



① تابع هست به ازای هیچ مقادیری در دسترس نداریم

$$\begin{array}{cccccccc} -3 & -2 & 0 & 3 & 8 & 7 & & \\ -\frac{1}{2} & +\frac{1}{2} & -\frac{1}{2} & +\frac{1}{2} & -\frac{1}{2} & -\frac{1}{2} & +\frac{1}{2} & \end{array}$$

$$D_g = (-3, 2] \cup [0, 2) \cup [7, +\infty) \quad \textcircled{2}$$

$$x^3 - 2x \neq 0 \quad x(x-2)(x+2) \neq 0$$

③ الف)

$$D_f = \mathbb{R} - \{-2, 0, 2\}$$

$$D = (-2, 0) \cup (1, +\infty)$$

$$\begin{array}{cccc} -2 & 0 & 1 & \\ -\frac{1}{2} & +\frac{1}{2} & -\frac{1}{2} & +\frac{1}{2} \end{array}$$

ب)

$$t^2 - 2t - 8 = 0 \quad \begin{cases} t = -2 \rightarrow x = \pm 2 \\ t = 4 \rightarrow x = \pm 2 \end{cases}$$

④

$$4 - 2[-x] \neq 0 \rightarrow 2, (-2 < 3 \rightarrow -2 \geq x > -3$$

$$\Rightarrow D = \mathbb{R} - (-3, -2]$$

$$x(x^2 - 1) > 0 \quad \begin{array}{cccc} -1 & 0 & 1 & \\ -\frac{1}{2} & +\frac{1}{2} & -\frac{1}{2} & +\frac{1}{2} \end{array} \rightarrow [-1, 0] \cup [1, +\infty) \quad \textcircled{5}$$

$$\sqrt{|x|} \cdot x \rightarrow x > 0 \quad \textcircled{6}$$

$$D = [1, +\infty)$$

$$|x-2| - x^2 > 0$$

$$\begin{cases} x > 2 \rightarrow \Delta < 0 \\ x < 2 \rightarrow -x^2 - x + 2 > 0 \end{cases}$$

$$(x+2)(x-1) < 0$$

$$(-2, 1)$$

$$|x| \neq 1 \rightarrow x \neq \pm 1$$

$$\begin{array}{ccc} -1 & 1 & \\ +\frac{1}{2} & -\frac{1}{2} & + \end{array}$$

$$x \neq \pm 1$$

$$D \rightarrow [-2, -1) \cup (-1, 1)$$

Arman

$$1) (x-2)[x-2] > 0 \quad \begin{array}{ccc} x & 2 & \\ - & 0 & + \end{array} \quad D = [2, +\infty) \quad (6)$$

$$2) |x-1| [x-3] > 0 \quad \begin{array}{ccc} x & 3 & x \\ - & 1 & 0 & 1 & + \end{array} \quad D = [3, +\infty)$$

$$||x-2|-1|=K$$

$$\rightarrow |x-2|-1 = +K$$

$$|x-2| = K+1$$

$$x-2 = K+1 \quad \vee \quad x-2 = -(K+1)$$

$$x = K+3$$

$$x = -K+1$$

$$\rightarrow |x-2|-1 = -K$$

$$|x-2| = -K+1$$

$$x-2 = -K+1 \quad \vee \quad x-2 = K-1$$

$$x = 3-K$$

$$x = K+1$$

$$x \neq 1$$

$$x \neq -1$$

$$x^2 + 3x + 2 = (x+1)(x+2) \quad \left\{ \begin{array}{l} x \neq -1 \\ x \neq -2 \end{array} \right. \quad \left. \begin{array}{l} x \neq 1 \\ x \neq -1 \end{array} \right\} \quad \cup = 3$$

$$x^2 - 4x + 4 = 0 \quad (x-2)^2 = 0 \rightarrow x = 2$$

$$x > 0, \quad x \neq 1$$

$$\log_{\frac{1}{x}} > 0$$

$$x+1 \neq 1 \Rightarrow x \neq 0$$

$$\hookrightarrow 0 < x < 1$$

$$-0 \leq x^{x-1} \leq 3 \rightarrow -3 \leq x^{x-1} \leq 3$$

$$-\frac{3}{x} \leq x^x \leq \frac{3}{x} \rightarrow -\frac{3\sqrt{x}}{x} \leq x \leq \frac{3\sqrt{x}}{x}$$

Arman