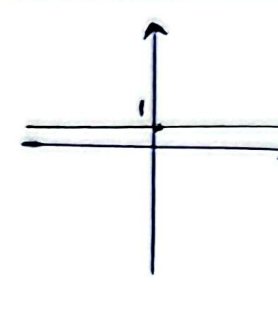
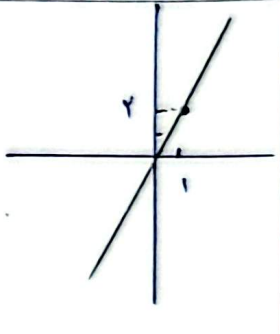
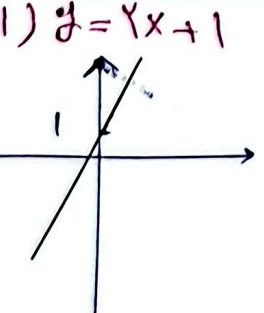
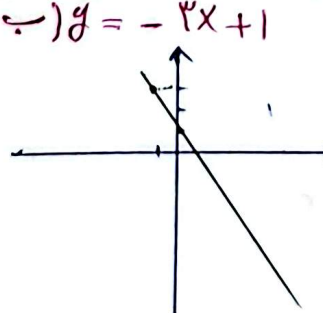
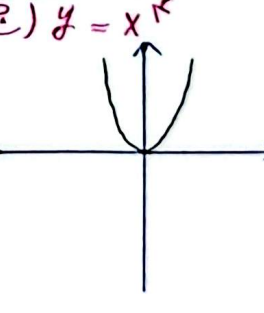
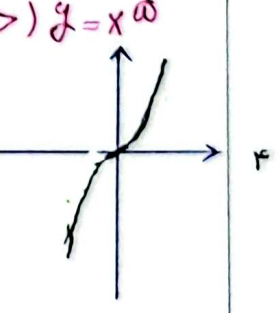
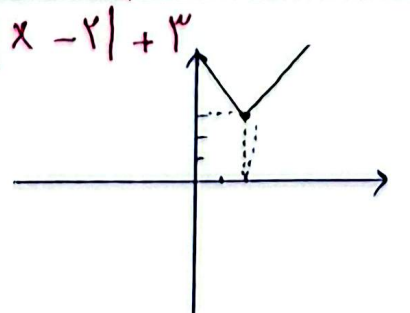
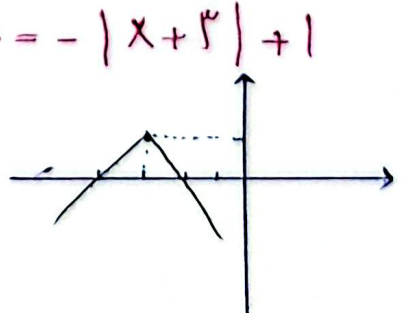


الف) $y^3 - x = 2x^2$ تابع است ب) $y + x^2 = x + 3$ تابع نیست ج) $\sqrt{x-2} + y-2 = 0$ تابع است د) $x = \cos y \xrightarrow{x=\frac{1}{2}} y = \{2k\pi \pm \frac{\pi}{3} k \in \mathbb{Z}\}$	$y_1^3 = 2x_1^2 + x_1$ $y_2^3 = 2x_2^2 + x_2$ $x_1 = x_2 \Rightarrow y_1^3 = y_2^3 \Rightarrow y_1 = y_2$ $\Rightarrow x=0 \Rightarrow y =3 \Rightarrow y=\pm 3$ $\Rightarrow \begin{cases} \sqrt{x-2}=0 \Rightarrow x=2 \\ y-2 =0 \Rightarrow y=2 \end{cases}$	۱		
الف) $y = k$ 	ب) $y = ax + b$ $a=2$ $2 = 2 + b \Rightarrow b=0$ $y = 2x$ 	۲		
الف) $y = ax + b = x \Rightarrow a=1, b=0 \Rightarrow a+2b=1+0=1$ ب) $y = x^2 + ax + b$ $\Delta = a^2 - 4b = 14 - 4b = -4 \Rightarrow b=0$ $a+2b = -4 + 0 = -4$ $Min = \left \frac{-b}{2a} \right = \left \frac{0}{2} \right = 0$ $\Rightarrow \begin{cases} \frac{-a}{2} = 2 \Rightarrow a = -4 \\ \frac{-a}{2} = 1 \Rightarrow a = -2 \end{cases}$ $a+2b = -4 + 0 = -4$		۳		
الف) $y = 2x + 1$ 	ب) $y = -3x + 1$ 	ج) $y = x^2$ 	د) $y = x^3$ 	۴
الف) $y = x - 2 + 3$ 	ب) $y = - x + 3 + 1$ 	۵		

