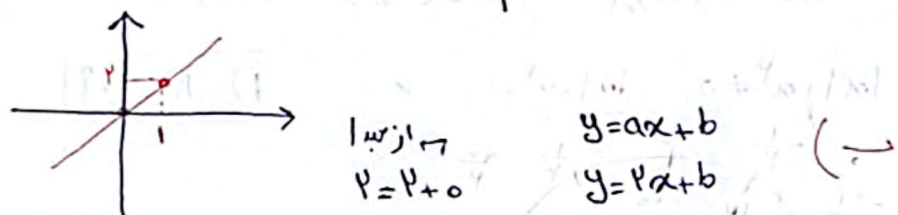
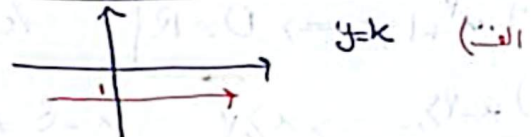


تابع است ✓ برای $y = \sqrt[3]{2x^2 + x}$ داریم $y^3 = 2x^2 + x$ (الف)

تابع نیست ✗ برای $y = \pm (\alpha^3 - \alpha^2)$ داریم $|y| = \alpha + 3 - \alpha^2$ (ب)

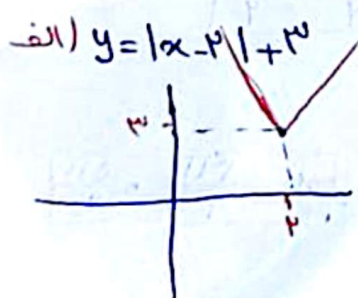
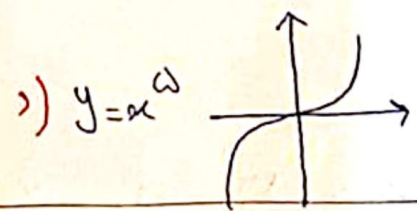
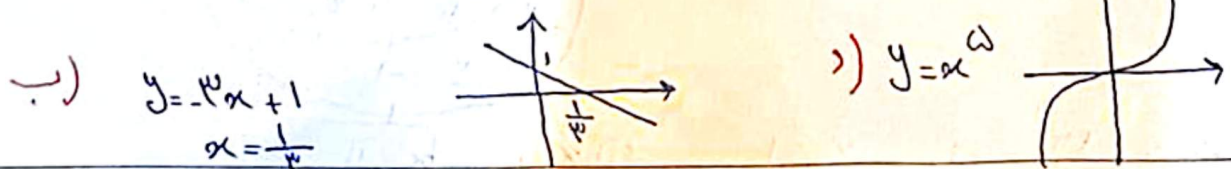
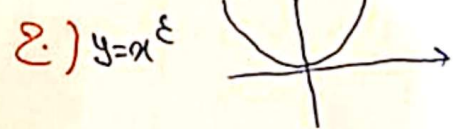
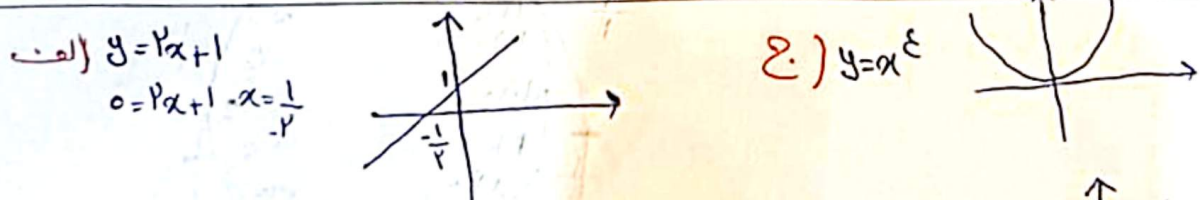
تابع است ✓ $|y - 2| = 0 \rightarrow y = 2$ $\sqrt{x-4} = 0 \rightarrow x = 4$ $\sqrt{x-4} + |y-2| = 0$ (ج)

تابع نیست ✗ $\cos y = 0 \rightarrow y = \frac{\pi}{2}, \frac{3\pi}{2}$ (د)

