

$$f(x) = \frac{x+2}{(x-1)(x-2)}$$

$$f(x) = -\frac{1}{2} \rightarrow \frac{g(x)}{f(x)} = -\frac{1}{\frac{1}{2}}$$

$$f(x) = \frac{1}{2} \rightarrow \frac{g(x)}{f(x)} = 2$$

$$g = \{(1, -\frac{1}{2}), (2, 1)\}$$

$$f(x) = \{(-\frac{1}{2}, 4), (\frac{1}{2}, 2), (\frac{3}{2}, -1), (2, 2)\}$$

$$f(x^2) = \{(-2, 2), (-1, 2), (1, 2), (2, 2)\} \leftarrow \begin{matrix} x^2=1 \Rightarrow x=\pm 1, \pm 2 \\ x^2=2 \end{matrix}$$

$$g(x) = \{(-\sqrt{2}, 0), (-1, -1), (1, -1), (\sqrt{2}, 0)\}$$

$$x = 1, 2, -1 \rightarrow \frac{f(x)}{1} = -\frac{1}{2} \quad x = 2 \Rightarrow \frac{f(x)}{2} = -1 \quad x = -1 \Rightarrow \frac{f(x)}{1} = 1 \quad = \{(1, -2), (2, 1), (-1, 1)\}$$

$$x = 2, 3, -1 \leftarrow \text{مستند}$$

$$h(x) = f(x) + 2 = 0$$

$$h(x) = f(x) + 2 = 0$$

$$h(-2) = f(-2) + 2 = 4$$

$$h = \{(2, 0), (3, 0), (2, 4)\}$$

$$\sqrt{x} \cdot x - n, 0 \rightarrow 0 \leq x \leq 3 \xrightarrow{0 \leq x \leq 3} 0, 1, 3 \leftarrow g(x)$$

$$D = \{0, 1, 3\}$$

$$f(x) = \sqrt{-(x-2)(x-1)}$$

$$\{x-2)(x-1) \leq 0$$

$$\begin{array}{|c|} \hline 1 \\ \hline - \\ \hline 1 \\ \hline \end{array} \rightarrow [1, 2]$$

$$h(x) = \{(1, 0), (2, \frac{1}{2}), (\frac{3}{2}, \frac{\sqrt{3}}{2})\}$$

$$\text{الف) } \rightarrow R = \mathbb{R}$$

$$\text{الف) } x^2 - 4x + 1 \rightarrow (x-2)^2 + 4 \quad R_f = [4, +\infty)$$

$$\text{ب) } -(x-3)^2 + 12 \rightarrow R_f = (-\infty, 12]$$

$$\text{ج) } R_f = [0, \infty)$$

$$\text{د) } 9x^2 - 9x + 1 = (x - \frac{1}{2})^2 + \frac{1}{4} \rightarrow R_f = [\frac{1}{4}, \infty)$$

$$\text{الف) } = \mathbb{R}$$

$$\text{ب) } \mathbb{R}$$

$$\text{ج) } [0, +\infty)$$

$$\text{د) } \sqrt{x} \in [0, +\infty)$$

$$\text{الف) } R = \mathbb{R} - \{x\}$$

$$\text{ب) } R = \{x\}$$