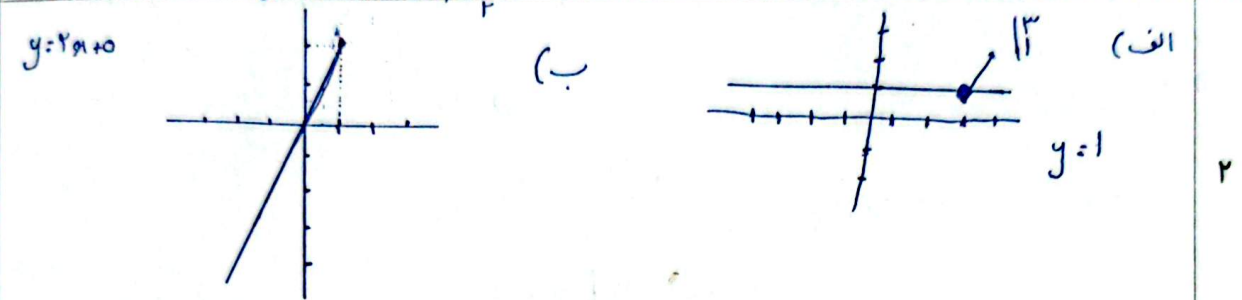


چون $y^3 = x = 2n^2 \Rightarrow y^3 = 2n^2 + n \Rightarrow \begin{cases} y^3 = 2n^2 + n \\ y^3 = 2n^2 + n \end{cases} \xrightarrow{n \cdot n} y^3 = y^3 \Rightarrow y = y$ متنی را قریب نمی آید تابع هست

ب) $|y| + n^2 = n + 3 \xrightarrow{n=0} |y| = 3 \Rightarrow \begin{cases} y = 3 \\ y = -3 \end{cases}$ تابع نیست

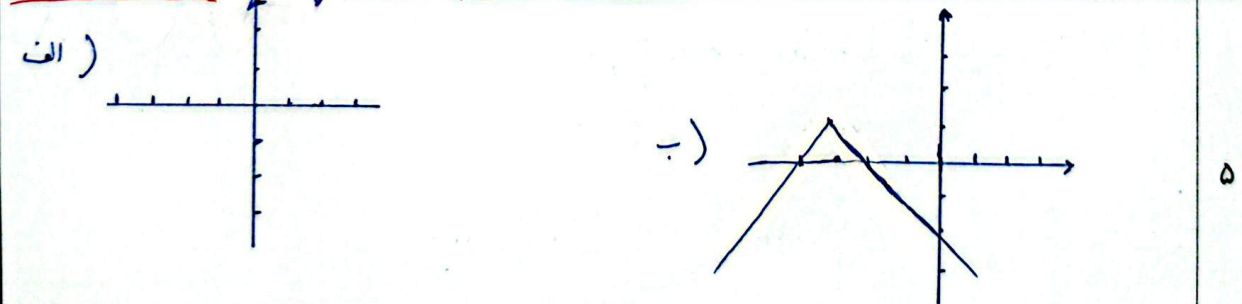
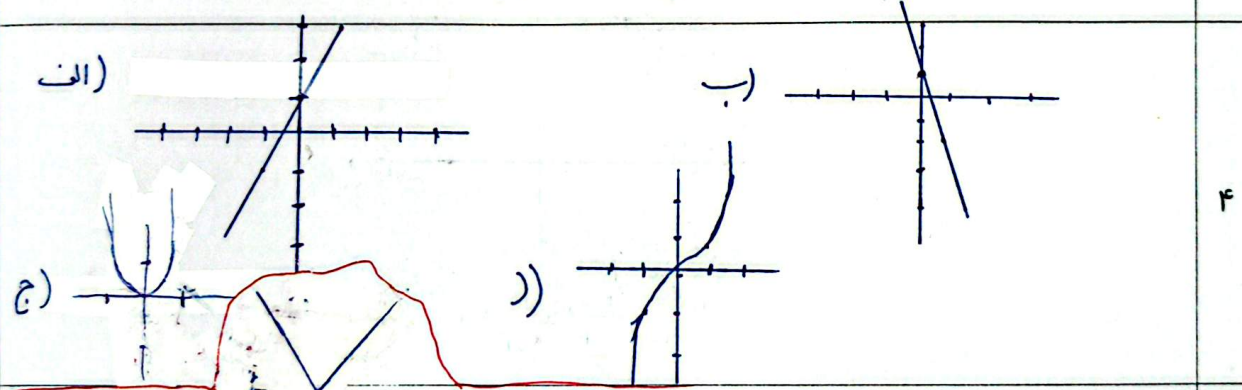
ج) $\sqrt{x-4} + |y-2| = 0 \Rightarrow \begin{cases} x=4 \\ y=2 \end{cases}$ تابع هست
پس هر دو عدد ی باشند

