

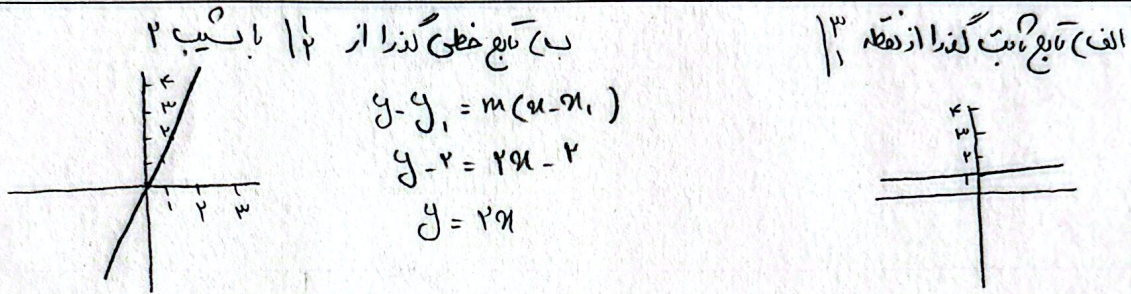
الف) $y^3 - x = 2x^2$
 $y^3 = 2x^2 + x \Rightarrow y = \sqrt[3]{2x^2 + x}$ تابع ✓

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 (۴، ۲) ✓ تابع

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

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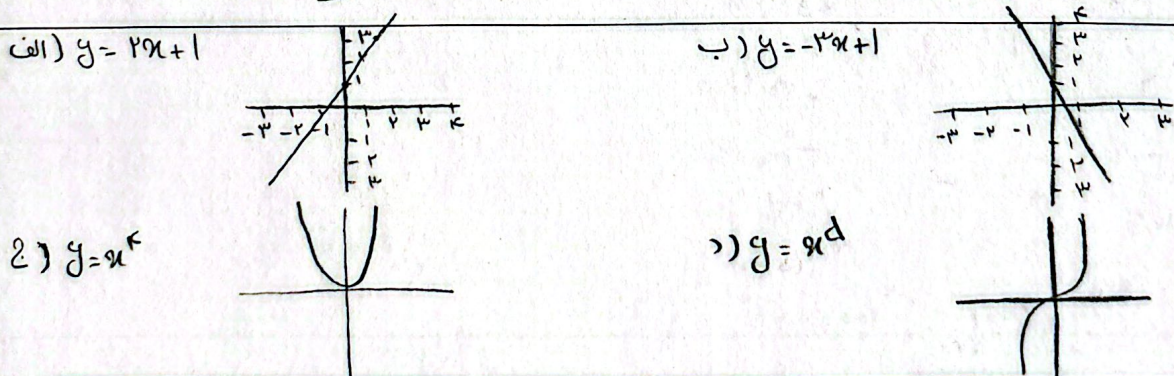


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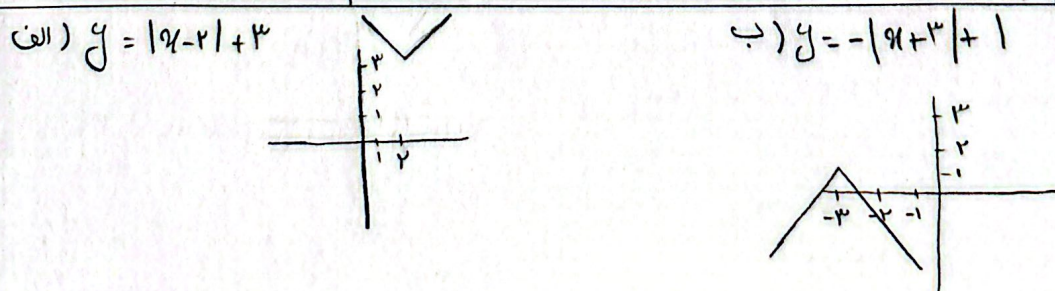
الف) $y = ax + b$ تابع خطی با ۱، ۲
 $y = x \Rightarrow a=1 / b=0$
 $a + 2b = 1$

