

پایه آنتین

$$D_f = -\infty < x < \infty \rightarrow x^2 - 5x + 4 \leq 0$$

$$D_f = [1, 4]$$

$$f(1) = 0, f(2) = 2, f(4) = 0$$

$$\frac{y}{x} = \left\{ \left(\frac{1}{1}, 0 \right), \left(\frac{2}{2}, 1 \right), \left(\frac{4}{4}, 0 \right) \right\}$$

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

$$x-1 = (x-1)^3 \rightarrow x-1 = \sqrt[3]{x-1} \rightarrow x = \sqrt[3]{x-1} + 1$$

$$y = x^3 - 3x^2 + 2x - 1 = 0 \rightarrow y = x^3 - 3x^2 + 2x - 1 = 0$$

$$\Delta \geq 0 \rightarrow 4y^2 - 4(-y) \geq 0 \rightarrow 4y^2 + 4y \geq 0$$

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

$$\text{الف) طول کتبی: } \frac{-b}{2a} \rightarrow \frac{-4}{2} = -2$$

$$2 \times 2 - 4 \times 2 + 1 = -7$$

$$R = [2, +\infty)$$

$$\text{ب) طول کتبی: } \frac{-4}{2} = -2$$

$$-9 + 11 + 3 = 5$$

$$R = (-\infty, 2]$$

$$2) \frac{f}{x} = 2 \rightarrow \text{طول کتبی} \quad \frac{f}{x} = 2 \rightarrow \sqrt{[-7, +\infty)} \rightarrow [0, +\infty)$$

$$3) \frac{-4}{-2} = 2 \rightarrow \text{طول کتبی} \quad -9 + 11 = 2 \rightarrow \sqrt{(-\infty, 2]} \rightarrow [0, 2]$$

$$\text{الف) } R = [0, +\infty)$$

$$\text{ب) } R = [0, +\infty)$$

$$\text{ج) } R = [0, +\infty) \rightarrow R = [0, +\infty)$$

$$\text{د) } R = (R)^2 \rightarrow R = [0, +\infty)$$

$$\text{الف) } R = \{3\}$$

$$\text{ب) } R = \{2\}$$

سیانامی

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$$x - \sqrt{x-1} + x + \sqrt{x-1} + 2\sqrt{x^2 - 13x + 4} = 2x + 2\sqrt{x-1}$$

$$2x + 2\sqrt{x-1} = 2x + 2\sqrt{x-1} = 2x - 14 \xrightarrow{\text{با } \sqrt{x-1} \text{ ضرب}} \sqrt{x-1} = 2\sqrt{x-1}$$

$$\frac{a+b}{c} = 7 \Rightarrow \frac{0+2}{-1} = -2$$

$$\alpha = 0, \beta = 2, \gamma = -1$$

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$$D_f = \{R - \frac{1}{2}, 1\}$$

$$f(x) = \begin{cases} 1 & x=1 \\ -1 & x=0 \end{cases}$$

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

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

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

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 ج) $f(x) + 1 = \left\{ (2, 1), (1, 3), (3, 9), (-1, 1) \right\}$
 د) $\left\{ (1, -3), (3, -1) \right\}$

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$$h = \left\{ (2, 5), (3, 5), (-2, 5) \right\}$$

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$$D_f \cap D_g = \{x \mid g(x) \neq 0\} \rightarrow [0, 3] - \{2\} - \{x - 2\}$$

$$D_f = \{x \mid x > 0\} \rightarrow x > 0$$

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$$\sqrt{x-1} = 0 \rightarrow x = 1$$

$$x^2 - 3x = 0 \rightarrow x(x-3) = 0 \rightarrow x = 0 \text{ or } x = 3$$

$$D_f = [0, 3]$$

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$$D_g = \mathbb{R}$$



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$$g(x) \neq -1 \rightarrow x \in \mathbb{R} - \{2\}$$