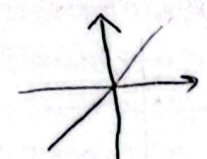
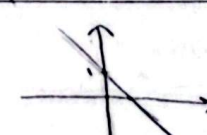
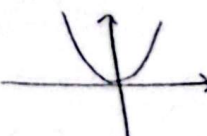
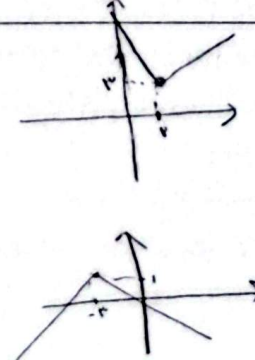


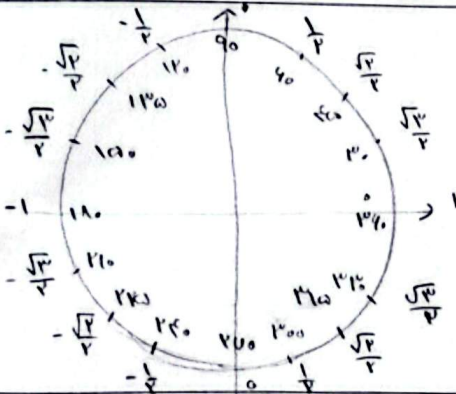
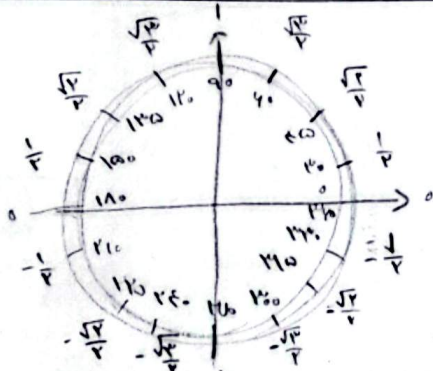
تابع است	$y^3 - x = 2x^2 \Rightarrow y^3 = 2x^2 + x \quad x=1 \Rightarrow y^3 = 3 \quad y = \sqrt[3]{3}$
تابع نیست	$ y + x^2 = x + 3 \Rightarrow y = x + 3 - x^2 \quad y = \pm (x + 3 - x^2)$
۱	زمانی که عبارت نامنفی منفی شود در هر دو صفر باشند. $\leq$ $\sqrt{x-4} + y-2 = 0 \quad x-4 \geq 0 \quad y-2 \geq 0$ $x=4 \quad y=2$ تابع است
تابع نیست	$x = \cos y \quad x=1 \Rightarrow \cos 0 = 1 \quad \cos 2\pi = 1$

(الف)	(ب)
 $f(x) = 3$	 $a=2 \Rightarrow y = 2x + b$ $\Rightarrow 2 = 2(1) + b \Rightarrow b = 0$ $f(x) = 2x$
۲	

(الف)	(ب)
$x=y \Rightarrow f(x)=x \quad y=ax+b \quad x=ax+b \quad a=1 \quad b=0$ $a+2b = 1+2 \times 0 = 1$	$y = x^2 + ax + b$ $x = -\frac{b}{2a} \Rightarrow 2 = -\frac{a}{2} \Rightarrow a = -4$ $y = \frac{-b^2 - 4ac}{4a} \Rightarrow 1 = \frac{a^2 - 4 \times 1 \times b}{4}$ $a+2b = -4+10 = 6$ $a = -4 \Rightarrow \frac{14 - 4b}{4} = 1 \quad -14 + 4b = 4 \quad 4b = 18 \quad b = \frac{9}{2}$
۳	

(الف)	(ب)
$y = 2x + 1$ 	$y = -3x + 1$ 
۲) $y = x^2$ $y = x^n$ زوج n 	۳) $y = x^n$ فرد n 
۴	

(الف)	(ب)
$x-2 + 3$  $y = x$	$- x+3 + 1$ 
۵	

ا) $\frac{x+4}{x^2-4x} \Rightarrow x^2-4x = x(x-4) \quad x=0 \quad x=4 \quad D_f = \mathbb{R} - \{0, 4\}$ ب) $\frac{x+4}{x^2 \vee x+4} \Rightarrow$ مخرج $\neq 0 \Rightarrow D_f = \mathbb{R}$ ج) $\frac{x+4}{x^2-x+4} \Rightarrow$ مخرج $\neq 0 \Rightarrow D_f = \mathbb{R}$ د) $\frac{x+4}{x^2-4x} \Rightarrow x^2-4x = x(x-4) \Rightarrow x^2(x^2-4) = 0 \Rightarrow x^2(x-2)(x+2) = 0$ $D_f = \mathbb{R} - \{-2, 0, 2\}$	6
ا) $4-x \geq 0 \quad x \leq 4 \quad x-2 \geq 0 \quad x \geq 2 \quad D_f = [2, 4]$ ب) $x^2+1 \neq 0 \quad x^2 \neq -1 \quad D_f = \mathbb{R}$ ج) $x-2 \geq 0 \quad x \geq 2 \quad x \neq 4 \quad D_f = [2, 4) \cup (4, +\infty)$ د) $x +x^2 \geq 0 \quad x \geq 0, x^2 \geq 0 \Rightarrow x=0 \quad D = \mathbb{R} - \{0\}$	7
	8
	9
$\cos \frac{\pi}{4} = \frac{1}{\sqrt{2}} \Rightarrow \frac{1}{\sqrt{2}} \quad \sin \alpha = \frac{1}{\sqrt{2}} \Rightarrow \alpha = \frac{\pi}{4}, \frac{3\pi}{4}$ (ا) $\cos \frac{11\pi}{4} = \frac{\sqrt{3}}{2} \Rightarrow \frac{\sqrt{3}}{2} \quad \sin \alpha = -\frac{\sqrt{3}}{2} \Rightarrow \alpha = \frac{5\pi}{4}, \frac{7\pi}{4}$ (ب)	10