

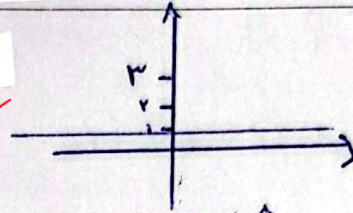
تابع است $\Rightarrow \begin{cases} y_1^3 = 2x_1^2 + x_1 \\ y_2^3 = 2x_2^2 + x_2 \end{cases} \Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$

تابع نیست $\Rightarrow |y| + x^2 = x + 3 \Rightarrow |y| = 1 + 3 - 1 = 3 \Rightarrow \begin{cases} y = 3 \\ y = -3 \end{cases}$

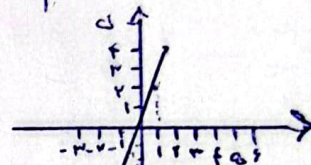
تابع است $\Rightarrow \sqrt{x-4} + |y-2| = 0 \Rightarrow x=4, y=2 \Rightarrow f = \{(4, 2)\}$

تابع نیست $\Rightarrow \begin{cases} y = \frac{x}{3} \\ y = \frac{x}{3} \end{cases}$

الف) $|y| = 3 \Rightarrow y = 1$



ب) $y = 2x$

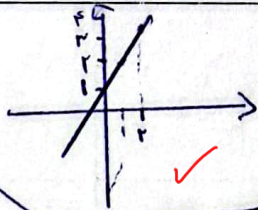


الف) $x = ax + b \Rightarrow a = 1, b = 0 \Rightarrow a + 2b = 1$

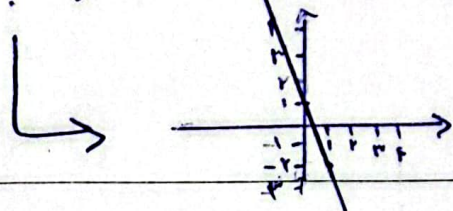
ب) $\frac{x}{3} = \frac{a}{3} = 2 \Rightarrow a = -4 \Rightarrow 1 = 2^2 + (-4)2 + b = 1 = -4 + b \Rightarrow b = 5$

$\Rightarrow a + 2b = -4 + 10 = 6$

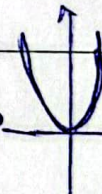
الف) $y = 2x + 1$



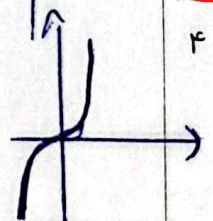
ب) $y = -2x + 1$



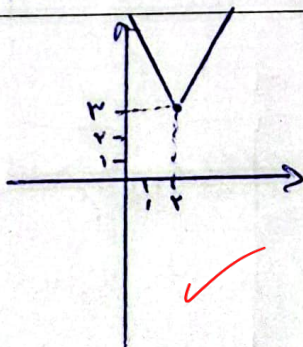
الف) $y = x^2$



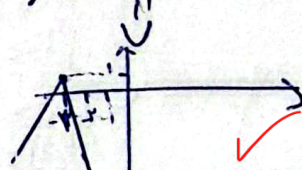
ب) $y = x^3$



الف) $y = |x-2| + 3$



ب) $y = -|x+2| + 1$



$$1) y = \frac{x+f}{x^2-fx} \Rightarrow D_f = \mathbb{R} - \{0, f\}$$

$$2) y = \frac{x+f}{x^2-\sqrt{x+1}f} \Rightarrow x^2-\sqrt{x+1}f \neq 0 \Rightarrow \Delta < 0 \Rightarrow \text{no solution} \Rightarrow D_f = \mathbb{R}$$

$$3) y = \frac{x+f}{x^2+x+f} \Rightarrow x^2+x+f \neq 0 \Rightarrow \Delta < 0 \Rightarrow \text{no solution} \Rightarrow D_f = \mathbb{R}$$

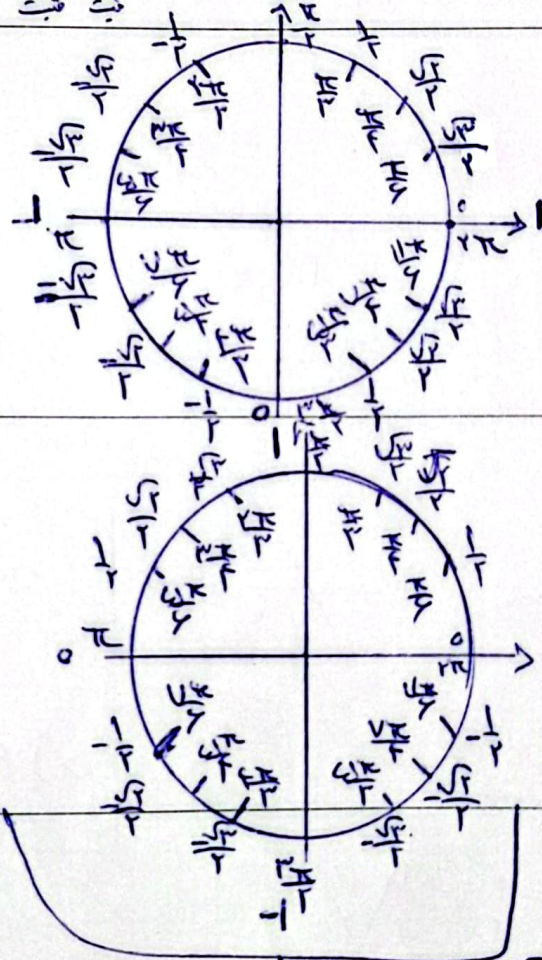
$$4) y = \frac{x+f}{x^2-fx^2} \Rightarrow x^2-fx^2 \neq 0 \Rightarrow D_f = \mathbb{R} - \{-1, 0, 1\}$$

$$5) y = \sqrt{6-x} + \sqrt{x-2} \Rightarrow 4-x \geq 0, x-2 \geq 0 \Rightarrow x \leq 4, x \geq 2 \Rightarrow D_f = [2, 4]$$

$$6) y = \frac{4x+1}{x^2+1} \Rightarrow D_f = \mathbb{R}$$

$$7) y = \frac{\sqrt{x-2}}{x-f} \Rightarrow x-2 \geq 0, x-f \neq 0 \Rightarrow x \geq 2, x \neq f \Rightarrow D_f = [2, \infty) - \{f\}$$

$$8) y = \frac{4x+2}{|x|+x^2} \Rightarrow \frac{|x|}{x^2} + \frac{2}{x^2} \neq 0 \Rightarrow x \neq 0 \Rightarrow D_f = \mathbb{R} - \{0\}$$



$$\cos \frac{\pi}{6} = -\frac{1}{2}$$

$$\Rightarrow \sin x = \frac{1}{2} \Rightarrow x = \left\{ \frac{\pi}{6}, \frac{5\pi}{6} \right\}$$

$$\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2}$$

$$\Rightarrow \sin x = -\frac{\sqrt{3}}{2} \Rightarrow \begin{cases} x = \frac{4\pi}{3} \\ x = \frac{5\pi}{3} \end{cases}$$