

$$a^2 + 3 = 4a \Rightarrow a^2 - 4a + 3 = 0$$

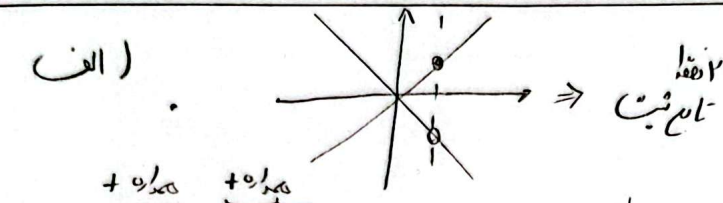
$$a = 1 \Rightarrow \text{در همه موارد}$$

$$a = 3$$

$$f = \{(a, b), (a, c)\}$$

در صورتی تابع است که $b \neq c$ باشد

✓ (۲)



برای تابع بودن در خود را باید خواصی
مورد نظر تنها نقطه را قطع کند پس

ب)

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

$x=1, y=0$



انفک
تابع است

✓ (۲)

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

ب) $y^3 - y = \frac{x^2}{4} \Rightarrow y(y^2 - 1) = 0 \Rightarrow y = 0$
 $y = \pm 1$
 $(y^2 - 1)(y + 1)(y - 1)$

ج) $\sin^2 x + \cos^2 \frac{y}{4} = 1 \Rightarrow 1 + \cos^2 \frac{y}{4} = 1 \Rightarrow \cos^2 \frac{y}{4} = 0$
 $y = \pi, 3\pi, \dots$
 $y = -\pi, -3\pi, \dots$

د) $x \Rightarrow y \in \mathbb{R}$

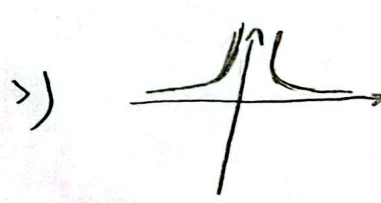
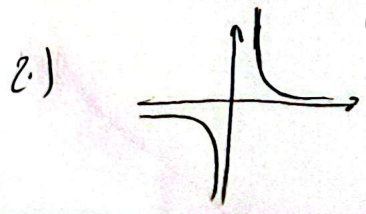
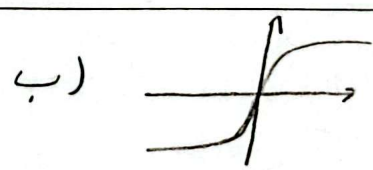
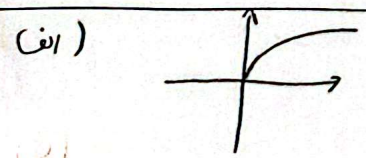
✓ (۲)

الف) $x^2 + |y-1| = 4x \Rightarrow x=1 \Rightarrow |y-1| = 3 \Rightarrow y = 4$
 $y = -2$

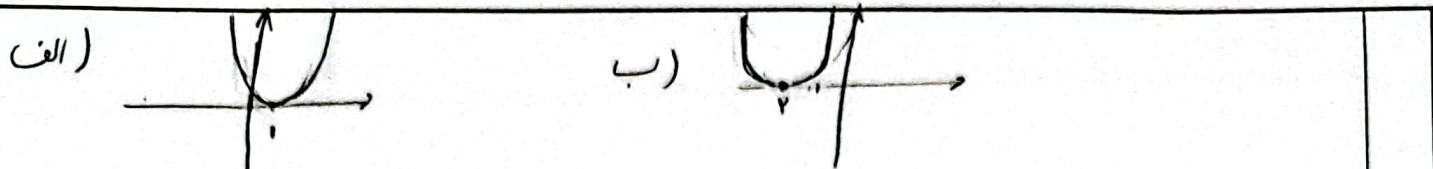
تابع نیست

✓ (۲)

