نام و نام خانوادگی ...امیررضا اکبری... پاسخنامه تشریحی تکلیف شماره ...۷... کلاس ...دهم A...

۱

$y = f(x)$

$y = \sqrt{x f(x)}$

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

		-5		0		2		5
x	−		−	0	+		+	
$f(x)$	+	0	−		−	0	+	0
$x f(x)$	−	0	+	0	−	0	+	0

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

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$y = \sqrt{\dfrac{-x}{f(x)}} \Rightarrow \dfrac{-x}{f(x)} \geq 0 \qquad f(x) \neq 0$

		-3		0		2		5
$-x$	+		+	0	−		−	
$f(x)$	−	0	+	0	−	0	+	0
$\dfrac{-x}{f(x)}$	−		+		+		−	

$D_f = (-3, 0) \cup (0, 2)$

$-3 < x < 0 \qquad 0 < x < 2$

۳

$f(2) - 2f(2) = 4 - 6 + 4 = 2 \qquad f(2) = -2$

$f(-2) - 2f(+2) = 4 + 6 + 4$

$f(-2) = 10$

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$f(f(5)) + f(f(1)) = 7 + 2 = 9$

$f(5) = 5 - \sqrt{9} = 2$, $f(2) = 2 \times 2 + 3 = 7$

$f(1) = 2 \times 1 + 3 = 5$, $f(5) = 2$

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$f(x-1) + f(x) = 6x + 2$

$f(0) + f(1) = 6 + 2 = 8$

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

$\Rightarrow f(0) = 2$

$2 + a - b + 2 = 8$

$a - b = 4$

۶

$f(x) = \frac{x^2+4x+5}{x^2+4x+7} = \frac{x^2+4x+4+1 \to (x+2)^2+1}{x^2+4x+4+3 \to (x+2)^2+3}$

$\frac{(\sqrt{3}-2+2)^2+1}{(\sqrt{3}-2+2)^2+3} = \frac{4}{6} = \frac{2}{3}$

۷

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

$(-3)^2 + 2 = 11$

۸

الف) $\frac{f}{g} = \{(0, \frac{2}{3}), (1, -\frac{4}{\sqrt{8}}), (2, \frac{0}{\sqrt{5}} = 0)\}$

ب) $\frac{g}{f} = \{(0, \frac{3}{3} = 1), (1, \frac{\sqrt{8}}{-4})\}$

۹

الف) $2f(x) = \{(2,2), (3,8), (-5,4), (1,-4)\}$

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

ج) $3f^2(x)+1 = \{(2,4), (3,49), (-5,13), (1,13)\}$

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

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الف) $f - g = \{(1,4), (2,2), (3,2)\}$

ب) $\frac{2f}{g} = \{(2,6), (3,-2)\}$