

$$\{(1, a), (1, a^2+3), (2, 3a)\} \rightarrow 2a = a^2+3 \Rightarrow a = \frac{a^2+3}{2} \quad (1)$$

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

$$(الف) |y| = |x| \rightarrow \text{گراف} \quad (2)$$

پایین معادله

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

$$(الف) x=4 \rightarrow |y-1| = \sqrt{4-1} = \sqrt{3} = 2 \rightarrow y=3 \text{ و } y=-1 \quad (3)$$

$$|y-1| = 2 \rightarrow y-1 = \pm 2 \Rightarrow \begin{cases} y=-1 \\ y=3 \end{cases}$$

$$(ب) x=0 \rightarrow y^2 - y = \frac{0^2}{2} = 0 \rightarrow y=1 \text{ و } y=0 \quad (1/8)$$

$$(ج) x = \frac{\pi}{2} \rightarrow \sin \frac{\pi}{2} = 1 \rightarrow 1^2 + \cos^2 \frac{y}{2} = 1 \rightarrow \cos^2 \frac{y}{2} = 0$$

$$y = \frac{\pi}{2} \text{ و } \frac{3\pi}{2} \rightarrow \frac{y}{2} = \frac{\pi}{2} \text{ و } \frac{3\pi}{2} \Rightarrow y = \pi, 3\pi$$

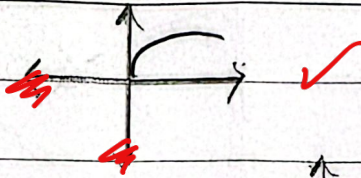
$$(د) x=0 \rightarrow 2x \times y = 0 \rightarrow y \rightarrow \text{هر عددی} \Rightarrow E/R$$

$$(الف) x^2 + |y-1| = 2x \rightarrow x=1 \rightarrow 1 + |y-1| = 2 \rightarrow |y-1| = 1$$

$$y \sim 2 \text{ و } 0 \text{ (تابع نیست)}$$

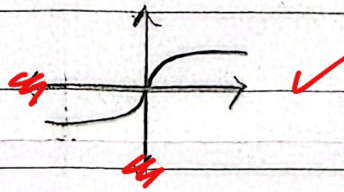
$$(ب) y^2 + 3x = 0 \Rightarrow x = -\frac{y^2}{3} \rightarrow y = y \text{ (تابع است)}$$

الف) $y = \sqrt[3]{x}$



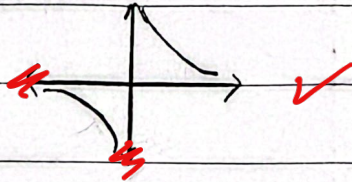
(5)

ب) $y = \sqrt[5]{x}$

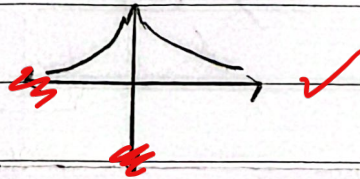


(2)

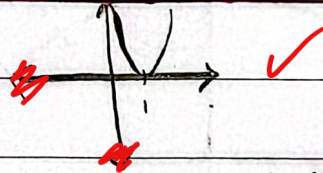
ج) $y = \frac{1}{x^3}$



د) $y = \frac{1}{x^2}$

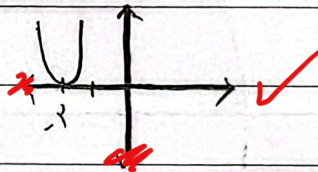


الف) $y = (x-1)^2$



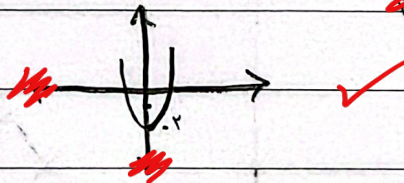
(6)

ب) $y = (x+2)^2$

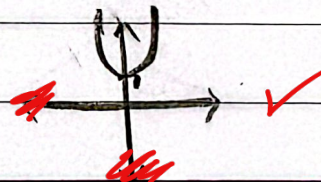


(2)

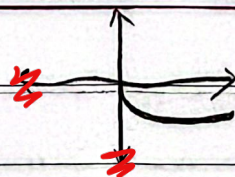
ج) $y = x^2 - 4$



د) $y = x^2 + 1$

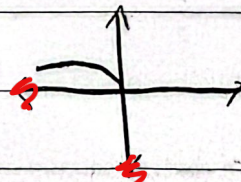


الف) $y = -\sqrt{x}$



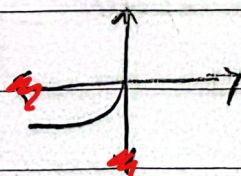
(1)

ب) $y = \sqrt{-x}$

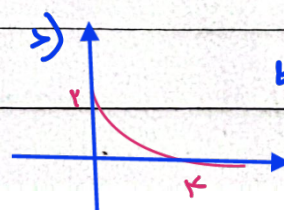
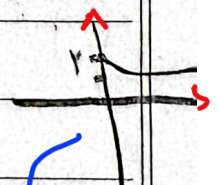


