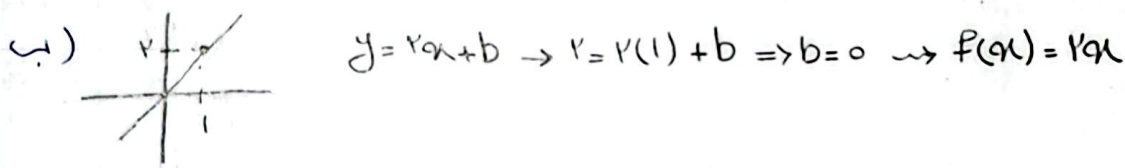
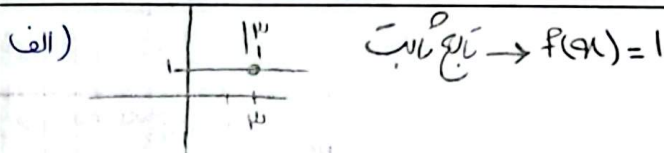


الف) $y^3 - x = 2x^2 \rightarrow y^3 = 2x^2 + x \rightarrow y = \sqrt[3]{2x^2 + x} \rightarrow$ تابع فرد بازای هر x در فرجه y

ب) $|y| + x^2 = x + 3 \rightarrow |y| = -x^2 + 3 + x \xrightarrow{x=1} |y| = -(1)^2 + 1 + 3 = 3 \rightarrow y = \pm 3$ تابع x

ج) $\sqrt{x-4} + |y-2| = 0 \rightarrow \sqrt{x-4} = 0 \rightarrow x=4, |y-2|=0 \rightarrow y=2 \rightarrow \sqrt{\begin{bmatrix} 4 \\ 2 \end{bmatrix}}$ تابع در نقطه $\leftarrow$ هر دو صفر

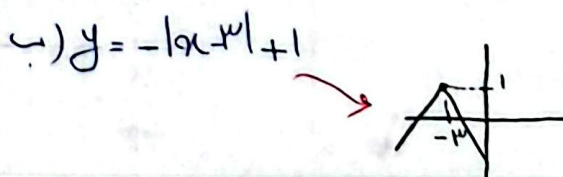
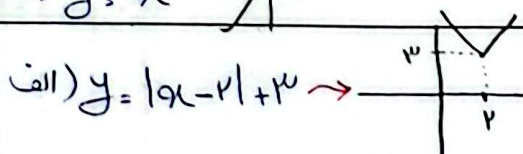
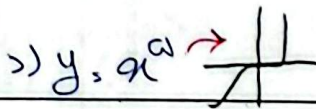
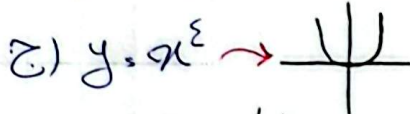
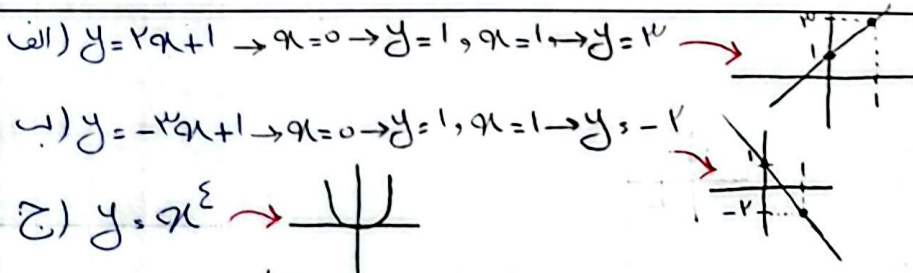
د) $x = \cos y \rightarrow x=0 \rightarrow \frac{3\pi}{2}, \frac{\pi}{2}$ تابع x

