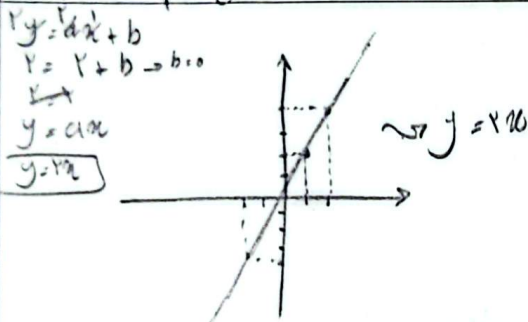
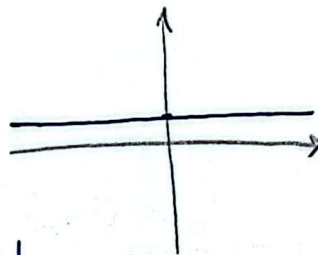


الف) $y^3 = 2x^2 + x \rightarrow y = \sqrt[3]{2x^2 + x} \rightarrow \sqrt[3]{\text{باید است}}$
 ب) $|y| = -x^2 + x + 5 \rightarrow y = \pm(-x^2 + x + 5) \rightarrow \sqrt[3]{\text{باید نیست}}$
 ج) $x - 2 > 0 \rightarrow x > 2$
 $y - 2 > 0 \rightarrow y > 2$
 $\rightarrow x = 2 \Rightarrow y = 2 \Rightarrow \sqrt[3]{\text{باید}}$
 د) $x = \frac{\sqrt{2}}{2}, y = \cos \pi \frac{x}{2}, \cos \pi \frac{y}{2} \rightarrow \sqrt[3]{\text{باید نیست}}$

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الف

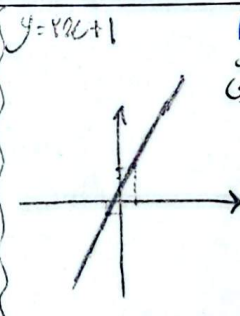
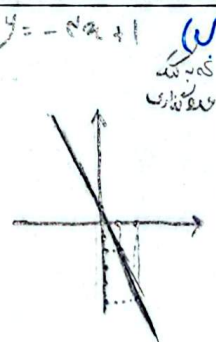
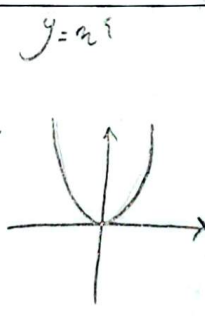
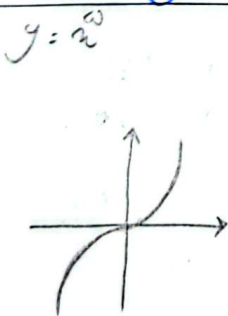


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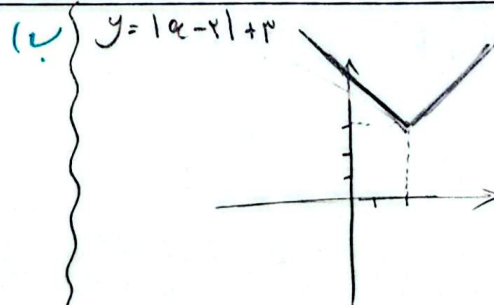
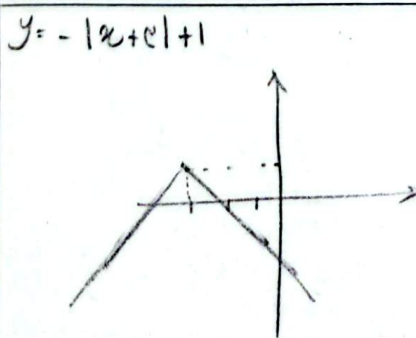
~~.....~~ $\min$ $y = ax^2 + bx + c$
 $y = x^2 + ax + b$
 $1 = 2 + (-1) + b$
 $b = 0$
 $a = 2, b = 1$
 $y = 1 + a + b$
 $y = 9 + 2a + b$
 $1 + a + b = 9 + 2a + b$
 $a = -8$
 $a + 2b = -8 + 10 = 2$

