

۱۸,۵

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

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

$$\frac{a+b}{c} = \frac{0+2}{-4} = -\frac{1}{2}$$

$$b=2$$

$$c=-4$$

$$a=0$$

$$x=1 \rightarrow f(1) = \sqrt{1+4}\sqrt{1-4} = 5 \rightarrow f(1)+g(1) \Rightarrow a+b\sqrt{1+c} = 5$$

$$\rightarrow g(1) = \sqrt{1-4}\sqrt{1-4} = 0$$

$$x=9 \rightarrow f(9) = \sqrt{9+4}\sqrt{9-4} = \sqrt{(2+\sqrt{5})^2} = 2+\sqrt{5}$$

$$\rightarrow g(9) = \sqrt{9-4}\sqrt{9-4} = \sqrt{(2-\sqrt{5})^2} = \sqrt{5}-2$$

$$\rightarrow b(\sqrt{1+c}-\sqrt{9+c}) = 2(2-\sqrt{5})$$

$$f = \frac{x+2}{x^2-4x+4} = \frac{x+2}{(x-1)(x-3)} \xrightarrow{x=2} -\frac{4}{1} = -4$$

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

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

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

$$h(x) = g^2(x) + 1 = \left\{ (2, 8), (2, 3), (3, 9), (-1, 1) \right\}$$

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

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

$$g(x) = \left\{ (-2, 2), (1, -1), (3, 2), (-1, 0) \right\}$$

$$p \frac{f}{g} = \{1, 3\}$$

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

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

$$x \neq 2 \rightarrow \frac{f(x)}{g(x)+1} = \frac{\sqrt{3x-x}}{x-2} \rightarrow \frac{\sqrt{2x-x}}{[x]+[-x]+1}$$

$$\rightarrow \frac{\sqrt{2x-x}}{(x-2)([x]+[-x]+1)} \rightarrow \sqrt{2x-x} \geq 0 \rightarrow x \leq \sqrt{2x}$$

$$x^2 \leq 2x$$

$$x^2 - 2x \leq 0$$

$$x(x-2) \leq 0$$

$$D = \{0, 1, 3\}$$

$$x \neq 2 \quad x \in \mathbb{Z}$$

$$1 + 1 - 1 + 1$$

$$f(n) = \sqrt{\omega n^2 - n} - \varepsilon \rightarrow -(n^2 - \omega n + \varepsilon) \geq 0 \quad + \frac{1}{1 + \frac{1}{\omega}}$$

$$g(n) = \{(1, r), (r, r), (\varepsilon, \varepsilon), (\omega, 1)\}$$

$$g(m) = \{(1, 1), (1, 2), (2, 1), (2, 2)\}$$

$$h(x) = \frac{f(x)}{g(x)} = \{(1, 0), (2, 1), (3, 0)\}$$

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در صورت سوال گفته شده بارش امنی برد مصالحه
 $y = x^3 - x^2 + x \rightarrow R_f \checkmark IR$
 شود!

$y^2 \frac{1}{n^2 - 2n} \rightarrow 1 = \frac{y^2 - 2yn}{y^2 - 2yn + 1} \rightarrow \Delta \geq 0 \rightarrow 4y^2 + 4y \geq 0$
 $4y(y+1) \geq 0 \rightarrow \frac{1}{+1} - \frac{0}{-1} = 1$
 $\frac{1}{n^2 - 2n} = 0 \rightarrow n \in \mathbb{R}$
 $R_f \subset (-\infty, -1] \cup [0, +\infty)$
 با فرض ۱ عبارت
 با فرض ۲ فرض کردیم

Y

$$y = x^{n+1} \xrightarrow{a > 0} x_5 = 4 \rightarrow [4, +\infty)$$

$$y = -\frac{n^2 + 4n + 1}{a} \rightarrow y_{s1} = \frac{-4}{-1} = 4$$

$$y_{s2} = 11 \rightarrow (-\infty, +11]$$

$$y_2 \sqrt{n^2 - \epsilon n - v} \xrightarrow{a \rightarrow \infty} y_2 z - v \xrightarrow{\sqrt{\cdot}} [0, +\infty) \quad \frac{-\Delta}{\epsilon a} \approx -\frac{(14+12)}{\epsilon \times 1} \approx -v$$

$$y_2 \sqrt{y_n - n^2} \rightarrow y_5 = \frac{-\Delta}{\varepsilon_0} = \frac{-\gamma_4}{-\varepsilon} = 9 \sqrt{[5, 17]}$$

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$$y_2 = n^r - \omega n^r + r_{n+1} \rightarrow \mathbb{R}$$

$$y_2 n^V - y_2 n^F + r_2 n + r \rightarrow IR$$

$$y \approx \sqrt{n^5 - 4n^5 + 2n + 1} \rightarrow [0, +\infty)$$

فقط حاصل یک عبارت با توان ۲ نامتناهی است! $(\mathbb{R})^2 = [0, +\infty)$

1,2

$$y_2 = \frac{r_{n+1}}{n-r} \rightarrow \mathbb{R} - \{r\}$$

$$y = \frac{yn+1}{n+1} \rightarrow \cancel{1R} - \{x\}$$

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الف) $y = n^3 - 3n^2 + 2n - 1 + 1 = y = (n-1)^3 + 1$ (۷)

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

$R_f = \mathbb{R}$

ب) $y = \frac{1}{n^2 - 2n} \rightarrow n^2 y - 2ny = 1 \rightarrow n^2 y - 2ny - 1 = 0$

$y \neq 0 \rightarrow n = \frac{2y \pm \sqrt{4y^2 + 4y}}{2y} \rightarrow 4y(y+1) \geq 0 \rightarrow \frac{-1}{+} \frac{0}{+}$

$y = 0 \rightarrow 0 = 1 \times$ حقیقی وجود ندارد! $\rightarrow R_f = (-\infty, -1] \cup (0, +\infty)$