

$$\text{الف) } \left. \begin{aligned} y_1^3 &= \frac{2x^2 + x}{x^2 + 4} \\ y_2^3 &= \frac{2x^2 + x}{x^2 + 4} \end{aligned} \right\} \rightarrow y_1^3 = y_2^3 \rightarrow y_1 = y_2 \quad \text{تابع واحد}$$

$$\text{ب) } \left. \begin{aligned} |y_1| &= \frac{-x^2 + x + 3}{x^2 + 4} \\ |y_2| &= \frac{-x^2 + x + 3}{x^2 + 4} \end{aligned} \right\} \rightarrow |y_1| = |y_2| \rightarrow y_1 = \pm y_2 \quad \text{تابعين}$$

$$\text{ج) } \sqrt{x-5} = 0 \rightarrow x-5=0 \rightarrow x=5$$

$$|y-2|=0 \rightarrow y-2=0 \rightarrow y=2 \quad \text{تابع واحد}$$

$$\text{د) } x=0 \rightarrow \cos y = 0 \rightarrow y = k\pi + \frac{\pi}{2} \quad (90^\circ, 270^\circ) \quad \text{تابعين}$$

$$\text{الف) } \frac{x+5}{x(x-4)} = y \quad D_f = \mathbb{R} - \{0, 4\}$$

$$\text{ب) } \frac{x+5}{x^2 - \sqrt{x+4}} \rightarrow \Delta < 0 \quad D_f = \mathbb{R}$$

السيطة (مختبر B)

$$\text{ج) } \frac{x+5}{x^4 + x + 5} \rightarrow \Delta < 0 \quad D_f = \mathbb{R}$$

$$\text{د) } y = \frac{x+5}{x^2(x^2-2)(x+2)} \quad D_f = \mathbb{R} - \{0, 2, -2\}$$

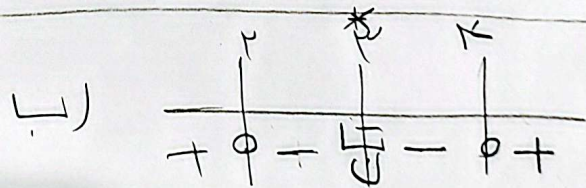
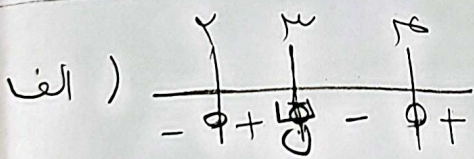
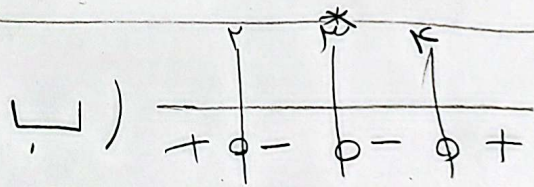
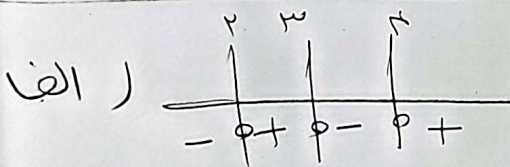
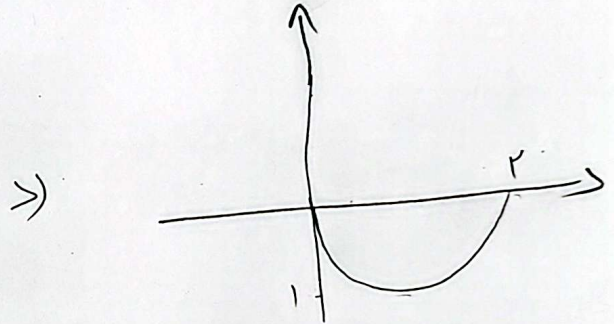
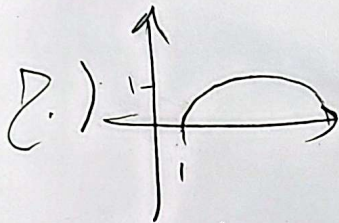
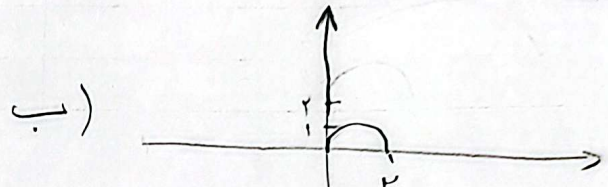
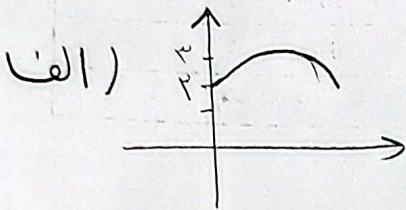
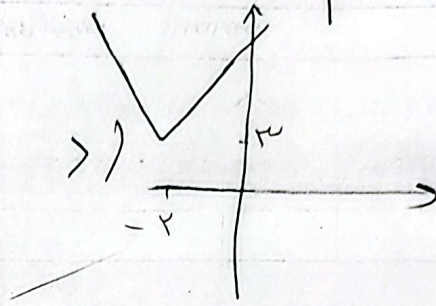
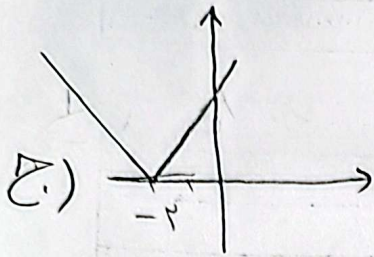
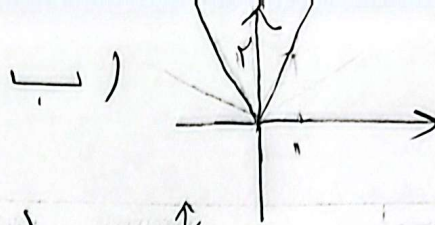
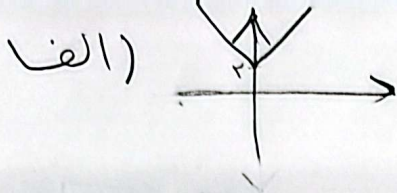
$$\text{الف) } \begin{aligned} 4-x > 0 &\rightarrow x < 4 \\ x-5 > 0 &\rightarrow x > 5 \end{aligned} \quad D_f = [2, 4]$$