الف) $y = ax + b, y = x$
 $\Rightarrow a = 1, b = 0$
 $a + 2b = 1 + 0 = 1$

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$$a) x^2 - 4x \neq 0 \rightarrow x(x-4) \neq 0$$

$$D_f = \mathbb{R} - \{4\}$$

$$b) x^2 - 4x + 4 \neq 0 \text{ دایره کامل}$$

$$\Delta \rightarrow \text{منفی}$$

$$D_f = \mathbb{R}$$

$$c) x^2 + x + 2 \neq 0$$

$$\Delta \rightarrow \text{منفی}$$

$$D_f = \mathbb{R}$$

$$D_f = (x, +\infty) \cup (-x, 0) \cup (-\infty, -x)$$

$$\begin{matrix} -x & -x & 0 & x \\ + & - & + & - & + \end{matrix}$$

$$\frac{x+x}{x^2-4x} = \frac{-x^2}{x^2(x^2-4)} = \frac{-x}{x^2-4}$$

$$a) 4-x \geq 0 \rightarrow x \leq 4 \Rightarrow x \leq 4$$

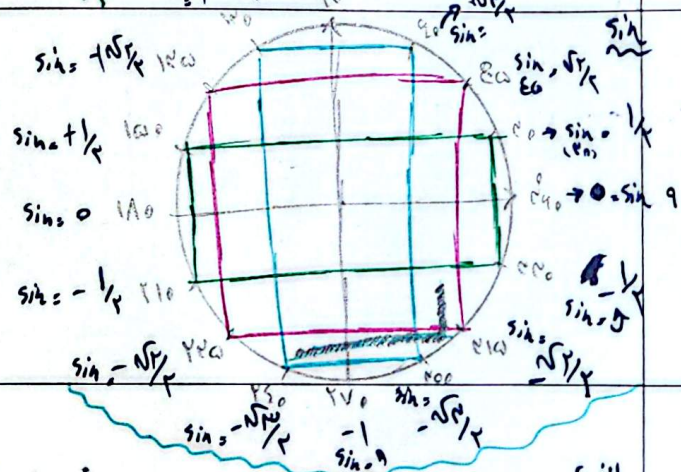
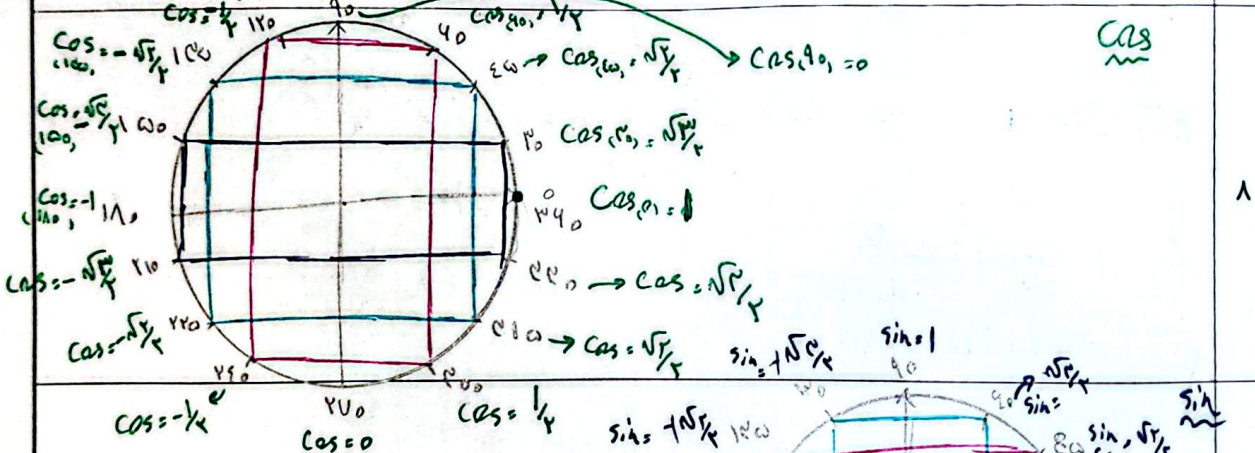
$$x-2 \geq 0 \rightarrow x \geq 2 \quad D_f = [2, 4]$$

$$b) |x| + x^2 \neq 0 \quad D_f = \mathbb{R} - \{0\}$$

$$c) x^2 + 1 \neq 0 \quad x^2 \neq -1 \rightarrow D_f = \mathbb{R}$$

$$d) x-2 \geq 0 \rightarrow x \geq 2 \Rightarrow D_f = [2, +\infty) - \{x\} \quad [x, x) \cup (x, +\infty)$$

$$x-x \neq 0 \rightarrow x \neq x$$



$$\cos \frac{11\pi}{4} = \frac{\sqrt{2}}{2} \rightarrow -\frac{\sqrt{2}}{2}$$

$$\sin(\pi) = -\frac{\sqrt{2}}{2}$$

$$2k\pi - \frac{\pi}{4}, 2k\pi - \frac{3\pi}{4}$$

$$\rightarrow 2k\pi + \frac{7\pi}{4}, \rightarrow \frac{2\pi}{3} + 2k\pi$$

$$\cos \frac{5\pi}{4} = -\frac{\sqrt{2}}{2} \rightarrow \frac{\sqrt{2}}{2}$$

$$\sin(\pi) = \frac{\sqrt{2}}{2}$$

$$2k\pi + \frac{3\pi}{4}, 2k\pi + \frac{5\pi}{4}$$