

$$f(n) = \sqrt{(n-2)+1}^2 \text{ و } g(n) = \sqrt{(n-2)-1}^2$$

(1)

$$f(n) + g(n) = a + b\sqrt{n+c} \Rightarrow |\sqrt{n-2}+1| + |\sqrt{n-2}-1| =$$

$$\sqrt{n-2}+1 + \sqrt{n-2}-1 = 2\sqrt{n-2} = a+b\sqrt{n+c} = \frac{a+b}{c} = \left| -\frac{1}{2} \right|$$

$$f(n) = \{(2, -1), (0, 1)\} \quad g_f = \{(2, -1/2), (0, 1)\}$$

(2)

$$f(n) \rightarrow \{(1/2, 2), (1/2, -1), (2, 1), (-1/2, 2)\}$$

(3)

$$b) f(n) \rightarrow \{(1, 2), (\sqrt{c}, -1), (2, 2), (-1, 2), (-\sqrt{3}, -1), (-2, 2)\}$$

$$c) 2g^2(n) + 1 \rightarrow \{(-2, 19), (1, c), (c, 4), (-1, 11)\}$$

$$d) \frac{f}{g} \rightarrow \{(1, -1), (c, -1)\}$$

$$2f: (2, 2), (c, 2), (2, 18), (-2, 0) \\ h: 2f+g \rightarrow \{(2, 5), (c, 5), (2, 4)\}$$

(4)

$$1) \frac{f}{g+1}(n) \rightarrow g+1 \neq 0 \quad g \neq -1$$

$$s: n \in \mathbb{Z} \rightarrow g(n) \in \mathbb{Z}$$

(5)

$$2) m \gamma, 0 \quad m \gamma, 0 \quad m+2$$

$$s: n \notin \mathbb{Z} \rightarrow g(n) = -1 \checkmark$$

$$c) \sqrt{c}m - m \gamma, 0 \quad \sqrt{c}m \gamma, m \quad cm \gamma, m^2 \quad m^2 - cm \leq 0$$

$$m(m-c) \quad \begin{array}{c} 0 \quad c \\ + \quad - \quad + \\ \hline \end{array} \quad \{0, c\}$$

$$Q(5, 1) \rightarrow \{0, 1, c\}$$

استدلال می‌کنیم

$$f(n) = \{(1, 0), (2, \sqrt{2}), (4, 0)\}$$

$$\frac{f(n)}{g(n)} = \{(1, 0), (2, \frac{\sqrt{2}}{2}), (4, 0)\}$$

(6)



⑤

$$j = n^c - Cn^r + Cn \quad R, IR \quad (n-1)^c + 1 = j \quad j = 1 + (n-1)^c$$

$$n-1 = \sqrt[j]{j-1} \quad n = 1 + \sqrt[j]{j-1}$$

$$ج) j = \frac{1}{n^r + v} \rightarrow j^{n^r} - r j^n - 1 = 0$$

$$r j \pm \sqrt{b^2 - 4ac} \quad b^2 - 4ac > 0$$

$$r j$$

$$R_f : (-\infty, -1] \cup (0, +\infty) \quad \Sigma y^2 + \Sigma y > 0 \quad y^2 + y > 0 \quad \frac{-1 \pm \sqrt{1+4}}{2}$$

$$اخر) \frac{-b}{2a} \rightarrow \frac{+4}{2} = 2 \quad \Sigma -1 + 1 = 0 \quad R_f [2, +\infty)$$

①

$$ب) \frac{-b}{2a} = \frac{-4}{-2} = 2 \quad -9 + 12 = 3 \quad R_f (-\infty, 12]$$

$$ج) \frac{-b}{2a} = +2 \rightarrow \Sigma -1 - 1 = -2 \quad \Sigma -4, +\infty) \rightarrow R_f (\Sigma, +\infty)$$

$$د) \sqrt{-n^2 + 4n} \quad \frac{-b}{2a} \Rightarrow 0 \quad -9 + 12 = 3 \quad \Sigma, 0]$$

$$اخر) R_f = IR$$

$$ج = \Sigma, +\infty)$$

④

$$ب = IR$$

$$د = \Sigma, +\infty)$$

$$اخر) IR - \{2\}$$

③

$$ب) IR - \{2\}$$