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نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۷... کلاس ... دبیر ...

$$x \times f(x) \geq 0$$

	-۵	-۲	۰	۲	۵
$f(x)$	+	-	-	+	+
x	-	-	+	+	+
	-	+	-	-	+

$$\rightarrow D_f = [-5, 0] \cup [2, 5]$$

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$$y = \sqrt{\frac{-x}{f(x)}} \rightarrow \frac{-x}{f(x)} \geq 0$$

	-۴	-۳	۰	۲	۵
$f(x)$	-	+	-	+	+
$-x$	+	+	-	-	-
	-	+	+	+	-

$$\rightarrow D_f = (-3, 2) - \{0\} \cup \{-1\}$$

~~$\{0\}$~~ ~~$\{-1\}$~~ ~~$\{2\}$~~ ~~$\{-4\}$~~ ~~$\{-5\}$~~ ~~$\{5\}$~~

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$$f(x) - x f(x) = x^2 - x^2 + x \Rightarrow -f(x) = x \rightarrow f(x) = -x$$

$$f(x) - x(-x) = x^2 - x^2 + x \rightarrow f(x) = x^2 - x$$

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$$f(-x) = (-x)^2 - x(-x) \Rightarrow x + x = 10$$

$$f(1) = 1 \times 1 + 1 = 2 \rightarrow f(5) = 5 - \sqrt{1+5} = 5 - 2 = 3$$

$$f(5) \rightarrow 3 \rightarrow f(2) = 2 \times 2 + 3 = 7$$

$$f(f(5)) + f(f(1)) = 3 + 7 = 10$$

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$$f(x) = ax^2 - bx + c$$

$$f(x-1) = a(x-1)^2 - b(x-1) + c = ax^2 + a - 2ax - bx + b + c = x^2 + 1 - 2x$$

$$f(x-1) - f(x) = 4x + 1 \rightarrow ax^2 - 2ax - bx + b - ax^2 + bx - c = 4x + 1$$

$$\rightarrow -2ax + a + b = 4x + 1 \rightarrow 4 = -2a \rightarrow a = -2$$

$$\rightarrow a + b = 1 \rightarrow -2 + b = 1 \rightarrow b = 3 \Rightarrow a - b = -2 - 3 = -5$$

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$$f(x) = \frac{x^4 + 4x + 5}{x^4 + 4x + 5} = \frac{(\sqrt{5}-1)^4 + 4(\sqrt{5}-1) + 5}{(\sqrt{5}-1)^4 + 4(\sqrt{5}-1) + 5} = \frac{5 + 4 - 4\sqrt{5} + 4\sqrt{5} - 4 + 5}{5 + 4 - 4\sqrt{5} + 4\sqrt{5} - 4 + 5} = \frac{5 - 4 + 5}{5 - 4 + 5} = \frac{6}{6} = 1$$

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$$f(x) = \frac{(x+1)^4 + 1}{(x+1)^4 + 1} = \frac{(\sqrt{5}-1+1)^4 + 1}{(\sqrt{5}-1+1)^4 + 1} = \frac{1+1}{1+1} = \frac{2}{2} = 1$$

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$$x - \frac{1}{x} = -3$$

$$f(x - \frac{1}{x}) = \frac{x^4 + 1}{x^4} = \frac{x^4}{x^4} + \frac{1}{x^4} = x^0 + \frac{1}{x^4} \rightarrow f(-3) = (-3)^4 + 1 = 82$$

$$x \Rightarrow (x - \frac{1}{x})^4 = x^4 + \frac{1}{x^4} + 4x^2 + \frac{4}{x^2}$$

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1, 10

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$$g(x) = \sqrt{9 - x^2} \rightarrow 9 - x^2 \geq 0 \rightarrow 3 \geq x^2 \rightarrow 3 \geq x \geq -3 \rightarrow D_f = [-3, 3]$$

$$f(x) = \{(2, 0), (1, -3), (0, 2), (3, 1)\} \rightarrow D_f = \{2, 1, 0, 3\}$$

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$$D_f = \{x, 1, 0\} \rightarrow$$

$$D_f = \{2, 1, 0\}$$

$$a) \frac{f}{g} = \{(2, \frac{0}{2}), (1, \frac{-3}{1}), (0, \frac{2}{0})\}$$

$$b) \frac{g}{f} = \{(2, \frac{0}{0}), (1, \frac{3}{-3}), (0, \frac{2}{2})\}$$

$$c) \frac{f}{g} = \{(1, \frac{3}{-3}), (0, \frac{2}{2})\}$$

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$$a) f(x) = \{(2, 2), (3, 1), (-5, 4), (1, -4)\}$$

$$b) f(x) + 1 = \{(2, 3), (3, 2), (-5, 5), (1, -3)\}$$

$$c) 3f(x) + 1 = \{(2, 7), (3, 4), (-5, 13), (1, 13)\}$$

$$d) f(2x) = \{(1, 1), (\frac{3}{2}, 4), (\frac{-5}{2}, 2), (\frac{1}{2}, -4)\}$$

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$$f(x) \rightarrow D_f = \{2, 3, 1, 3, 5\}$$

$$g(x) \rightarrow D_g = \{1, 2, -1, -2, 3\}$$

$$D_f \cap D_g = \{1, 2, 3\}$$

$$D_f = \{x, 2, 3\}$$

$$b) \frac{f}{g} = \{(1, \frac{2}{1}), (2, \frac{3}{-1}), (3, \frac{3}{3})\}$$

$$c) = \{(2, 2), (3, -3)\}$$

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$$a) f - g = \{(1, (2-0)), (2, (3-1)), (3, (3-3))\}$$

$$b) = \{(1, 2), (2, 2), (3, 2)\}$$