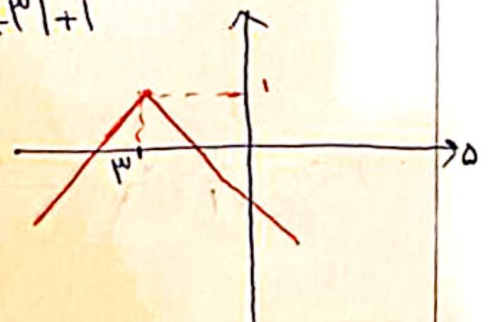


الف) تابع های $y = x$ $y = ax + b$ $a = 1$ $b = 0$ $a + 2b \rightarrow 1 + 2 \times 0 = 1$

ب) $\frac{-b}{2a} = \frac{-a}{2} = 2$ $a = -4$ $a + 2b = -4 + 2(2) = 0$
 $-4 + b = 1$
 $b = 5$



ب) $y = -|x + 3| + 1$



الف) $x^2 - 1x \neq 0$ $x(x-1) \neq 0$ $x \neq 0$
 $x \neq 1$

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

ب) $x^2 - 14x + 49 = 0$ $\Delta = (-14)^2 - 4 \times 1 \times 49 = 196 - 196 = 0$

$D = \{7\}$

ج) $x^2 + x + 1$ $\Delta = 1 - 4 = -3$ $\Delta < 0$ Δ لا يقبل جذور

$D = \mathbb{R}$

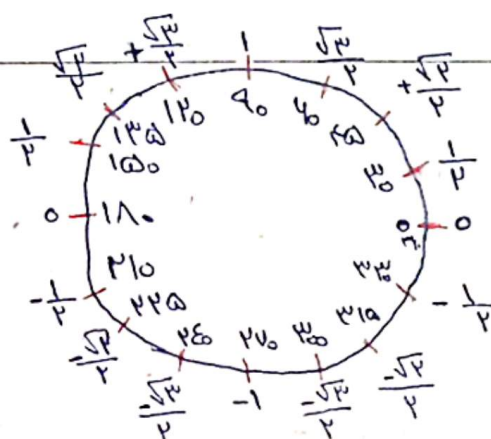
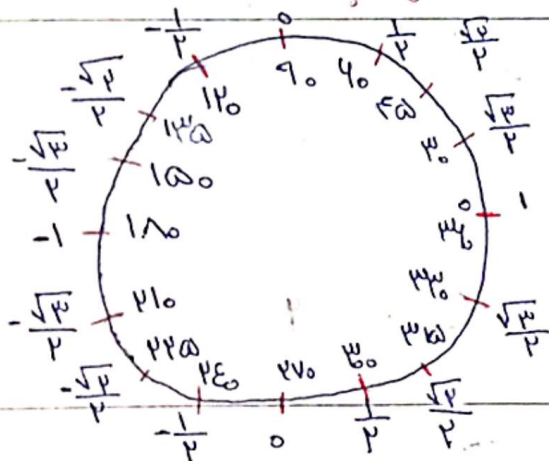
د) $x^2 - 1x^2 \neq 0$ $x^2(x^2 - 1) = x^2(x-1)(x+1)$ $x \neq 0$ $x \neq -1$
 $x \neq 1$ $D = \mathbb{R} - \{-1, 0, 1\}$

هـ) $4 - x > 0 \Rightarrow x < 4$ $x - 1 > 0 \Rightarrow x > 1$ $1 < x < 4$

و) $x^2 + 1 \neq 0 \Rightarrow D = \mathbb{R}$ $x^2 + 1$ لا يقبل جذور

ز) $x - 1 > 0 \Rightarrow x > 1$ $x - 1 \neq 0 \Rightarrow x \neq 1$ $D = (1, \infty) - \{1\}$

ح) $|x| + x^2 \neq 0$ $|x| + x^2 = 0$ $x = 0$ $D = \mathbb{R} - \{0\}$



الف) $\cos \frac{4\pi}{5} = -\frac{1}{5} \xrightarrow{\text{مقابل}} \frac{1}{5}$ $\sin x = \frac{1}{5}$ $x = \frac{\pi}{5}, \frac{4\pi}{5}$

ب) $\cos \frac{11\pi}{5} = \frac{\sqrt{5}}{5} \xrightarrow{\text{مقابل}} -\frac{\sqrt{5}}{5}$ $\sin x = -\frac{\sqrt{5}}{5}$ $x = \frac{7\pi}{5}, \frac{11\pi}{5}$