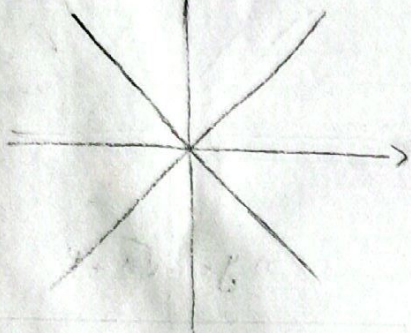


چون در این‌ها اول در ۲ عضو اول برابرند پس در این‌ها دوم هم باید برابر باشند.

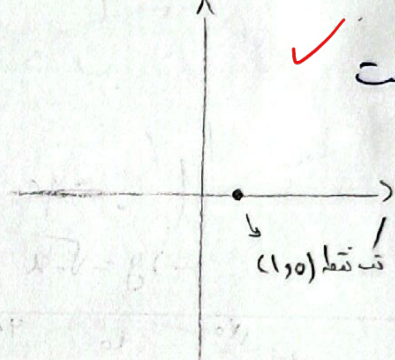
$$a^2 + 3 = 4a \rightarrow a^2 - 4a + 3 = 0 \rightarrow (a-1)(a-3) = 0 \rightarrow \begin{cases} a=1 \\ a=3 \end{cases}$$

الف) $|y| = |x|$



تابع نیست

ب) $|y| + \sqrt{x-1} = 0$



تابع است

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

$|y-1| = 1 \Rightarrow \begin{cases} y=2 \\ y=0 \end{cases}$

ب) $y^5 - y = \frac{x^2}{2} \Rightarrow x=0, \frac{x^2}{2} = 0$

$y(y^4-1) = 0 \Rightarrow y(y^2+1)(y-1)(y+1) = 0$
 $\Rightarrow y=0, y=1, y=-1$

ج) $\sin^2 x + \cos^2 \frac{y}{2} = 1 \Rightarrow x=0$
 $\begin{cases} \cos \frac{y}{2} = +1 \\ \cos \frac{y}{2} = -1 \end{cases}$
 $\sin^2 0 + \cos^2 \frac{y}{2} = 1 \Rightarrow \cos \frac{y}{2} = \pm 1$

د) $\frac{y^2}{x} = \frac{x}{y} \Rightarrow x=0, y \in \mathbb{R}$

هر عددی سادی می‌شود

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

$(x-2)^2 + |y-1| = 4 \Rightarrow x=2, |y-1| = 4$

$y-1 = \pm 4 \Rightarrow \begin{cases} y=5 \\ y=-3 \end{cases}$

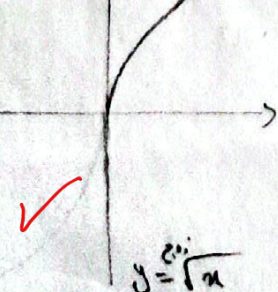
تابع نیست

ب) $y^5 + 3x = 0 \Rightarrow y^5 = -3x$

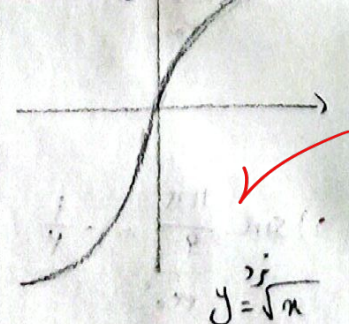
$y^5 = -3x, x = \frac{y^5}{-3} \Rightarrow y = y, y = y$

