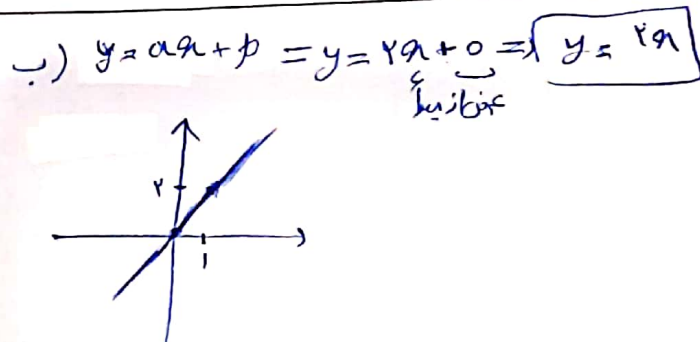
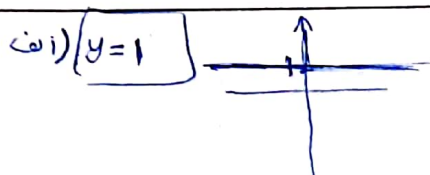


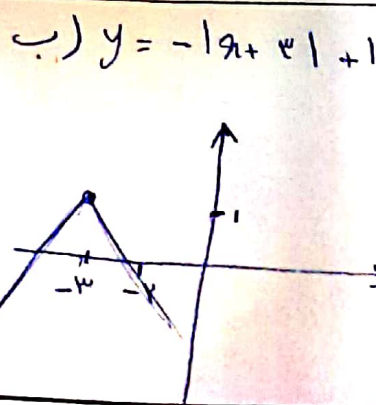
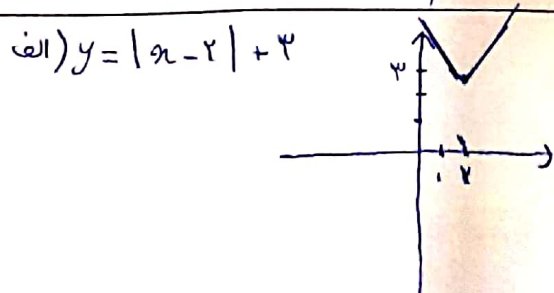
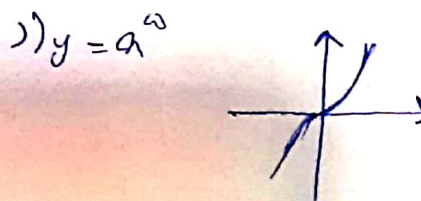
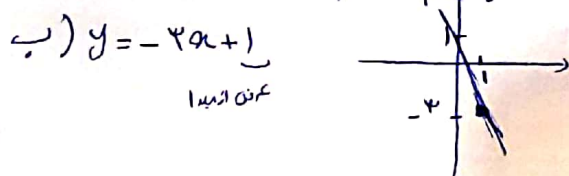
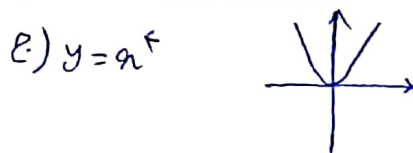
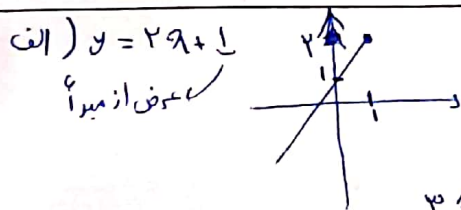
الف) $y^3 - 9y = 2x^2 \Rightarrow y^3 = 2x^2 + 9y$
 $2x^2 + 9y = y^3 \Rightarrow 2x^2 = y^3 - 9y = y(y^2 - 9) = y(y-3)(y+3)$
 $\Rightarrow y_1 = y_2 = y_3 = 0$
 $\Rightarrow y_1 = y_2 = y_3 = 0$
 ب) $|y| + x^2 = x + 3 \Rightarrow |y| + 1 = 1 + 3$
 $\Rightarrow |y| + 1 = 4 \Rightarrow y = -3, 3$
 تابع نیست

ج) $\sqrt{x-4} + |y-2| = 0$
 $\Rightarrow y-2=0$
 $x-4=0$
 $\Rightarrow x=4, y=2$
 د) $x = \cos y$
 $\cos y = 0 \Rightarrow y = \frac{\pi}{2}, \frac{3\pi}{2}$
 تابع نیست



الف) $y = ax + b$
 $y = x \Rightarrow a = 1, b = 0$
 $1 + 0 = 1$

ب) $y = x^2 + ax + b \Rightarrow x = \frac{-b}{2a} = 2$
 $\Rightarrow \frac{-b}{2} = 2 \Rightarrow b = -4$
 $\Rightarrow y = x^2 - 4x + b \Rightarrow y = x^2 - 4x + 5$
 $1 = -4 + b \Rightarrow b = 5$
 $\Rightarrow -4 + 2 \times 5 = -4 + 10 = 6$



