

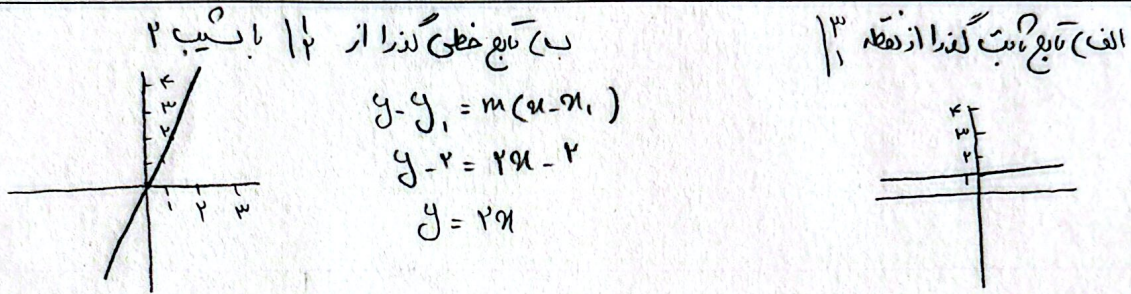
الف) $y^3 - x = 2x^2$
 $y^3 = 2x^2 + x \Rightarrow y = \sqrt[3]{2x^2 + x}$ تابع ✓

ب) $|y| + x^2 = x + 3$
 $y = \pm (-x^2 + x + 3)$ تابع ✗

ج) $\sqrt{x-4} + |y-2| = 0$
 $x-4=0 \Rightarrow x=4 / y-2=0 \Rightarrow y=2$
 نقطه $(4, 2)$ ✓ تابع

د) $x = \cos y$
 $x=1 \Rightarrow y=0, 2\pi, \dots$ تابع ✗

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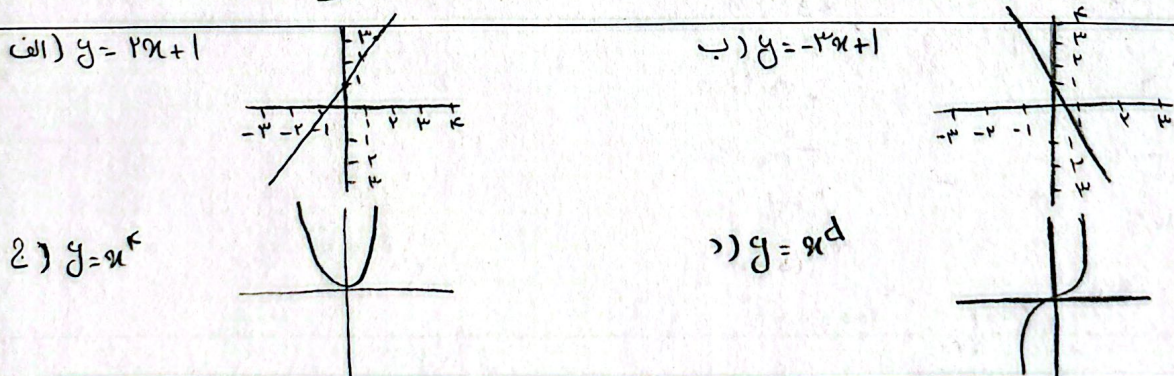


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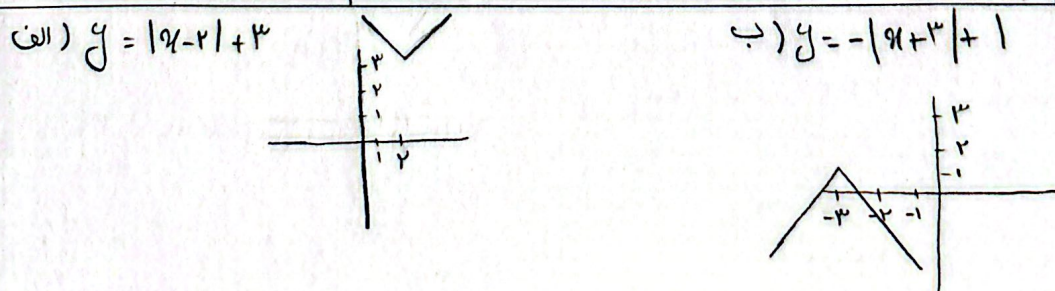
الف) $y = ax + b$ تابع خطی با ۱
 $y = x \Rightarrow a=1 / b=0$
 $a+2b = 1$

