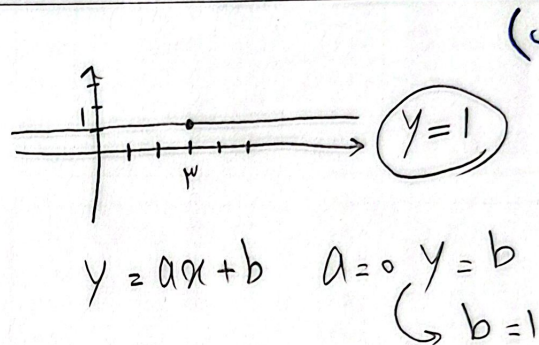
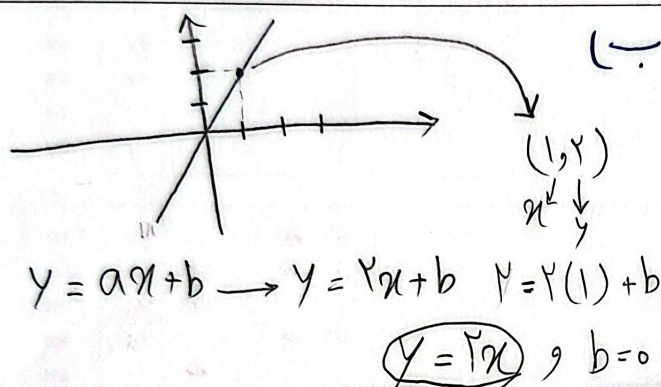
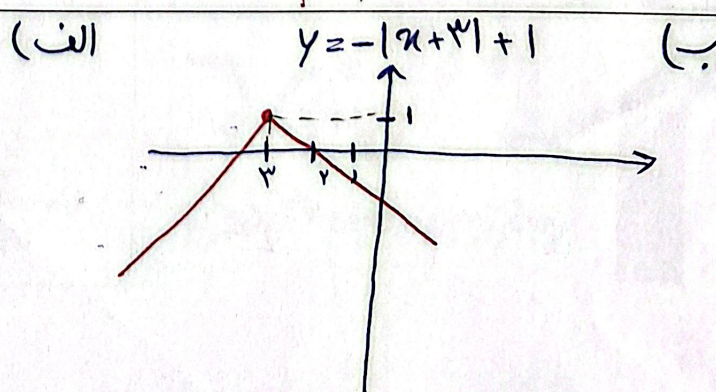
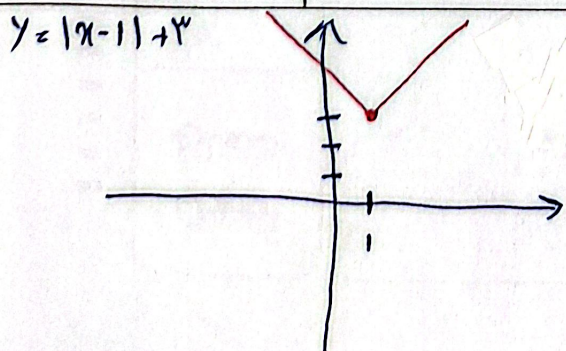
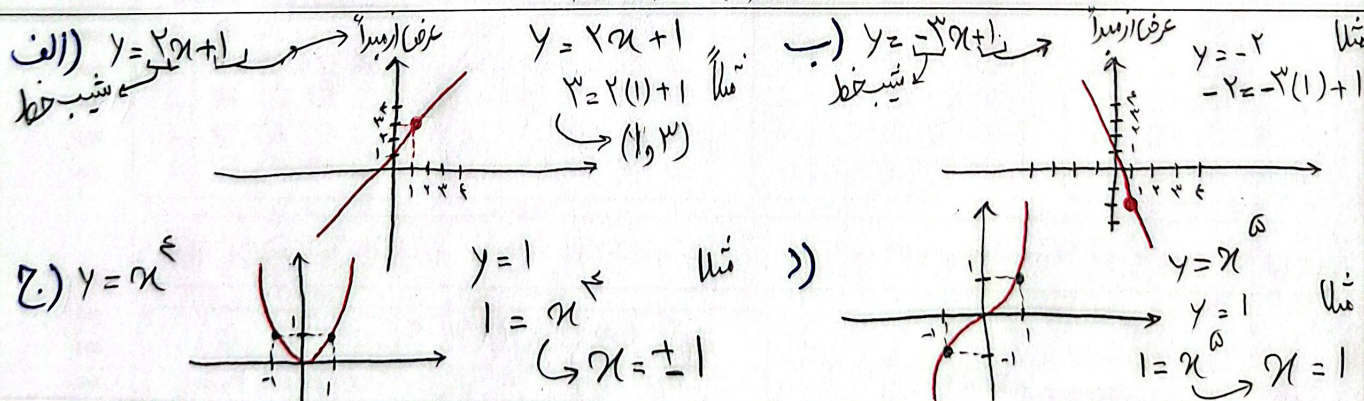


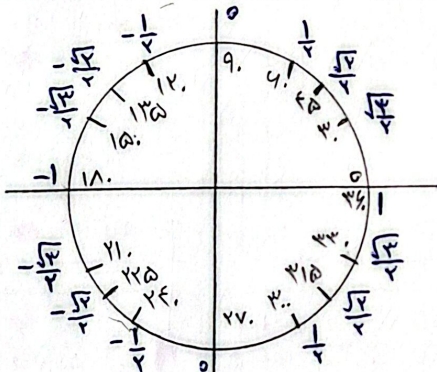
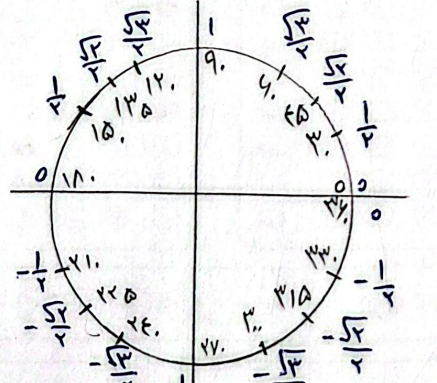
الف) $y^3 - x = 2x^2 \rightarrow y^3 = 2x^2 + x \rightarrow y = \sqrt[3]{2x^2 + x} \rightarrow ((2x^2 + x), (y_1), (y_2))$ اگر $(2x^2 + x)_1 = (2x^2 + 20x)$ $y_1 = y_2$
 ب) $|y| + x^2 = x + 3 \rightarrow |y| = x + 3 - x^2$
 $x=1 \rightarrow |y| = 3 \rightarrow y = \pm 3$ عبارت یک تابع است
 عبارت تابع نیست
 ج) $\sqrt{x-4} + |y-2| = 0$ باید هر دو منفی شوند $x-4 = y-2 = 0 \rightarrow x=4, y=2$ عبارت یک تابع است
 فقط در این نقطه $(4, 2)$
 د) $x = \cos y \rightarrow x=1 \rightarrow \cos y = 1 \rightarrow y = 2k\pi \rightarrow y = 2\pi, 4\pi, 6\pi, \dots$ عبارت تابع نیست



الف) $y = ax + b \xrightarrow[b=0]{\text{مقاله}} y = ax \rightarrow a = 1 \quad a + 2b = 1 + 2(0) = 1$
 $y = x$

ب) $y = x^2 + ax + b$