تابع است

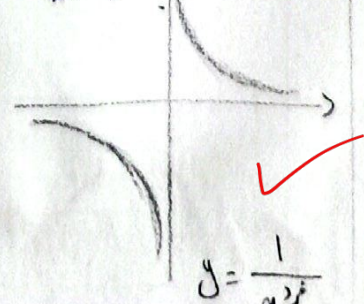
الف) $y = \sqrt{x}$



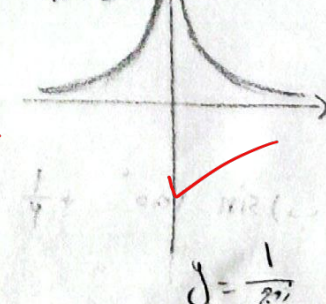
ب) $y = \sqrt{x}$

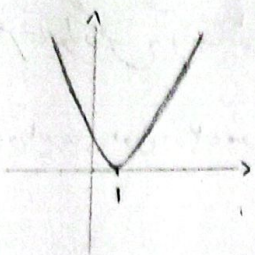


ج) $\frac{1}{x^3} = y$

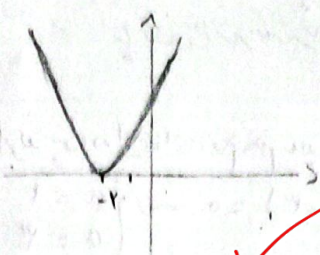


د) $\frac{1}{x^4} = y$

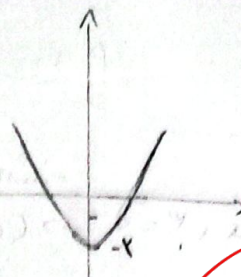




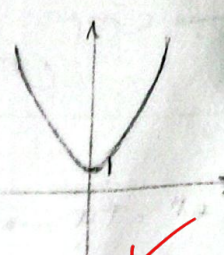
الف) $y = (x-1)^2$ ✓



ب) $y = (x+2)^2$ ✓

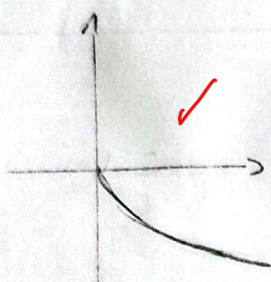


ج) $x^2 - 2 = y$ ✓

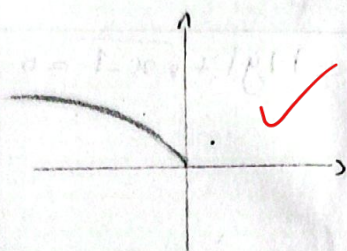


د) $x^2 + 1 = y$ ✓

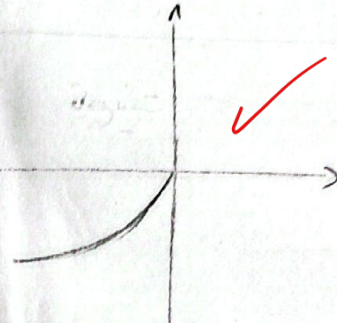
4
2



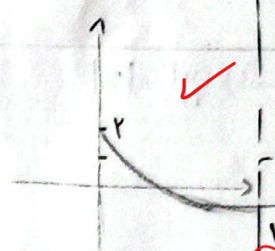
الف) $y = -\sqrt{x}$ ✓



ب) $y = \sqrt{-x}$ ✓

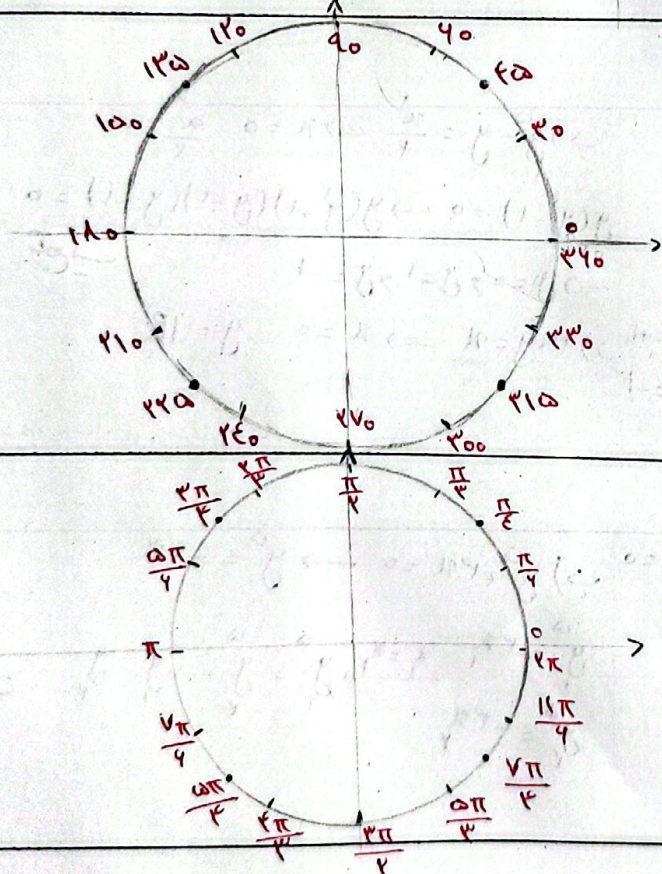


ج) $y = -\sqrt{-x}$ ✓



د) $y = -\sqrt{x} + 2$ ✓

4
4



بر حسب درجه

بر حسب رادیان

2

2

الف) $\cos 120^\circ = -\frac{1}{2}$ ✓

ج) $\cos \frac{5\pi}{3} = +\frac{1}{2}$ ✓

2

ب) $\sin 150^\circ = +\frac{1}{2}$ ✓

د) $\sin \frac{11\pi}{4} = -\frac{1}{2}$ ✓

10