(2)

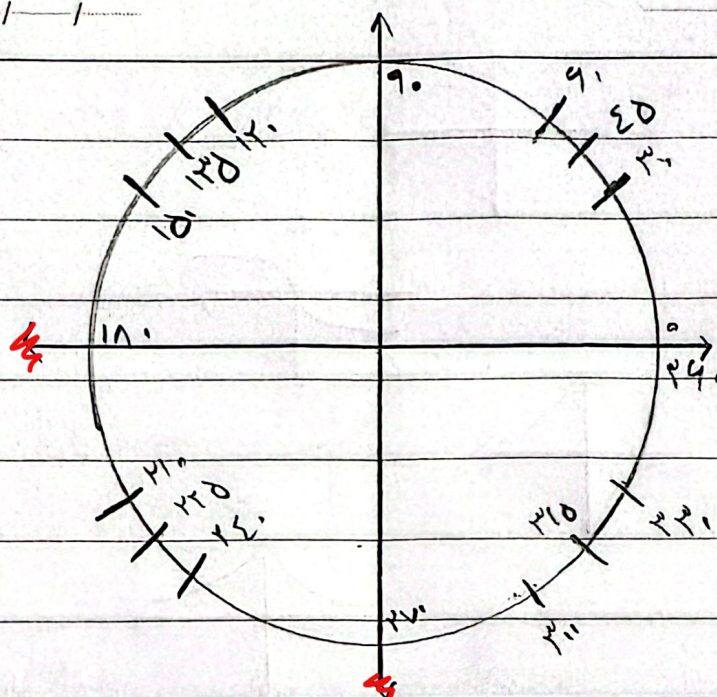
ج) $y = -\sqrt{-x}$



د) $y = -\sqrt{x} + 2$

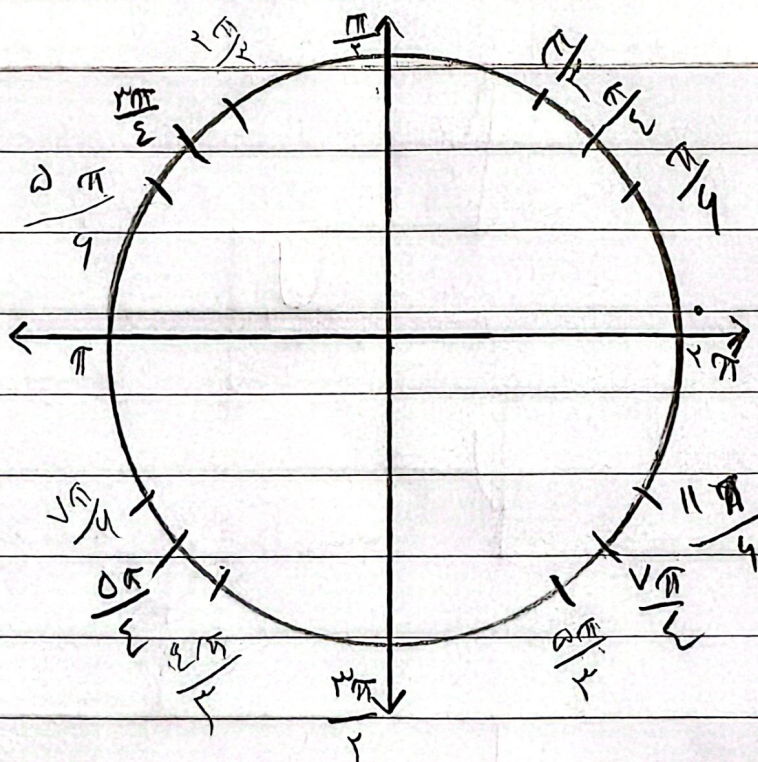


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①

②



③

④

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

ب) $\sin 180^\circ = 0$ ✓

⑤

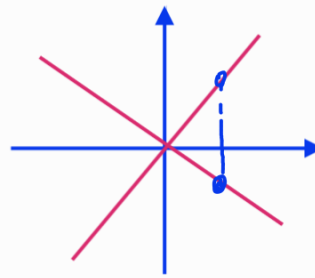
⑥

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

د) $\sin \frac{11\pi}{9} = -\frac{1}{2}$ ✓

سوال ۲

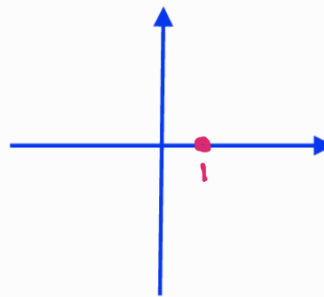
الف) $|y| = |x| \rightarrow y = \pm x$



تابع نیست!

ب) $|y| + \sqrt{x-1} = 0$
 $x-1=0$
 $x=1$

همچ دو عبارت نامنفی برابر با صفر است، پس هر دو نام برابر صفر بوده است.



$f = \{(1,0)\}$

تابع است!