$$\text{ب) } x^2 \neq 1 \quad D_f = \mathbb{R}$$

$$\text{ج) } x \neq 4 \quad D_f = [2, +\infty) - \{4\}$$

$$x-5 > 0 \rightarrow x > 5$$

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



جمع ضرایب برابر است (الف)
بر همه ضرایب برابر است

$$\frac{x^3 - 3x + 2}{x^2 + x - 2} \div \frac{x^2 - 3x + 2}{x^2 + x - 2} = \frac{x^3 - 3x + 2}{x^2 + x - 2} \cdot \frac{x^2 + x - 2}{x^2 - 3x + 2}$$

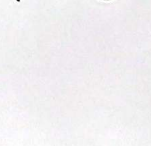
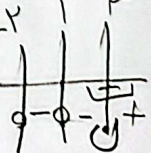
$$= \frac{x^3 - 3x + 2}{x^2 - 3x + 2} \cdot \frac{x^2 + x - 2}{x^2 + x - 2}$$

$$= \frac{x^3 - 3x + 2}{x^2 - 3x + 2}$$

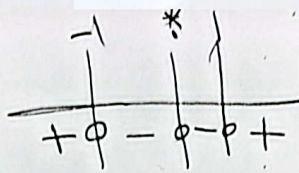
$$= \frac{x^3 - 3x + 2}{x^2 - 3x + 2}$$

$$= \frac{x^3 - 3x + 2}{x^2 - 3x + 2}$$

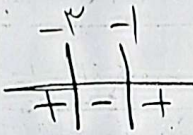
ب) $\frac{(x-2)(x-1)}{(x-3)(x+1)}$



$$\text{الف) } \frac{x^2(x-1)(x+1)}{x^2+x+2}$$

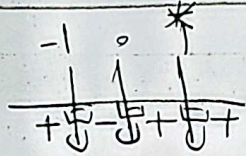


$$\text{ب) } \frac{(x+3)(x+1)}{x^2+x+3}$$



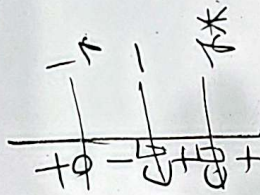
$$\text{الف) } \frac{x^3-1}{x^3-x} > 0$$

$$x(x-1)(x+1)$$



$$D_f = (-\infty, -1) \cup (0, 1) \cup (1, +\infty)$$

$$\text{ب) } \frac{(x-5)(x+5)}{(x-1)(x-5)}$$



$$D_f = (-\infty, -5) \cup (1, 5) \cup (5, +\infty)$$