

$$2 - \left(-1, \frac{1}{2} \right) \left(1, 4 \right) \left(3, -1 \right)$$

$$D_f \cap D_g = \{ 3, -2, 2 \}$$

-4

$$\left\{ (1, 5) (3, 5) (-2, 4) \right\}$$

$$D_f \cap D_g = \{ 0, 1, 3 \}$$

-5

$$x \geq 0 \quad x \neq 2 \quad \rightarrow R \quad \left\{ 0, 1, 3 \right\} \quad \left(\frac{f}{g+1} \right) \text{ دامنه}$$

$$\sqrt{3x-2} \geq 0 \quad \sqrt{x}(\sqrt{3}-\sqrt{x}) \geq 0 \quad \frac{x}{p} - \frac{0}{q} + \frac{p}{q} \sim D_f = [0, 2) \cup (2, 3]$$

$$\omega x - x^2 - 4 \geq 0 \quad x^2 - \omega x + 4 \leq 0 \quad (x-1)(x-3) \leq 0 \quad -4$$

$$\left\{ (1, 0) \left(2, \frac{1}{\sqrt{2}} \right) (4, 0) \right\} \quad D_f \cap D_g = \{ 1, 2, 4 \} \quad [1, 4] \quad \text{دامنه}$$

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$$y = x^3 - 3x^2 + 3x - 1 + 1 \quad (x-1)^3 + 1 = y$$

$$y-1 = (x-1)^3 \quad \sqrt[3]{y-1} = x-1 \quad \sqrt[3]{y-1} + 1 = x \quad R = \mathbb{R}$$

$$y = \frac{1}{x^2 - 2x}$$

$$yx^2 - 2xy - 1 = 0$$

$$R = \mathbb{R} - (-1, 0]$$

$$(-\infty, -1] \cup (0, +\infty)$$

$$x^2 - 2x - \frac{1}{y} = 0 \quad x = \frac{2 \pm \sqrt{4 + \frac{4}{y}}}{2} \quad 4 + \frac{4}{y} \geq 0$$

$$\Delta = 4 + \frac{4}{y} \quad \text{VIHAN} \quad \frac{x}{p} - \frac{-1}{q} + \frac{p}{q} \geq 0$$

$$\sqrt{x+f}\sqrt{x-f} + \sqrt{x-f}\sqrt{x-e} = a+b\sqrt{x+c} \quad -1$$

$$\sqrt{x-f+f}\sqrt{x-f+f} + \sqrt{x-f-f}\sqrt{x-e+e} = a+b\sqrt{x+c}$$

$$\sqrt{(\sqrt{x-f}+f)^2} + \sqrt{(\sqrt{x-e}-f)^2} = \sqrt{x-f}+f + \sqrt{x-f}-f$$

$$f\sqrt{x-f} = a+b\sqrt{x+c} \quad c=-f \quad b=f \quad a=0$$

$$\frac{f}{f} = \frac{1}{1}$$

$$Dg \cap Df = \{1, 2\}$$

-2

$$Df = (x-3)(x-1) \sim R - \{1, 3\}$$

خارج

$$\frac{g}{f} = \left\{ (0, 4), (2, -1) \right\}$$

$$f(0) = \frac{4}{1}$$

$$f(2) = -1$$

$$\frac{f}{g} \sim f \cdot \frac{3}{f} = 3$$

$$\text{اف} = yx=1 \quad \left\{ \left(\frac{1}{p}, 2 \right) \left(\frac{3}{p}, -1 \right) (2, 2) \left(-\frac{1}{p}, 4 \right) \right\}$$

-3

$$\text{ب.} \quad \left\{ (+1, 2) (-1, 2) (\sqrt{3}, -1) (-\sqrt{3}, -1) (+2, 2) (-2, 2) \right\}$$

$$\text{ج.} \quad \left\{ (-2, 4) (1, 3) (3, 14) (1, 3) \right\}$$

الف - $x_5 = \frac{f}{v} = 2$ $y_5 = \frac{f}{v} + 10 = 12$ $(4, +\infty)$ -1

ب - $x_5 = \frac{-4}{-2} = 2$ $y_5 = -9 + 11 + 2 = 12$ $(-\infty, 12]$

ج - $x_5 = \frac{f}{v} = 2$ $y_5 = f - 11 + 2 = -9 \sqrt{(-9, +\infty)} = [0, +\infty)$

د - $x_5 = \frac{-4}{-2} = 2$ $y_5 = 11 - 9 = 2$ $\sqrt{(-\infty, 9)} = [0, 2]$

الف - $\mathbb{R}$ ب - $\mathbb{R}$ ج - $\mathbb{R}^+ \cup \{0\}$ -9

د - $\mathbb{R}^+ \cup \{0\} \rightarrow [0, +\infty)$ $[1, +\infty)$

الف - $x = \frac{y+1}{y-2} = y$ $x = \frac{y+1}{y-2}$ $R = \mathbb{R} - \{2\}$ -10

ب - $x = \frac{y+1}{y-2} = y$ $x = \frac{-y+1}{y-2} \rightarrow R = \mathbb{R} - \{2\}$