 $\begin{vmatrix} 1 & a & b \\ 1 & 2 & 1 \end{vmatrix} \rightarrow \begin{vmatrix} -b & 2 \\ -\Delta & 4a \end{vmatrix} \xrightarrow{a=1} \begin{vmatrix} -b & 2 \\ -\Delta & 4 \end{vmatrix} \rightarrow a = -4$
 $\begin{vmatrix} -b & 2 \\ -\Delta & 4a \end{vmatrix} \rightarrow \begin{vmatrix} -b & 2 \\ -\Delta & -4 \end{vmatrix} \rightarrow a = -4$
 $y = x^2 - 4x + b$
 $1 = 1 - 4 + b \rightarrow b = 5$
 $a + 2b = -4 + 10 = 6$



الف) $\frac{x+4}{x^2-4x} \rightarrow \frac{x^2-4x}{x(x-4)}$ $\Delta = b^2-4ac = 16-4 \cdot 4 = -4 < 0$ $\rightarrow$ $Df = \mathbb{R} - \{0, 4\}$ ب) $\frac{x+4}{x^2-7x+12}$ $\Delta = 49-48 = 1 > 0$ $\rightarrow$ $Df = \mathbb{R} - \{2, 5\}$ ج) $\frac{x+4}{x^2+x+4}$ $\Delta = 1-4 = -3 < 0$ $\rightarrow$ $Df = \mathbb{R}$	الف) $\frac{x+4}{x^2-4x} \rightarrow x^2-4x \neq 0$ $\rightarrow$ $x \neq 0, 4$ $\rightarrow$ $Df = \mathbb{R} - \{0, 4\}$ ب) $\frac{x+4}{x^2-7x+12}$ $\rightarrow x^2-7x+12 \neq 0$ $\rightarrow x \neq 2, 5$ $\rightarrow$ $Df = \mathbb{R} - \{2, 5\}$ ج) $\frac{x+4}{x^2+x+4}$ $\rightarrow x^2+x+4 \neq 0$ $\rightarrow$ $Df = \mathbb{R}$