ب) $y = x^2 + ax + b$ نقطه صمیم ۱ و ۲
 $x = \frac{-b}{2a} \Rightarrow 2 = \frac{-a}{2} \Rightarrow a = -4$
 $y = x^2 + ax + b$
 $1 = (2)^2 + (-4)(2) + b$
 $1 = -4 + b \Rightarrow b = 5$
 $a+2b = -4+10 = 6$

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

$$x^2-1=0$$

$$x(x-1)=0$$

$$2) y = \frac{x+1}{x^2-4x+4}$$

$$\Delta = 16 - 16 = 0 \quad \text{Geis}$$

$$D_f = \mathbb{R}$$

$$3) y = \sqrt{4-x} + \sqrt{x-2}$$

$$4-x \geq 0 \quad | \quad x-2 \geq 0$$

$$x \leq 4 \quad | \quad x \geq 2$$

$$D_f = [2, 4]$$

$$4) y = \frac{3x+1}{x^2+1} \Rightarrow D_f = \mathbb{R}$$

$$x^2+1 \neq 0 \Rightarrow x^2 \neq -1$$

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

$$\Delta = 4 - 4 = 0 \quad \text{Geis}$$

$$3) y = \frac{x+1}{x^2-1}$$

$$x^2-1=0$$

$$x^2(x-1)=0$$

$$D_f = \mathbb{R} - \{-1, 0, 1\}$$

$$2) y = \frac{\sqrt{x-1}}{x-1}$$

$$x-1 \geq 0 \Rightarrow x \geq 1$$

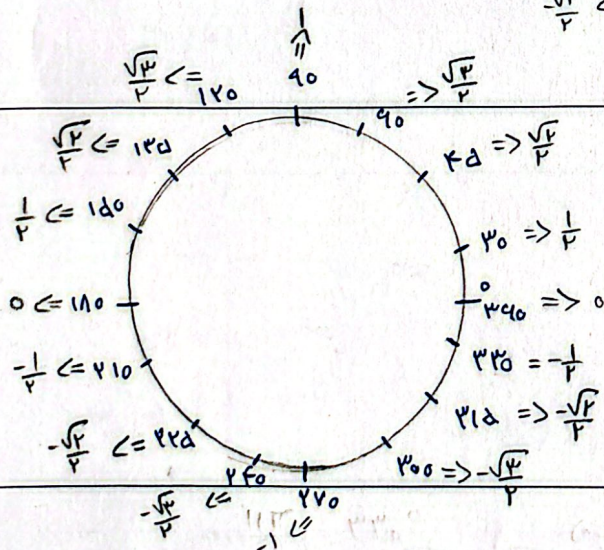
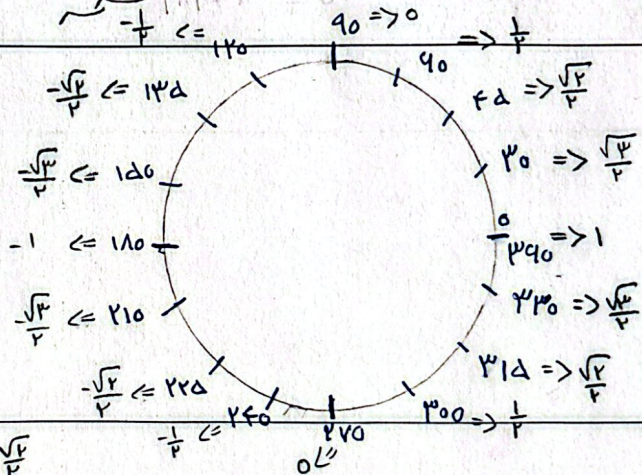
$$x-1 \neq 0 \Rightarrow x \neq 1$$

$$D_f = [1, +\infty) - \{1\}$$

$$3) y = \frac{2x+3}{|x|+x^2}$$

$$|x|+x^2 \neq 0$$

$$D_f = \mathbb{R} - \{0\}$$



$$\frac{11\pi}{4} = 330^\circ$$

$$\cos = \frac{\sqrt{3}}{2} \Rightarrow \frac{\sqrt{3}}{2}$$

$$\sin = \left\{ 2k\pi + \frac{5\pi}{6}, 2k\pi + \frac{11\pi}{6} \right\}$$

$$\frac{2\pi}{3} = 120^\circ$$

$$\cos = -\frac{1}{2} \Rightarrow -\frac{1}{2}$$

$$\sin = \left\{ 2k\pi + \frac{2\pi}{3}, 2k\pi + \frac{4\pi}{3} \right\}$$