

و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس

۱۹.۲۵ آخرین

$$\sqrt{x-f} = t \rightarrow f(x) = \sqrt{t^2 + f + ft} = |t+2| \frac{x-1}{t^2} \rightarrow f(x) = t+2$$

$$g(x) = \sqrt{t^2 + f - ft} = |t-2| \frac{x-1}{t^2} \rightarrow g(x) = t-2$$

$$\Rightarrow f(x) + g(x) = a + b\sqrt{x+c}$$

$$2t = 2\sqrt{x-f} = a + b\sqrt{x+c} \Rightarrow a=0, b=2, c=-f$$

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

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

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

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

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

$$ج) 2g'(x) + 1 = \left\{ \left(-2, 9\right), \left(-1, 1\right), \left(1, 3\right), \left(2, 9\right) \right\}$$

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

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

$$g(x) + 1 \neq 0 \rightarrow g(x) \neq -1 \rightarrow x \in \mathbb{Z}$$

$$f(x) = \sqrt{\frac{\sqrt{3}x - x}{x-1}} \rightarrow \begin{cases} 1) x \geq 0 \\ 2) x \neq 1 \end{cases}$$

$$D_f = \mathbb{Z} \setminus \{1\}$$

$$D_{\frac{f}{g+1}} = \{0, 1, 2\}$$

$$\sqrt{3n} - n \geq 0 \rightarrow \sqrt{3n} \geq n \rightarrow n^2 - 3n \leq 0 \rightarrow 0 \leq n \leq 3, n \neq 1$$

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$$f(x) = \sqrt{-x^2 + 6x - 4} \rightarrow \frac{1}{-x+4} \rightarrow D_f = [1, 4] \rightarrow \{(1,0), (2, \sqrt{2}), (4,0)\}$$

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

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$$\text{الف) } y = (x-1)^3 + 1 \Rightarrow \sqrt[3]{y-1} + 1 = x \Rightarrow R_f = \mathbb{R}$$

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

$$R_f = \mathbb{R} - (-1, 0]$$

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$$\text{الف) } x_5 = 2 \rightarrow y_5 = 4 \rightarrow R_f = [4, +\infty)$$

$$\text{ب) } x_5 = 3 \rightarrow y_5 = 12 \rightarrow R_f = (-\infty, 12]$$

$$\text{ج) } x^2 - 4x - 3 \rightarrow x_5 = 1, y_5 = -7 \rightarrow R_f = [0, +\infty)$$

$$\text{د) } -x^2 + 4x \rightarrow x_5 = 3, y_5 = 9 \rightarrow R_f = [0, 3]$$

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$$\text{الف) } R_f = \mathbb{R}$$

$$\text{ب) } R_f = \mathbb{R}$$

$$\text{ج) } R_f = [0, +\infty)$$

$$\text{د) } R_f = [0, +\infty)$$

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$$\text{الف) } R_f = \mathbb{R} - \{3\}$$

$$\text{ب) } R_f = \mathbb{R} - \{2\}$$

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$$f(n) = \frac{\sqrt{r^2 n} - n}{n - r} \rightarrow \begin{cases} n \neq r \\ n > 0 \end{cases} (\sqrt{r^2 n}) \rightarrow Df = [0, r] - \{r\} \quad (\omega)$$

$\sqrt{r^2 n} - n > 0 \rightarrow r^2 n \geq n^2 \rightarrow 0 \leq n \leq r$

$$g(n) + 1 \neq 0 \rightarrow g(n) \neq -1 \rightarrow [n] + [-n] \neq -1 \rightarrow n \in \mathbb{Z}$$

$$D \frac{f}{g+1} = \left\{ Df \cap Dg, g(n) \neq -1 \right\} = \left\{ 0, 1, r \right\}$$

$[0, r] - \{r\} \cap \mathbb{Z}$