

$$f(x) = \sqrt{(\sqrt{x-4} + 2)^2} = \sqrt{x-4} + 2$$

$$g(x) = \sqrt{(\sqrt{x-4} - 2)^2} = \sqrt{x-4} - 2$$

$$f(x) + g(x) = 2\sqrt{x-4} \quad x^2 - 14(x-4) = x^2 - 14x + 56 = (x-1)^2$$

$$a = 0$$

$$b = 2$$

$$c = -4$$

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

$$\frac{a+b}{c} = \left[-\frac{1}{2}\right]$$

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

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

$$x = 0 \text{ بانی}$$

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

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

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

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

$$2g(x+1) = \left\{ (-2, 1), (1, 3), (3, 6), (-1, 1) \right\}$$

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

$$x = 2, 3, -2$$

$$h(2) = 2 \times 1 + 3 = 5$$

$$h(3) = 2 \times 1 + 3 = 5$$

$$h(-2) = 2 \times 0 + 4 = 4$$

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

$$\sqrt{3x} - x \geq 0$$

$$0 \leq x \leq 3$$

$$x \neq 2$$

$$g(x) = [x] + [-x]$$

$$f \text{ منفی} \\ 0, 1, 2, 3 \Rightarrow D = \left\{ 3, 1, 0 \right\}$$

آثر صحیح باشد = 1-

آثر صحیح باشد = 0

پایزدهم سیران در شبها A

تکلیف شماره ۷

امیر رضا مؤذن

$$h(1) = \frac{\sqrt{0-1-4}}{3} = 0$$

$$20 - 20 - 4 = -4 < 0$$

$$x < 0$$

در دامنه نیست

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

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

$$h(4) = \frac{\sqrt{20-16-4}}{6} = 0$$

$$y = x^3 - 3x^2 + 3x \Rightarrow y = (x-1)^3 + 1 \quad R_y = \mathbb{R} \quad \text{الف}$$

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

$$R = (-\infty, -1] \cup (0, +\infty) \quad \text{ب}$$

$$\text{الف)} y = (x-2)^2 + 6 \quad R = [6, +\infty) \quad a=1 \quad b=-4 \quad \frac{c}{a} = 2$$

$$\text{ب)} y = -(x-3)^2 + 12 \quad R = (-\infty, 12] \quad c = -1 \quad a = 1 \quad \frac{c}{a} = -1$$

$$\text{ج)} y = \sqrt{x^2 - 4x - 3} \quad R = [0, +\infty) \quad a=1 \quad b=-3 \quad \frac{c}{a} = 3 \quad -9 + 12 + 3 = 6$$

$$\text{د)} y = \sqrt{6x - x^2} \quad a=-1 \quad b=6 \quad \frac{c}{a} = -6 \quad -9 + 12 + 3 = 6 \quad 0 \leq x \leq 6 \quad 0 \leq y \leq 3$$

$$R = [0, 3]$$

$$\text{الف)} \text{ بزرگترین توان فرد است } R_f = \mathbb{R} \quad \text{طبق تذکر}$$

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$$\text{ج)} \text{ طبق تذکر برد } R \text{ است اما یک رادیکال هم دارد و منفی ها حذف می شوند} \quad R_f = [0, +\infty)$$

$$\text{د)} \text{ تمام مقادیر نامنفی} \quad R_f = [0, +\infty)$$

$$\text{الف)} y(x-2) = 3x+1$$

$$yx - 2y = 3x + 1$$

$$x(y-3) = 2y+1$$

$$x = \frac{2y+1}{y-3}$$

$$y \neq 3 \quad R_f = \mathbb{R} - \{3\}$$

$$\text{ب)} y(x+1) = 2x+1$$

$$yx + y = 2x + 1$$

$$x(y-2) = 1-y$$

$$x = \frac{1-y}{y-2} \quad y \neq 2$$

$$R_f = \mathbb{R} - \{2\}$$