ب) $y = x^2 + ax + b$ نقطه صمیم ۱، 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) $y = \frac{x+1}{x^2-1}$ $D_f = \mathbb{R} - \{0, 1\}$
 $x^2-1=0$
 $x(x-1)=0$

2) $y = \frac{x+1}{x^2-4x+4}$
 $\Delta = 16-16 = 0$ Geis
 $D_f = \mathbb{R}$

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

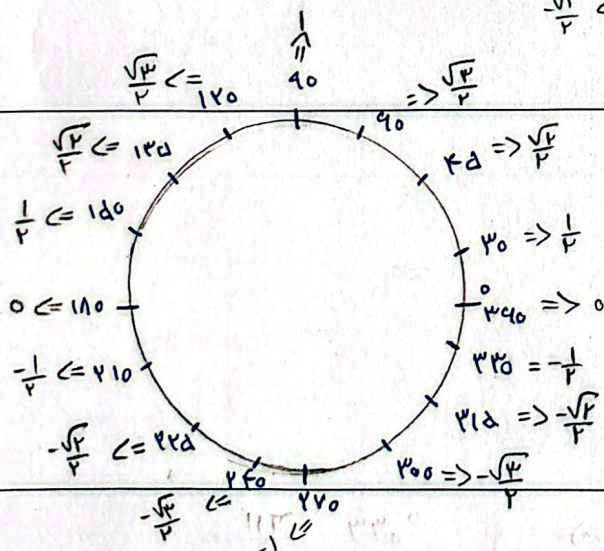
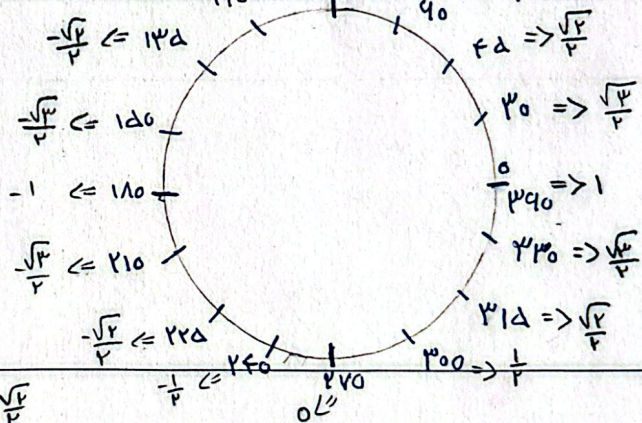
4) $y = \frac{3x+1}{x^2+1} \Rightarrow D_f = \mathbb{R}$
 $x^2+1 \neq 0 \Rightarrow x^2 \neq -1$

5) $y = \frac{x+1}{x^2+2x+1}$ $D_f = \mathbb{R}$
 $\Delta = 4-4 = 0$ Geis

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

7) $y = \frac{\sqrt{x-1}}{x-1}$ $x-1 \geq 0 \Rightarrow x \geq 1$
 $x-1 \neq 0 \Rightarrow x \neq 1$
 $D_f = [1, +\infty) - \{1\}$

8) $y = \frac{2x+3}{|x|+x^2}$ $D_f = \mathbb{R} - \{0\}$
 $|x|+x^2 \neq 0$
 $-\frac{1}{2} \leq 120$ $90 \Rightarrow 0$ $\Rightarrow \frac{1}{2}$



11) $\frac{\pi}{4} = 45^\circ$
 $\cos = \frac{\sqrt{2}}{2} \xrightarrow{\text{مقابل}} \frac{\sqrt{2}}{2}$
 $\sin = \left\{ 2k\pi + \frac{\pi}{4}, 2k\pi + \frac{3\pi}{4} \right\}$

12) $\frac{2\pi}{3} = 120^\circ$ (الق)
 $\cos = -\frac{1}{2} \xrightarrow{\text{مقابل}} \frac{1}{2}$
 $\sin = \left\{ 2k\pi + \frac{\pi}{6}, 2k\pi + \frac{5\pi}{6} \right\}$