

از سه ریشه درجه دوم:

$$a=1, b=p, c=-2$$

$$\frac{p}{-2} = \frac{-1}{p}$$

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

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

$$(2) f(x) = x^2 \left((1, \frac{1}{x}) \cup (1, \frac{\infty}{0}) \cup (0, \frac{1}{0}) \right) \rightarrow g = \left\{ (1, \frac{1}{x}) \cup (0, \frac{1}{x}) \right\}$$

$$f(pq) = \left\{ (\frac{1}{p}, q) \cup (\frac{1}{p}, \infty) \cup (0, \frac{1}{q}) \right\}$$

$$(3) \text{ ب) } f(x^p) = \left\{ (1, \frac{1}{x^p}) \cup (1, \frac{\infty}{0}) \cup (0, \frac{1}{x^p}) \right\}$$

$$(1) \frac{pf}{g} = \left\{ (1, \frac{1}{x}) \cup (1, \frac{\infty}{p}) \cup (0, \frac{1}{x}) \right\}$$

$$(2) pg^p(x)+1 = \left\{ (-1, 1) \cup (1, \infty) \cup (0, \infty) \cup (-1, 1) \right\}$$

$$(1) = \left\{ (1, \frac{1}{x}) \cup (1, \frac{\infty}{p}) \right\} \times$$

$$(4) h = pf + g = \left\{ (1, \infty) \cup (1, \infty) \cup (-1, \infty) \right\}$$

$$g(x) = [n] + [-n] \rightarrow x \in \mathbb{Z} = 0$$

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

(5)

$$\sqrt{x} \geq n \rightarrow x \geq n^2$$

$$1 \rightarrow n \neq \mathbb{Z} = -1$$

$$x \neq 1$$

$$D_f = \mathbb{Z}$$

جواب

(6)

$$h(x) = \frac{f(x)}{g(x)}$$

$$g(x) = \left\{ (1, 2) \cup (2, 3) \cup (3, 4) \cup (4, 5) \right\}$$

$$h(x) = \left\{ (1, 2) \cup (2, \frac{\sqrt{2}}{2}) \cup (3, 4) \right\}$$

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

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

$$(7) \text{ الف } y = x^3 - 2x^2 + 1 \neq 1 \Rightarrow y = (x-1)^3 + 1 = y \quad \boxed{R_f = \mathbb{R}}$$

(8)

$$\text{ب) } yx^2 - px - 1 = 0$$

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

$$x = \sqrt{y-1} + 1$$

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

$$\Sigma y(y+1) \geq 0$$

$$\text{الف) } y = x^2 - 2x + 1 \Rightarrow x = 1 - \sqrt{y}$$

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

$$R_f = [1, +\infty)$$

(9)

$$\text{ب) } f = -x^2 + 4x + 1$$

$$\frac{y}{-p} = 1$$

$$-9 + 11 + 1 \rightarrow R_f = (-\infty, 11]$$

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

$$\rightarrow S(1, -1)$$

$$\rightarrow R_f = [0, +\infty)$$

$$3) y = \sqrt{-x^2 + 4x}$$

$$\rightarrow S(1, 4)$$

$$\rightarrow R_f = [0, 11]$$

$$\text{الف) } R = \text{مجموعه مقادیر } y = R_f$$

(10)

$$\text{ب) } R_f = \mathbb{R}$$

$$2) R_f = [0, +\infty)$$

$$3) R_f = [0, +\infty)$$

$$\text{الف) } R_f = \mathbb{R} - \{1\}$$

(11)

$$\text{ب) } R_f = \mathbb{R} - \{1\}$$