

$$f = \{ (0, 4a), (a^2+3), (3, 4a) \}$$

$$\begin{aligned} 4a &= a^2+3 \\ a^2-4a+3 &= 0 \\ (a-1)(a-3) &= 0 \\ a &= 1, a=3 \end{aligned}$$

$$f = \{ (1, 4), (3, 3) \}$$

$$f = \{ (1, 12), (3, 9) \}$$

$$\text{الف) } |y| = |x| \rightarrow y = \pm|x| \rightarrow y = |x|$$



تابع است

$$|y| + \sqrt{x-1} = 0 \rightarrow |y| = -\sqrt{x-1} \quad \begin{cases} x=1 \\ y=0 \end{cases}$$



نقطه یک نقطه

تابع است

$$\text{ب) } |y-1| = \sqrt{x-2} \quad x=3 \rightarrow |y-1|=1 \rightarrow y-1=\pm 1 \rightarrow y=0, y=2 \quad x$$

$$\text{ج) } y^{\omega} - y = \frac{x^r}{r} \quad x=0 \rightarrow y^{\omega} - y = 0 \rightarrow y(y^{\omega-1} - 1) = 0 \rightarrow y=0, y=\pm 1 \quad x$$

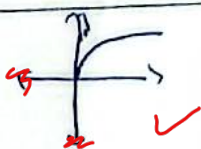
$$\text{د) } \sin^2 x + \cos^2 \frac{y}{r} = 1 \quad x=0 \rightarrow \cos^2 \frac{y}{r} = 1 \rightarrow \cos \frac{y}{r} = -1, \cos \frac{y}{r} = +1 \quad x$$

$$\text{ه) } x y = x \quad x=0 \rightarrow y \text{ هر چه باشد } x$$

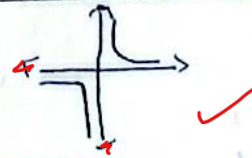
$$\text{و) } x^2 + |y-1| = 4x \quad x=1 \rightarrow |y-1|=3 \rightarrow y-1=\pm 3 \rightarrow y=-2, y=4 \quad x$$

$$\text{ز) } y^{\omega} + kx = 0 \Rightarrow \begin{cases} y_1^{\omega} + kx_1 = 0 \\ y_r^{\omega} + kx_r = 0 \end{cases} \Rightarrow y_1 = y_r \rightarrow \sqrt[\omega]{y_1} = \sqrt[\omega]{y_r} \quad y_1 = y_r \quad \checkmark$$

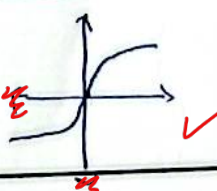
$$y = \sqrt{x}$$



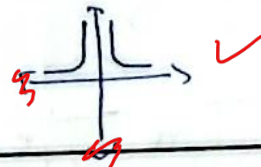
$$y = \frac{1}{x^3}$$



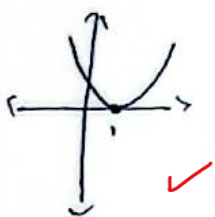
$$y = \sqrt[3]{x}$$



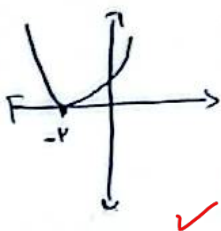
$$y = \frac{1}{x^4}$$



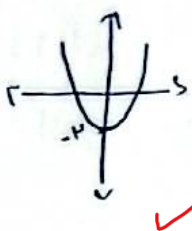
$$الف) y = (x-1)^2$$



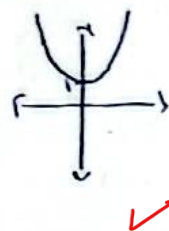
$$ب) y = (x+2)^2$$



$$ج) y = x^2 - 2$$



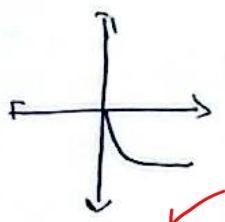
$$y = x^2 + 1$$



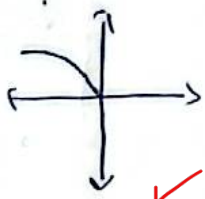
6

(2)

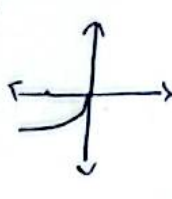
$$الف) y = -\sqrt{x}$$



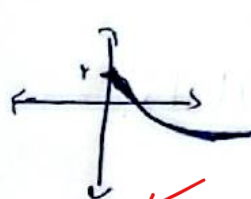
$$ب) y = \sqrt{x}$$



$$ج) y = -\sqrt{-x}$$

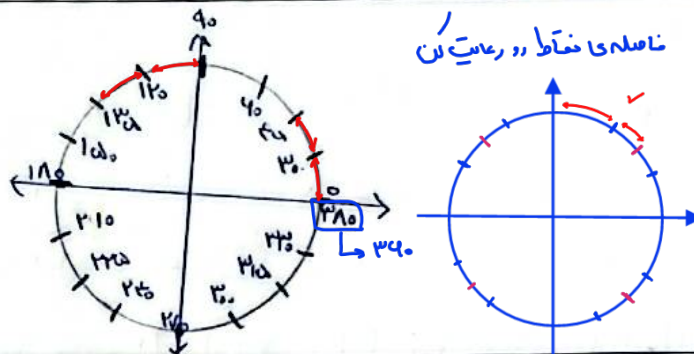


$$y = -\sqrt{x} + 2$$



7

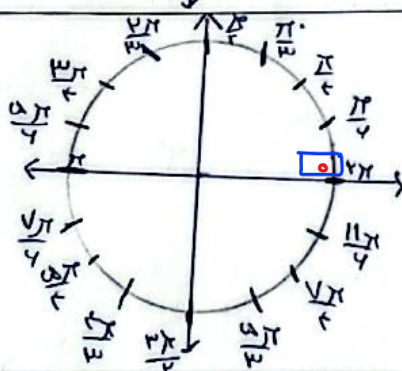
(2)



نقطه‌های نقاط در ربع اول

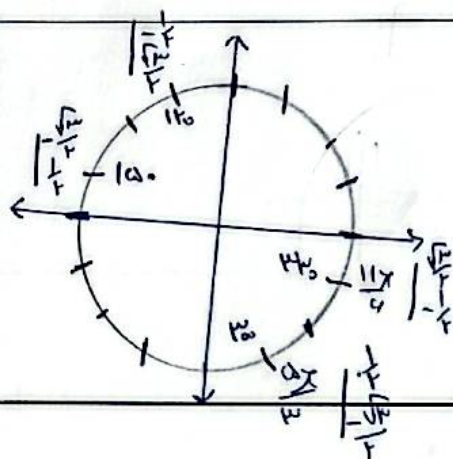
8

(1.5)



9

(1.5)



$$الف) \cos 135^\circ = -\frac{1}{\sqrt{2}}$$

$$ب) \sin 135^\circ = \frac{1}{\sqrt{2}}$$

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

$$د) \sin \frac{5\pi}{4} = -\frac{1}{\sqrt{2}}$$

10

(2)