

نام و نام خانوادگی: آریسا علیا پاسخنامه تشریحی تکلیف شماره ... ۷ ... کلاس: یازدهم، دبیر: ...

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

$$(f(x) + g(x))^2 = x+4 \sqrt{x-4} + x-4 \sqrt{x+4} + 2\sqrt{x^2-16}(x-4)$$

$$2x + 2\sqrt{x^2-16x+4^2} \rightarrow 2x + 2\sqrt{(x-4)^2} \rightarrow 2x + 2|x-4| = 4x-14 \rightarrow \sqrt{4x-14} = 2\sqrt{x-4}$$

$$a+b\sqrt{x+c} = 2\sqrt{x-4} \rightarrow a=0, b=2, c=-4 \rightarrow \frac{a+b}{c} = \frac{-1}{4}$$

$$f(x) = \frac{x+2}{x^2-4x+3} \Rightarrow x \neq 1, 3 \quad g(x) = \left\{ (2,1), (1,2), (3,2), (2,3) \right\}$$

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

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

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

الف)

ج)

$$f(x^2) =$$

$$\left\{ (1, 2), (-1, 2), (\sqrt{3}, 1), (-\sqrt{3}, -1), (2, 2), (-2, 2) \right\}$$

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

ب)

د)

$$f(x) = \left\{ (2,1), (3,1), (4,9), (-2,0) \right\}$$

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

$$h = 2f + g = \left\{ (2, 5), (-2, 9), (3, 5) \right\}$$

$$f(x) = \frac{\sqrt{3x-x}}{x-2}$$

$$x > 0 \quad x+2$$

$$\sqrt{3x-x} > 0 \rightarrow \sqrt{3x} > 0 \rightarrow x < \sqrt{3x} \rightarrow -3x < x^2 < 3x$$

$$g(x) = [x] \cdot [-x]$$

$$-3 \leq x \leq 3$$

$$\left(\frac{f}{g+1}\right)(x) \rightarrow D = [0, 1, 3]$$

$f(x) = \sqrt{2x - x^2 - 4} \quad x \neq \pm 2 \quad g(x) = \{(1, 3)(2, 1)(3, 4)(\cancel{2, 1})\}$ $h(x), \frac{f(x)}{g(x)} = \{(1, 0)(2, \frac{1}{\sqrt{x}})(3, 0)\}$				6
$y = x^3 - 3x^2 + 3x$ $y = x^3 - 3x^2 + 3x + 1 - 1$ $y - 1 = (x - 1)^3$ $(x - 1)^3 = y - 1 \rightarrow x = \sqrt[3]{y - 1} + 1 \rightarrow R_f = \mathbb{R}$		$y = \frac{1}{x^2 - 4x}$ $yx^2 - 4xy - 1 = 0$ $b^2 - 4ac = 16y^2 + 4y = 0 \quad \frac{-1 \pm 0}{\pm 1 \pm 1}$ $R_f = (-\infty - 1] \cup [0 + \infty)$		7
ا))	ب))			
$y = x^2 - 4x + 10$ $x_{\min} \left \pm \frac{4}{2} = 2 \right.$ $y_{\min} \left 4 - 10 + 10 = 4 \right.$ $R_f = [4 + \infty)$	$y = -x^2 + 4x + 3$ $x_{\max} \left \frac{-4}{-2} = 2 \right.$ $y_{\max} \left -9 + 16 + 3 = 10 \right.$ $R_f = (-\infty 10]$	$y = \sqrt{x^2 - 4x - 3}$ $x_{\min} \left \pm \frac{4}{2} = 2 \right.$ $y_{\min} \left 4 - 16 - 3 = -9 \right.$ $R_f = [0 + \infty)$	$y = \sqrt{4x - x^2}$ $x_{\max} \left \frac{-4}{-2} = 2 \right.$ $y_{\max} \left 16 - 9 = 9 \right.$ $R_f = [0 3]$	8
ا))	ب))	ج))	د))	
$y = x^3 - 2x^2 + 2x + 1$ $R_f = \mathbb{R}$	$y = x^3 - 4x^2 + 3x + 2$ $R_f = \mathbb{R}$	$y = \sqrt{x^2 - 4x^2 + 2x + 1}$ $R_f = [0 + \infty)$	$y = (x^2 - 4x^2 + 3x + 1)^2$ $R_f = [0 + \infty)$	9
ا))	ب))	ج))	د))	
$y = \frac{3x + 1}{x - 2}$ $\mathbb{R} - \left\{ \frac{a}{c} \right\} = \mathbb{R} - \left\{ \frac{3}{-2} \right\}$		$y = \frac{2x + 1}{x + 1}$ $\mathbb{R} - \left\{ \frac{a}{c} \right\} = \mathbb{R} - \left\{ \frac{1}{1} \right\}$		10
ا))		ب))		