

الف) $y = 2x^2 \rightarrow x^2 + y^2 = 0 \rightarrow x = y = 0$ تابع

ب) $|y| + x^2 = x + 3 \rightarrow x = 0 \rightarrow |y| = 3 \rightarrow y = -3, 3$ تابع

ج) $\sqrt{x-5} + |y-2| = 0 \rightarrow x=5 \rightarrow |y-2|=0 \rightarrow y=2$ تابع

د) $x = \cos y \rightarrow x = 0 \rightarrow y = \frac{\pi}{2}, \frac{3\pi}{2}, \dots$ تابع

الف) $y = \frac{x+5}{x^2-5x} \rightarrow x(x-5) \rightarrow D_f = R - \{0, 5\}$

ب) $y = \frac{x+5}{x^2-7x+14} \rightarrow \Delta < 0 \rightarrow D_f = R$

ج) $y = \frac{x+5}{x^2+x+5} \rightarrow \Delta < 0 \rightarrow D_f = R$

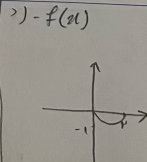
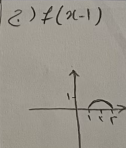
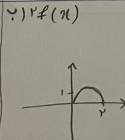
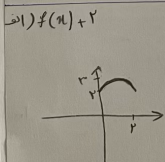
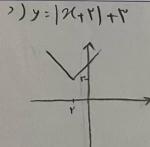
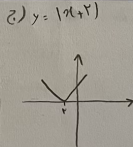
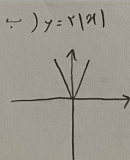
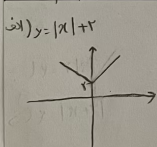
د) $y = \frac{x+2}{x^2-5x^2} \rightarrow x^2(x^2-5) \rightarrow D_f = R - \{0, 2, 2\}$

الف) $\sqrt{x-2} + \sqrt{x-2} \rightarrow x-2 \geq 0 \rightarrow x \geq 2 \rightarrow D_f = \{2, 2\}$

ب) $y = \frac{x+1}{x^2+1} \rightarrow D_f = R$

ج) $y = \frac{\sqrt{x-2}}{x-5} \rightarrow x-2 \geq 0, x \neq 5 \rightarrow D_f = [2, 5) \cup (5, +\infty)$

د) $y = \frac{x^2+3}{|x|+x^2} \rightarrow |x|+x^2 \neq 0 \rightarrow D_f = R - \{0\}$



$$\text{الف) } y = (x-2)(x-3)(x-4)$$

$$\begin{array}{c|ccc} & 2 & 3 & 4 \\ \hline & - & + & - & + \end{array}$$

$$\text{ب) } y = (x-2)(x-3)(x-4)$$

$$\begin{array}{c|ccc} & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$

$$\text{الف) } y = \frac{(x-2)(x-4)}{x-3}$$

$$\begin{array}{c|ccc} & 2 & 3 & 4 \\ \hline & - & + & - & + \end{array}$$

$$\text{ب) } y = \frac{(x-2)(x-4)}{(x-3)^2}$$

$$\begin{array}{c|ccc} & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$

$$\text{الف) } y = \frac{x^3 - 3x^2 + 2x}{x-3} \rightarrow \frac{(x-1)(x^2 + x - 2)}{x-3} \rightarrow \frac{(x-1)(x+2)(x-1)}{x-3}$$

$$\begin{array}{c|ccc} & 2 & 3 & 4 \\ \hline & + & - & - & + \end{array}$$

$$\text{ب) } y = \frac{x^3 - 3x^2 + 2x}{x^2 - 5x + 6} \rightarrow \frac{(x-1)(x-2)(x)}{(x-1)(x-3)(x-2)}$$

$$\begin{array}{c|ccc} & 1 & 2 & 3 \\ \hline & + & + & - & + \end{array}$$

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

$$\begin{array}{c|ccc} & 1 & 0 & 1 \\ \hline & + & - & - & + \end{array}$$

$$\text{ب) } y = \frac{x^3 + 3x^2 + 2x}{x^3 + 2x^2 + x} \rightarrow \Delta < 0$$

این سر هم به مبدا

$$\text{الف) } \sqrt{\frac{x^3 - 1}{x^3 - x}} \rightarrow \frac{(x-1)(x^2 + x + 1)}{x(x^2 - 1)}$$

$$\begin{array}{c|ccc} & 1 & 0 & 1 \\ \hline & + & - & - & + \end{array}$$

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

$$\text{ب) } \sqrt{\frac{x^3 - 16}{x^3 - 8x + 4}} \rightarrow \frac{(x-4)(x+4)}{(x-1)(x-4)}$$

$$\begin{array}{c|ccc} & 4 & 1 & 4 \\ \hline & + & - & - & + \end{array}$$

$$D_f = (-\infty, -4) \cup (1, 4) \cup (4, \infty)$$