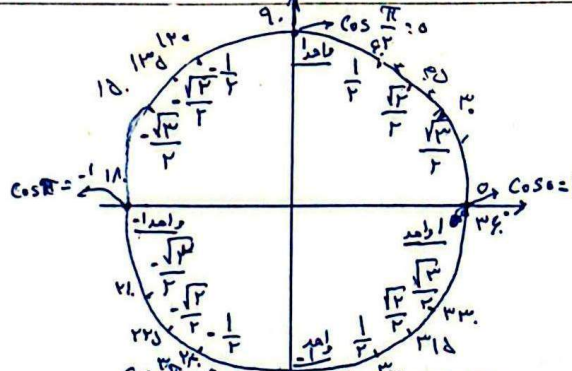
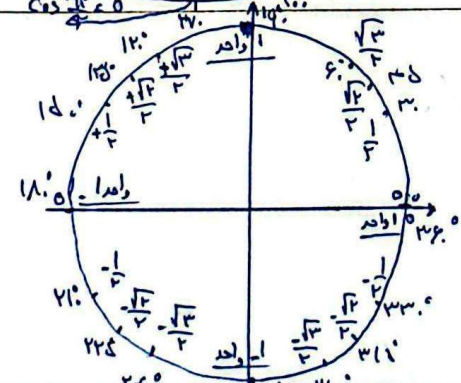
د) $x = \cos y \Rightarrow \cos y = 0 \Rightarrow y = \frac{\pi}{2}, \frac{3\pi}{2}, \dots$



الف) تابع حتمی $y = n \Leftrightarrow a=1, b=0 \Leftrightarrow y = ax + b$ $a+2b=1$

$\min |y| \Rightarrow \begin{cases} y = \frac{-a}{2} \Rightarrow a = -4 \\ 1 = \frac{y^2 - 4b}{-4} \Rightarrow \frac{16 - 4b}{-4} = 1 \Rightarrow 16 - 4b = -4 \Rightarrow 4b = 20 \Rightarrow b = 5 \end{cases}$ $a+2b = -4 + 10 = 6$ ب)



الف) $\Rightarrow x^2 - 4x \neq 0 \Rightarrow x(x-4) \neq 0 \Rightarrow x \neq 0, x \neq 4 \Rightarrow$ تعريف $x \neq 0, x \neq 4$ $\Rightarrow D_f = \mathbb{R} - \{4, 0\}$ ب) $x^2 - 4x + 1 \neq 0 \Rightarrow \Delta = b^2 - 4ac < 0 \Rightarrow D_f = \mathbb{R}$ ج) $x^2 + x + 1 \neq 0 \Rightarrow \Delta = b^2 - 4ac < 0 \Rightarrow D_f = \mathbb{R}$ د) $x^2 - 4x \neq 0 \Rightarrow x(x-4) \neq 0 \Rightarrow \begin{cases} x=0 \\ x=4 \end{cases} \Rightarrow D_f = \mathbb{R} - \{0, 4\}$	6
الف) $9 - x \geq 0 \Rightarrow x \leq 9 \rightarrow (-\infty, 9]$ $x - 2 \geq 0 \Rightarrow x \geq 2 \rightarrow [2, +\infty)$ ب) $x^2 + 1 \neq 0 \Rightarrow x^2 \neq -1 \rightarrow$ حواره x^2 مثبت است $D_f = \mathbb{R}$ ج) $x - 2 \geq 0 \Rightarrow x \geq 2 \rightarrow [2, +\infty)$ $x - 4 \neq 0 \Rightarrow x \neq 4 \rightarrow \mathbb{R} - \{4\}$ د) $x + m^2 \neq 0 \Rightarrow x \neq -m^2 \Rightarrow D_f = \mathbb{R} - \{0\}$	7
	8
	9
الف) $\cos \frac{2\pi}{3} = -\frac{1}{2} \Rightarrow \frac{1}{2} = \sin x \Rightarrow x = \frac{\pi}{6}, \frac{5\pi}{6}, \dots$ ب) $\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2} \Rightarrow \frac{\sqrt{3}}{2} = \sin x \Rightarrow x = \frac{\pi}{3}, \frac{2\pi}{3}, \dots$	10