

A دقت 11

ص ین

مسئله

$$(\sqrt{x+f}\sqrt{x-f} + \sqrt{x-f}\sqrt{x-f})^2 = x + f\sqrt{x-f} + x - f\sqrt{x-f} + \sqrt{x^2 - 14x + 5f} \underbrace{\quad}_{(x-1)^2}$$

$$2x + 2x - 14 \rightarrow 4x - 14 \rightarrow \sqrt{4(x-1)} \rightarrow 2\sqrt{x-1}$$

$$\frac{-1}{2} = \frac{0+x}{-f} \quad a=0 \quad b=2 \quad c=-f \quad \rightarrow$$

$$\frac{g}{f} = \{2, 0\} \rightarrow \frac{x+2}{(x-2)(x-1)} \rightarrow \mathbb{R} - \{1, 2\}$$

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

$$f(2) = -f \quad g(2) = 1 \quad f(0) = \frac{2}{f} \quad g(0) = f$$

$$\text{الف) } \left\{ \left(\frac{1}{\sqrt{2}}, \sqrt{2} \right), \left(\frac{1}{\sqrt{2}}, -1 \right), \left(\sqrt{2}, \sqrt{2} \right), \left(-\frac{1}{\sqrt{2}}, \sqrt{2} \right) \right\}$$

$$\begin{array}{llll} x=1 & x=2 & x=f & x=-1 \\ x=\frac{1}{\sqrt{2}} & x=\frac{1}{\sqrt{2}} & x=\sqrt{2} & x=-\frac{1}{\sqrt{2}} \end{array}$$

$$\text{ب) } \left\{ (1, 2), (-1, 2), (\sqrt{2}, -1), (-\sqrt{2}, -1), (2, 2), (-2, 2) \right\}$$

$$x^2 = -1 \quad \text{و}$$

$$\text{ج) } \left\{ (-2, 1), (1, 3), (3, 9), (-1, 1) \right\}$$

$$x=x \rightarrow 2x(x^2+1) \quad x=1 \rightarrow 2x(-1)^2+1 \quad x=2 \rightarrow 2x \cdot 2^2+1 \quad x=-1 \rightarrow 2x(0)^2+1=1$$

$$\text{د) } \left\{ (1, -f), (2, -1) \right\}$$

$$\{2, 1\} = \text{مجموعه} \rightarrow (-1, 2) = 0 \quad \text{و}$$

$$\begin{array}{ll} f(1) = 2 & f(2) = -1 \\ g(1) = -1 & g(2) = 2 \end{array}$$

$$D = \{2, -2, 3\} \quad x=2$$

$$\begin{array}{lll} f(2)=1 & f(-2)=0 & f(3)=1 \\ g(2)=3 & g(-2)=5 & g(3)=3 \end{array}$$

$$\boxed{h(2)=0 \quad h(-2)=5 \quad h(3)=0} \quad h(x) = \{(2, 0), (-2, 5), (3, 0)\}$$

$$\text{هـ) } D_f \rightarrow \begin{array}{l} x > 0 \\ x \neq 2 \end{array} \rightarrow [0, 2] - \{2\} \quad D(g) = \mathbb{R} \rightarrow \mathbb{R} - \mathbb{Z}$$

$$\begin{array}{l} \sqrt{x} \geq x \\ 2x \geq x^2 \\ 0 \geq x^2 - 2x \\ 0 \leq x \leq 2 \end{array}$$

$$\hookrightarrow (0, 2) - \{1, 2\}$$

$$-x^2 + 5x - 4 \geq 0$$

$$x^2 - 5x + 4 \leq 0$$

$$(x-4)(x-1)$$

$$1 \leq x \leq 4 \rightarrow D_h = \{1, 2, 4\}$$

$$h = \{(1, 0), (2, \frac{\sqrt{2}}{2}), (4, 0)\}$$

$$\frac{f(x)}{g(x)} = \frac{0}{3} \quad \frac{f(x)}{g(x)} = \frac{\sqrt{2}}{2} \quad \frac{f(x)}{g(x)} = \frac{0}{4}$$

الف) $R \rightarrow$ بنظر نمی آید

$$ب) x^2 y - 2xy = 1 \rightarrow x^2 y - 2xy - 1 = 0$$

$$4y^2 + 4y \geq 0$$

$$4y(y+1) \geq 0 \rightarrow R = (-\infty, -1] \cup [0, +\infty)$$

$$الف) 16 - 40 = -24 \quad \frac{24}{4} = 6 \quad [6, +\infty)$$

$$ب) 36 + 12 = 48 \quad \frac{-48}{-4} = 12 \quad (-\infty, 12]$$

$$ج) 16 + 12 = 28 \quad \frac{-28}{4} = -7 \rightarrow [0, +\infty)$$

$$د) \frac{-36}{-4} = 9 \quad [0, 9]$$

الف) R

ب) R

$\rightarrow$ بنظر نمی آید

ج) $[0, +\infty)$ $\rightarrow$ زیر اعداد مثبت

د) $[0, +\infty)$ $\rightarrow$ توان ۲ منفی نمی شود

$$الف) R - \{3\} \rightarrow 3 = \frac{c}{a} = \frac{3}{1}$$

$$ب) R - \{2\} \rightarrow \frac{c}{a} = \frac{2}{1}$$