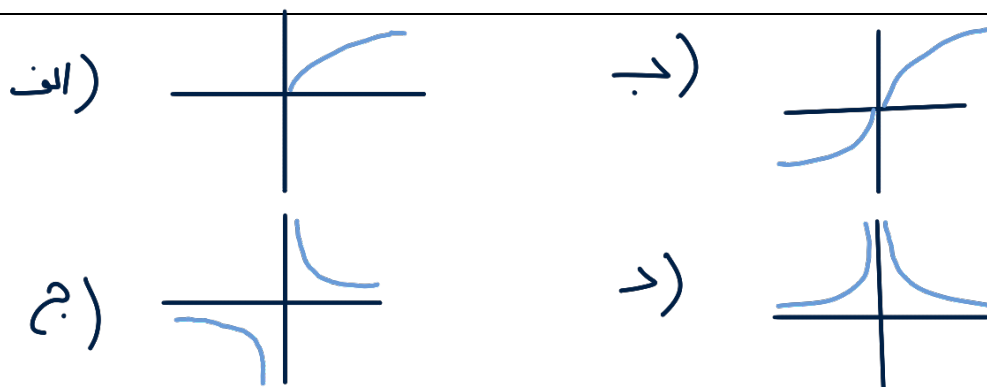
ب) $y^3 - y = \frac{x^2}{4}$ $x \geq 0 \rightarrow y^3 - y = 0 \Rightarrow y = 0 \Rightarrow \begin{cases} y = 1 \\ y = -1 \end{cases}$ تابع نیست

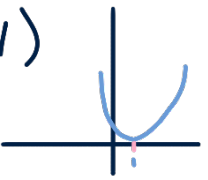
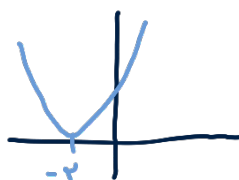
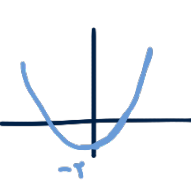
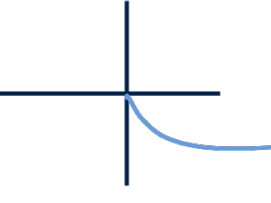
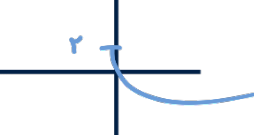
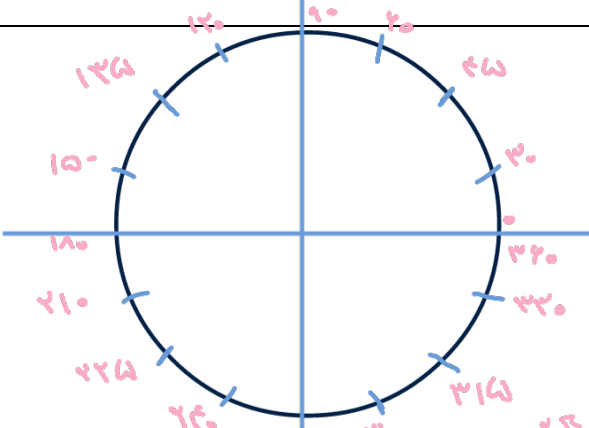
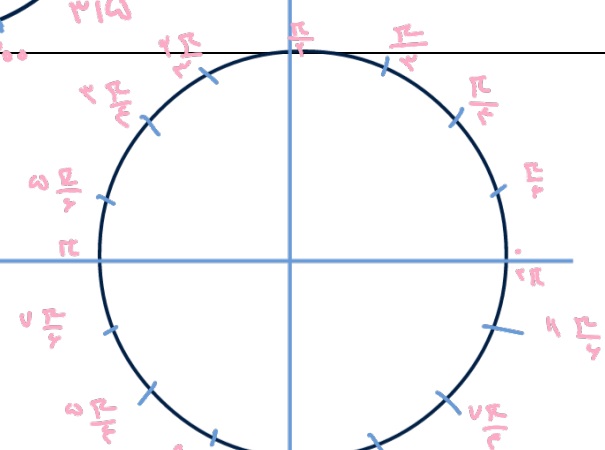
ج) $\sin^2 x + \cos^2 \frac{y}{2} = 1$ $x \geq 0 \rightarrow \cos^2 \frac{y}{2} = 1 \Rightarrow \begin{cases} y = 180^\circ \\ y = 0^\circ \end{cases}$ تابع نیست

د) $2xy = x$ $x \geq 0 \rightarrow y = \frac{1}{2}$ تابع نیست

الف) $|y-1| = x(4-x)$ $x \geq 1 \rightarrow |y-1| = 3 \Rightarrow \begin{cases} y = 4 \\ y = -2 \end{cases}$ تابع نیست

ب) $y^3 + 3x = 0$ $x_1 = x_2 \rightarrow \begin{cases} y_1^3 + 3x_1 = 0 \\ y_2^3 + 3x_2 = 0 \end{cases} \Rightarrow \begin{cases} y_1 = 0 \\ y_2 = 0 \end{cases} \Rightarrow y_1 = y_2 \Rightarrow y = y$ ✓ تابع هست



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الف)  ج)  ب)  د) 	٧
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الف) $-\frac{1}{2}$ ج) $\frac{1}{2}$ ب) $\frac{1}{2}$ د) $-\frac{1}{2}$	١٠