$$\text{الف) } \frac{a+f}{a^2-fa} = y \Rightarrow a^2-fa \neq 0$$

$$a^2-fa=0 \Rightarrow a=0 \text{ or } f$$

$$\Rightarrow D_f = \mathbb{R} - [0] - [f]$$

$$\text{ب) } y = \frac{a+f}{a^2-fa}$$

$$a^2-fa+1 \neq 0 \Rightarrow \Delta = b^2-4ac$$

$$\Delta = (-1)^2 - 4 \times 1 \times 1 = 1 - 4 = -3$$

$$\Delta < 0 \Rightarrow$$

$$\Rightarrow D_f = \mathbb{R}$$

$$\text{ج) } \frac{a+f}{a^2+fa} = y \Rightarrow a^2+fa \neq 0$$

$$\Delta = 1 - f \times 1 \times f = 1 - f^2 = 1 - 1 = 0$$

$$\Delta < 0 \Rightarrow D_f = \mathbb{R}$$

$$\text{د) } y = \frac{a+f}{a^2-fa} \Rightarrow \frac{a^2-fa}{a^2-fa} \neq 0$$

$$a \neq 0, f \neq 0 \Rightarrow D = \mathbb{R} - [0] - [f] - [f]$$

$$\text{الف) } y = \sqrt{4-a} + \sqrt{a-2}$$

$$4-a \geq 0 \Rightarrow 4 \geq a$$

$$a-2 \geq 0 \Rightarrow a \geq 2$$

$$\Rightarrow D = [2, 4]$$

$$\text{ب) } y = \frac{a+1}{a^2+1} \Rightarrow \frac{a^2+1}{a^2+1} \neq 0$$

$$\Rightarrow a^2 \geq 0 \Rightarrow a^2+1 > 0$$

مخرج صفر
صفر نیست

$$D = \mathbb{R}$$

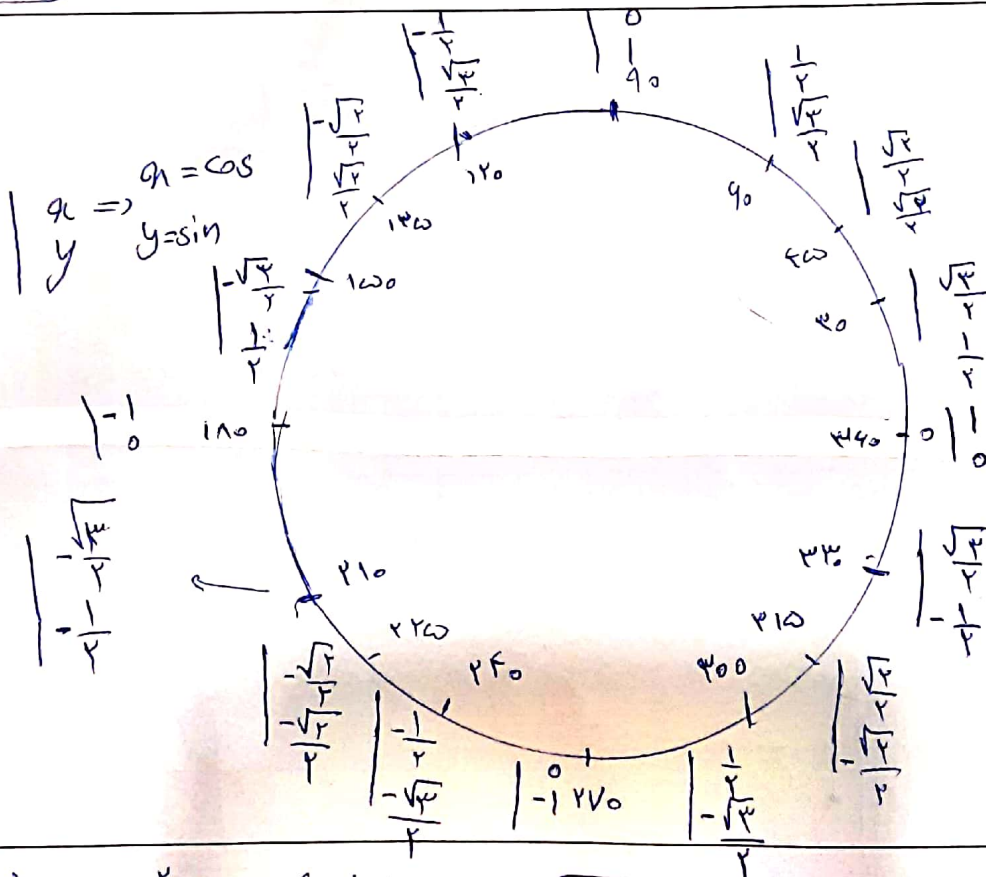
$$\text{ج) } \frac{\sqrt{a-2}}{a-f} \Rightarrow a-2 \geq 0$$

$$a \geq 2$$

$$\Rightarrow D = [2, f) \cup (f, +\infty)$$

$$\text{د) } \frac{a+f}{1+a^2} \Rightarrow \frac{a^2+1}{1+a^2} \neq 0$$

$$a \neq 0 \Rightarrow D = \mathbb{R} - \{0\}$$



$$\text{الف) } -\cos \frac{2\pi}{3} = -(-\frac{1}{2}) = +\frac{1}{2} = \sin \frac{\omega\pi}{4}, \sin \frac{\pi}{4}$$

(الف)

$$\text{ب) } -\cos \frac{11\pi}{4} = -\frac{\sqrt{2}}{2} = \sin \frac{f\pi}{3}, \frac{\omega\pi}{4}$$

(ب)