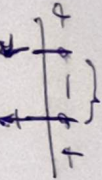


۱۷۷۵

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس A	۱	۲	۳	۴	۵
	$f(a) = \sqrt{a+1} \sqrt{a-4} \Rightarrow \sqrt{(a+1)(a-4)} \Rightarrow \sqrt{a^2-3a-4}$ $g(a) = \sqrt{a^2-3a-4} \Rightarrow \sqrt{(a-4)(a+1)} \Rightarrow \sqrt{a-4} \sqrt{a+1}$ $\sqrt{a-4} \sqrt{a+1} \Rightarrow \sqrt{a-4} \Rightarrow a \neq 1, 3$ $\left\{ \frac{a+b}{c} = \frac{a^2}{-4} = \frac{a^2}{-4} \right\}$	$f(a) = \frac{a+5}{a^2-4a+4} \Rightarrow \frac{a+5}{(a-2)^2} \Rightarrow (a-2) \neq 0 \Rightarrow a \neq 2$ $g(2) = 1, \quad g(4) = 4$ $f(2) = \frac{2+5}{2^2-4 \cdot 2+4} \Rightarrow -4 \quad f(4) = \frac{4+5}{4^2-4 \cdot 4+4} = \frac{9}{4}$	$f(2a) \Rightarrow \{ (1, 2), (3, 2) \}$ $f(a) \Rightarrow \{ (1, 1), (2, 1), (3, 1), (4, 1) \}$ $f(a) \Rightarrow \{ (1, 1), (2, 1), (3, 1), (4, 1) \}$	$D_f \cap D_g \Rightarrow \{ 2, 4 \}$ $h \circ f \circ g \Rightarrow h \circ \{ (2, 4), (3, 4) \}$ $h(2) = 2(2) + 3 = 7, \quad h(3) = 2(3) + 3 = 9$ $h(4) = 2(4) + 3 = 11$	$f(a) \geq 0 \Rightarrow a \geq 0, \quad \sqrt{a+1} \geq a \Rightarrow a \leq 1$ $\Rightarrow [0, 1]$ $g(a) \neq 0 \Rightarrow g \neq -1 \Rightarrow a \in \mathbb{Z}$ $I \cap II \Rightarrow \left(\frac{f}{g+1} \right)(a) \Rightarrow \{ 2, 3 \}$

$$f(x) = \sqrt{x^2 - 6x + 4} \rightarrow -(x-1)(x-4) \geq 0 \rightarrow$$


$$(x-1)(x-4) \leq 0$$

$$h(x) = \frac{f(x)}{g(x)} = \frac{(x-1)(x-4)}{(x-1)(x-4)} \rightarrow$$

$$y = \frac{x^2 - 4x + 4}{x^2 - 4x + 4} \rightarrow \text{برای هر } x \text{ که } x \neq 1, 4 \rightarrow R - \{1, 4\}$$

$$y = \frac{x^2 - 4x + 4}{x^2 - 4x + 4} \rightarrow y = 1 \rightarrow y = 1 \rightarrow y = 1$$

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$$Df = \mathbb{R} - \{1, 3\} \quad (x^2 - 4x + 3 \neq 0 \rightarrow x \neq 1, 3) \quad (2)$$

$$Df \cap Dg = \{2, 0\} \rightarrow \frac{g}{f} = \left\{ \left(2, -\frac{1}{2}\right), (0, 4) \right\}$$

$$f(x_n) = \left\{ \left(\frac{1}{2}, 2\right) \left(\frac{5}{2}, -1\right) (2, 2) \left(-\frac{1}{2}, 4\right) \right\} \quad x \text{ های } f \text{ باید مقیم بر ۲ شوند!} \quad (3)$$

$$f(x_n) = \left\{ (1, 2) (-1, 2) (\sqrt{3}, -1) (-\sqrt{3}, -1) (2, 2) (-2, 2) \right\} \quad \text{هرکدام از } x \text{ های } f \text{ را برابر } x^2 \text{ قرار دهیم!}$$

$$f(g^{-1}(x)) + 1 = \left\{ (-2, 19) (1, 3) (3, 9) (-1, 1) \right\} \quad \text{این عمل روی } y \text{ های و اعمال میشود:}$$

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

$$\text{الف) } y = x^3 - 2x^2 + 2x - 1 + 1 = y = (x-1)^3 + 1 \quad (4)$$

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

$$R_f = \mathbb{R}$$

$$\text{ب) } y = \frac{1}{x^2 - 2x} \rightarrow x^2 y - 2x y = 1 \rightarrow x^2 y - 2xy - 1 = 0$$

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

$$\underline{y = 0} \rightarrow 0 = 1 \quad x \text{ صحتی وجود ندارد!} \rightarrow R_f = (-\infty, -1] \cup (0, +\infty)$$