الف) $\sqrt{4-x} + \sqrt{x-2}$ $\rightarrow 4-x \geq 0 \rightarrow x \leq 4$ و $x-2 \geq 0 \rightarrow x \geq 2$ $\rightarrow$ $Df = [2, 4]$ ب) $\frac{x^2+1}{x^2-4}$ $\rightarrow x^2-4 \neq 0$ $\rightarrow x \neq \pm 2$ $\rightarrow$ $Df = \mathbb{R} - \{-2, 2\}$ ج) $\frac{\sqrt{x-2}}{x-4}$ $\rightarrow x-4 \neq 0$ و $x-2 \geq 0$ $\rightarrow$ $Df = [2, 4) \cup (4, +\infty)$ د) $\frac{2x+3}{x^2+x}$ $\rightarrow x^2+x \neq 0$ $\rightarrow x \neq 0, -1$ $\rightarrow$ $Df = \mathbb{R} - \{0, -1\}$	الف) $\sqrt{4-x} + \sqrt{x-2}$ $\rightarrow x \geq 2$ و $x \leq 4$ $\rightarrow$ $Df = [2, 4]$ ب) $\frac{x^2+1}{x^2-4}$ $\rightarrow x^2-4 \neq 0$ $\rightarrow x \neq \pm 2$ $\rightarrow$ $Df = \mathbb{R} - \{-2, 2\}$ ج) $\frac{\sqrt{x-2}}{x-4}$ $\rightarrow x-4 \neq 0$ و $x-2 \geq 0$ $\rightarrow$ $Df = [2, 4) \cup (4, +\infty)$ د) $\frac{2x+3}{x^2+x}$ $\rightarrow x^2+x \neq 0$ $\rightarrow x \neq 0, -1$ $\rightarrow$ $Df = \mathbb{R} - \{0, -1\}$
	8
	9
الف) $\cos \frac{\sqrt{2}\pi}{4} = -\frac{\sqrt{2}}{2}$ $\rightarrow$ $\frac{\sqrt{2}\pi}{4} = \frac{3\pi}{4}, \frac{5\pi}{4}$ ب) $\cos \frac{11\pi}{6} = \frac{\sqrt{3}}{2}$ $\rightarrow$ $\frac{11\pi}{6} = \frac{5\pi}{6}, \frac{7\pi}{6}$	10