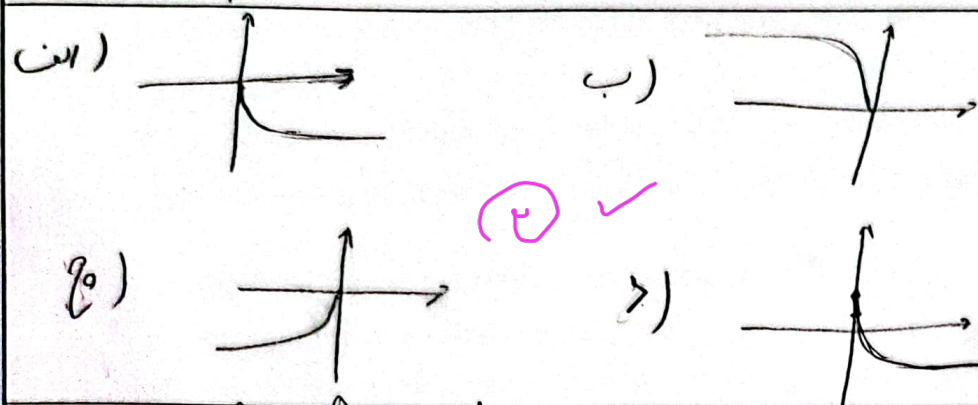
ب) if $(x, y_1) \in f$ and if $(x, y_2) \in f \Rightarrow y_1 = y_2 \Rightarrow y^4 = -3x$
 $y^4 = -3x \Rightarrow y^4 = y^4$ تابع است



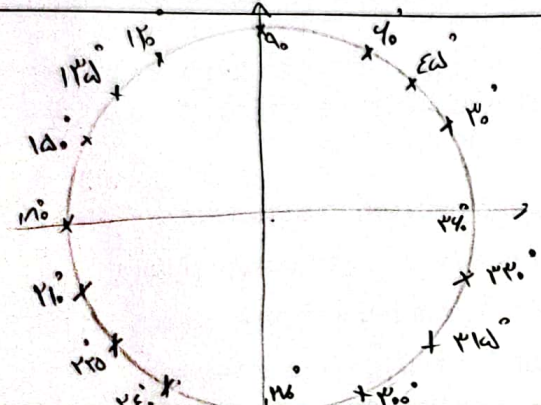
✓ (۲)



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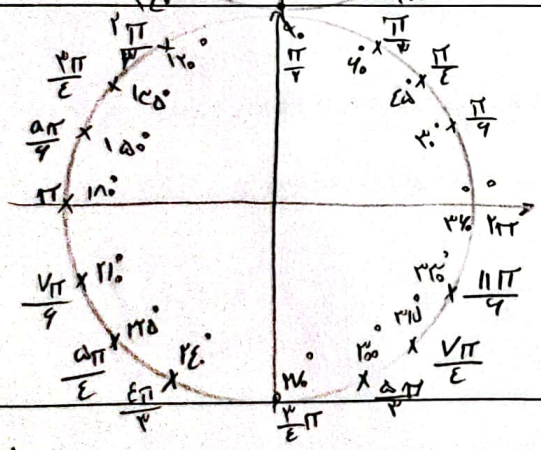


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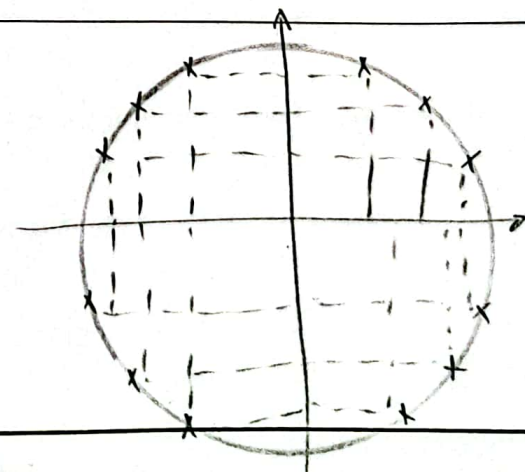
الف) $\cos 180^\circ = -\frac{1}{1}$

ب) $\sin 180^\circ = \frac{1}{1}$

ج) $\cos \frac{5\pi}{4} = \cos 225^\circ = -\frac{1}{\sqrt{2}}$

د) $\sin \frac{11\pi}{4} = \sin 292.5^\circ = -\frac{1}{\sqrt{2}}$

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