

۱. آزمون تارگی هوش ۲۰ دقیقه

ساخته شده است

①

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

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

$$\sqrt{n-2} + 1 + \sqrt{n-2} - 1 = 2\sqrt{n-2} = a + b\sqrt{m+c} = \frac{a+b}{c} = \underline{\underline{2/1}}$$

۲

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

۲

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

۳

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

$$c) 2g^2(n) + 1 \rightarrow \{(-2, 19), (1, 9), (2, 4), (-1, 11)\}$$

$$d) \frac{f}{g} \rightarrow \{(1, -1), (2, -1)\}$$

$$\begin{aligned} 2f &= (2, 2), (2, 2), (4, 18), (-2, 0) \\ h = 2f + g &= (2, 5), (2, 5), (2, 4) \end{aligned}$$

۴

۵

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

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

۶

$$② \quad n \in \mathbb{Z} \quad n \in \mathbb{Z} \quad n+2$$

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

$$③ \quad \sqrt{cm} - n \in \mathbb{Z} \quad \sqrt{cm} \in \mathbb{Z} \quad cm \in \mathbb{Z} \quad n^2 - cm \leq 0$$

$$\frac{n^2 - cm}{n(n-c)} = \frac{0}{+ \quad - \quad +} = \{0, c\}$$

$$④ \quad 0, 1 \rightarrow \{0, 1, c\}$$

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

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

۷



۸

$$j = n^c - Cn^r + C_n \quad R \cap \mathbb{R} \quad (n-1)^c + 1 = j$$

$$n-1 = \sqrt{j-1} \quad m = 1 + \sqrt{j-1} \quad j = 1 + (n-1)^c$$

$$ج) j = \frac{1}{m^2 + v} \rightarrow j^{m^2} - r_j m - 1 = 0$$

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

$$r_j$$

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

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

$$ب) \frac{-b}{2a} = \frac{-4}{-2} = 2 \quad -9 + 18 + C = 14 \quad R_f (-\infty, 12]$$

$$ج) \frac{-b}{2a} = +2 \rightarrow \Sigma -1 - C_2 - v \quad \Sigma -v, +\infty) \rightarrow R_f (\Sigma, +\infty)$$

$$د) \sqrt{-n^2 + 4n} \quad \frac{-b}{2a} \Rightarrow 0 \quad -9 + 18 = 9 \quad \Sigma, 9]$$

$$الف) R_f = \mathbb{R} \quad \Sigma = \Sigma, +\infty)$$

$$ب) \mathbb{R} \quad \Sigma = \Sigma, +\infty)$$

$$الف) \mathbb{R} - \{+1\}$$

$$ب) \mathbb{R} - \{+1\}$$