الف) $y = \frac{x+2}{x^2-4x}$ $x^2-4x=0 \Rightarrow x(x-4)=0 \Rightarrow x=0, 4 \Rightarrow Df = R - \{0, 4\}$

ب) $y = \frac{x+2}{x^2-7x+14}$ $\Delta = b^2-4ac \Rightarrow \Delta = 49-4(1)(14) \Rightarrow \Delta = -15 \Rightarrow$ ناقص

$Df = R$

ج) $y = \frac{x+2}{x^2+x+2}$ $\Delta = b^2-4ac \Rightarrow \Delta = 1-4(1)(2) \Rightarrow \Delta < 0 \Rightarrow$ ناقص $Df = R$

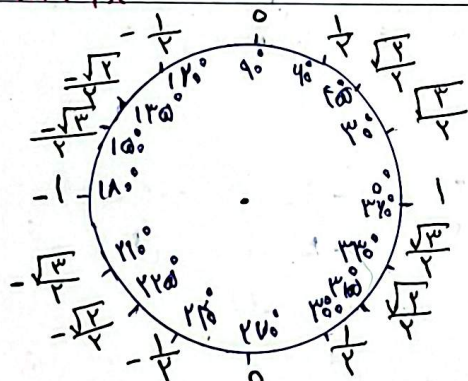
د) $y = \frac{x+2}{x^2-4x^2}$ $\Rightarrow x^2(x-2)(x+2)=0 \Rightarrow \begin{cases} x=0 \\ x=2 \\ x=-2 \end{cases} \Rightarrow Df = R - \{0, 2, -2\}$

الف) $y = \sqrt{4-x} + \sqrt{x-2}$ $-x+4 \geq 0 \Rightarrow 4 \geq x$ و $x-2 \geq 0 \Rightarrow x \geq 2 \Rightarrow Df = [2, 4]$

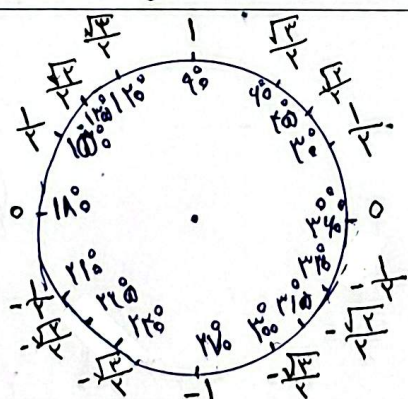
ب) $y = \frac{3x+1}{x^2+1}$ $\Rightarrow$ همیشه مثبت و مشتق منفرست $\Rightarrow Df = R$

ج) $y = \frac{\sqrt{x-2}}{x-4}$ $\Rightarrow x-2 \geq 0 \Rightarrow x \geq 2$ و $x \neq 4 \Rightarrow Df = [2, \infty) - \{4\}$

د) $y = \frac{2x+3}{|x|+x^2}$ $\Rightarrow x \neq 0$ چون $|x|+x^2 \neq 0 \Rightarrow Df = R - \{0\}$



کسینوس ها



سینوس ها

الف) $\{2k\pi + \frac{\pi}{4}, 2k\pi + \frac{5\pi}{4} | k \in \mathbb{Z}\}$

ب) $\{2k\pi + \frac{\pi}{3}, 2k\pi + \frac{4\pi}{3} | k \in \mathbb{Z}\}$