

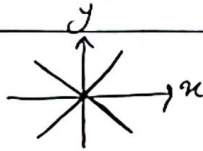
$$f(a) = a^2 + 3$$

$$f(a) - a^2 = 3$$

$$a(f-a) = 3 \Rightarrow a = 3, a = 1$$

۲ ✓

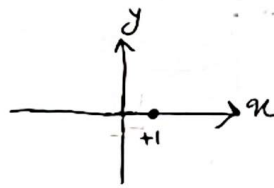
الف) $y = |x|$ و $y = -|x|$



تابع نیست

ب) $|y| = 0 \Rightarrow y = 0$

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



تابع است

۲ ✓

الف) $x = 3 \Rightarrow |y-1| = \sqrt{3-2} \Rightarrow |y-1| = 1 \Rightarrow y-1 = \pm 1$

ب) $x = 0 \Rightarrow y^5 - y = 0 \Rightarrow y(y^4 - 1) = 0 \Rightarrow y = 0, 1, -1$

ج) $x = 0 \Rightarrow \cos^2 \frac{y}{4} = 1 \Rightarrow y = \frac{2\pi}{4} \text{ و } \frac{6\pi}{4}$

د) $x = 0 \Rightarrow y = \infty$

۲ ✓

الف) $|y-1| = 4x - x^2 \Rightarrow |y-1| = x(4-x) \Rightarrow |y-1| = \pm 4$

$\rightarrow x=1$
مثال نقض

* حل به کمک مثال نقض
تابع نیست

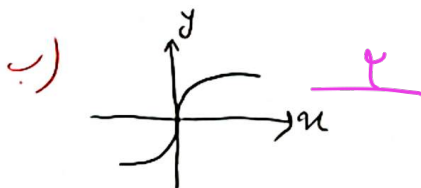
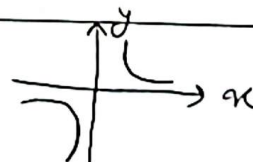
ب) $\left. \begin{array}{l} y_1^{\omega} = -2x_1 \\ y_2^{\omega} = -2x_2 \end{array} \right\} \xrightarrow{x_1=x_2} y_1^{\omega} = y_2^{\omega} \Rightarrow y_1 = y_2$

۲ ✓

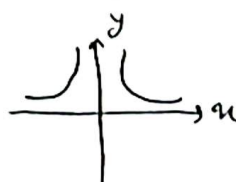
* حل به کمک تعریف ریاضی
تابع است



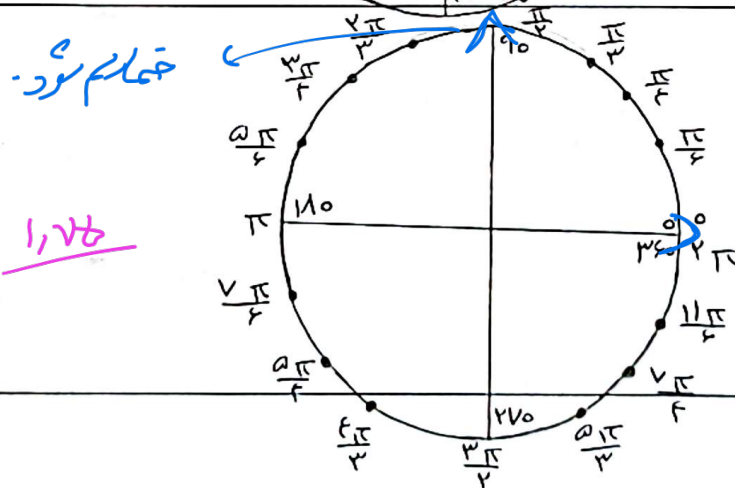
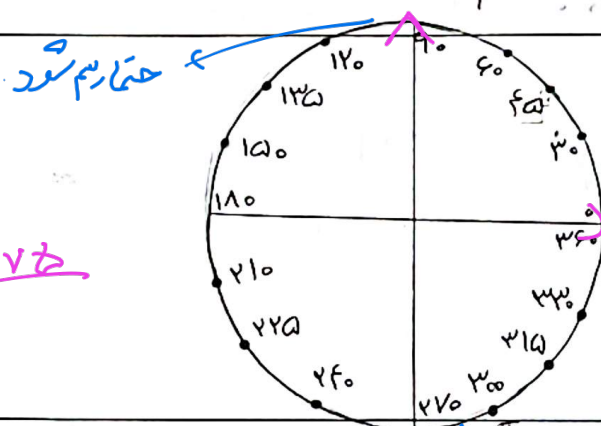
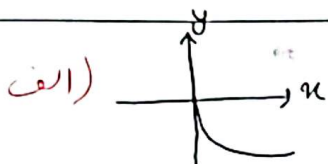
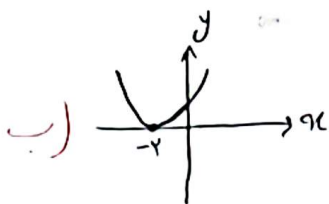
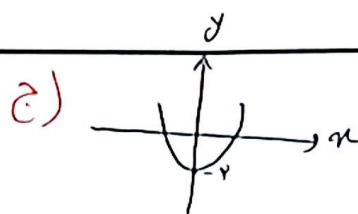
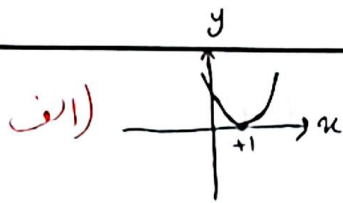
ج)



د)



۵



$-\frac{1}{7}$ (الف)

$$b) \frac{1}{y}$$

c) $\frac{1}{2}$

$$y) - \frac{1}{r}$$