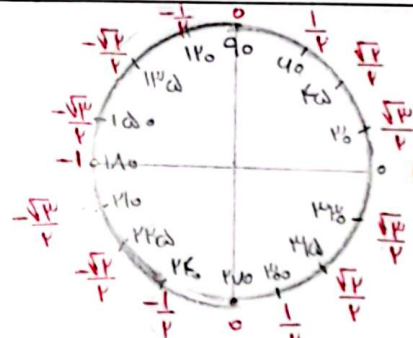
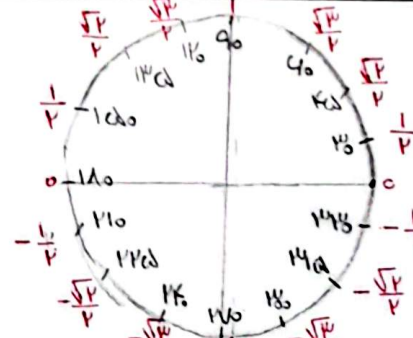


الف) $f(x) = x \rightarrow$ تابع خطی $\rightarrow a + b = 1 + 2(0) = 1$

ب) $\rightarrow$ خط مماس $\rightarrow r = -\frac{a}{f'(1)} \rightarrow r = -\frac{a}{2} \rightarrow a = -2 \rightarrow a + rb = -2 + 2(1) = 0$

$b \rightarrow y = x^2 - 2x + b \rightarrow 1 = 1^2 - f(1) + b \rightarrow 1 = -1 + b \rightarrow b = 2$



الف) $y = \frac{x+2}{x^2-4x} \rightarrow x^2-2x=0 \rightarrow x(x-2)=0 \rightarrow D_f = \mathbb{R} - \{0, 2\}$ ب) $y = \frac{x+4}{x^2-4x+4} \rightarrow x^2-4x+4=0 \rightarrow \Delta = (-4)^2 - 4(1)(4) = 16-16=0 \rightarrow x = \frac{4}{2} = 2$ $\rightarrow D_f = \mathbb{R}$ ج) $y = \frac{x+2}{x^2+x+2} \rightarrow x^2+x+2=0 \rightarrow \Delta = (1)^2 - 4(1)(2) = 1-8 = -7 < 0$ $\rightarrow D_f = \mathbb{R}$ د) $y = \frac{x+2}{x^2-2x} \rightarrow x^2-2x=0 \rightarrow x(x-2)=0 \rightarrow x=0, 2$ $\rightarrow D_f = \mathbb{R} - \{0, 2\}$	۶
الف) $\sqrt{4-x} + \sqrt{x-2} \rightarrow 4-x \geq 0 \rightarrow x \leq 4, x-2 \geq 0 \rightarrow x \geq 2 \rightarrow D_f = [2, 4]$ ب) $\frac{x+1}{x^2+1} \rightarrow x^2+1 > 0$ $\rightarrow D_f = \mathbb{R}$ ج) $\frac{\sqrt{x-2}}{x-2} \rightarrow x-2 \geq 0 \rightarrow x \geq 2, x-2 \neq 0 \rightarrow x \neq 2 \rightarrow D_f = [2, 2) \cup (2, +\infty)$ د) $\frac{2x+3}{ x +x^2} \rightarrow x +x^2 > 0$ $\rightarrow D_f = (-\infty, 0) \cup (0, +\infty)$	۷
 «سینوس»	۸
 «سینوس»	۹
الف) $\cos \frac{7\pi}{3} = -\frac{1}{2} \rightarrow -(-\frac{1}{2}) = \frac{1}{2} \rightarrow \frac{\pi}{3}, \frac{5\pi}{3} \rightarrow 2k\pi + \frac{\pi}{3}$ ب) $\cos \frac{11\pi}{4} = \frac{\sqrt{2}}{2} \rightarrow \frac{\sqrt{2}}{2} \rightarrow \frac{\pi}{4}, \frac{7\pi}{4} \rightarrow 2k\pi + \frac{\pi}{4}, 2k\pi + \frac{7\pi}{4}$	۱۰