

راضی

سوال ۱) $y = f(x)$ $x=0$ $f(x)=0 \Rightarrow -5, -4, -3, 0, 1, 5$

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

x	-5	-4	-3	0	1	5
$f(x)$	+	0	-	-	0	+
$x f(x)$	-	0	+	0	-	+

$x f(x) \geq 0 \rightarrow D = [-5, 0] \cup [1, 5]$ ✓

سوال ۲) $y = \sqrt{\frac{-x}{f(x)}}$ $-x=0 \Rightarrow x=0$ $f(x)=0 \Rightarrow x=5, 4, -3, 0$

$-x$	+	+	0	-	-	-
$f(x)$	-	0	+	0	-	+
A	-	+	+	+	-	-

$D = (-3, 4) - \{0\}$ ✓

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سوال ۳) $f(x) - 2f(2) = x^2 - 4x + 9$

$f(2) - 2f(2) = x^2 - 4x + 9$

$-f(2) = 9 - 4 + 9$

$-f(2) = 14 \quad f(2) = -14$

$f(x) + 9 = x^2 - 4x + 9$

$f(x) = x^2 - 4x$

$f(-2) = 4 + 8 = 12$ ✓

اهداء صالحی

سوال (۴) $f(x) = \begin{cases} x - \sqrt{x+4} & x > 3 \\ 2x+3 & x \leq 3 \end{cases}$ $f(f(1)) + f(f(5)) =$
 $f(5) + f(3) = 9$

سوال (۵) $f(x) = ax^2 - bx + c$ $f(x-1) - f(x) = 4x + 2$

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

سوال (۶) $f(x) = \frac{x^2 + 5x + 4}{x^2 + 5x + 4}$

$\frac{(x^2 + 5x + 4) + 1}{(x^2 + 5x + 4) + 3} = \frac{(x+2)^2 + 1}{(x+2)^2 + 3} = \frac{(\sqrt{4-2+2})^2 + 1}{(\sqrt{4-2+2})^2 + 3} = \frac{2}{6} = \frac{1}{3}$

سوال (۷) $f(x - \frac{1}{x}) = \frac{x^2 + 1}{x^2}$ $f(-3) = ?$

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

$x - \frac{1}{x} = -3 \rightarrow (x - \frac{1}{x})^2 = (-3)^2 = x^2 + \frac{1}{x^2} - 2 = 9$

$x^2 + \frac{1}{x^2} = 11$

احداثی صاف

سوال ۸ $f(x) \{ (2, 0), (4, 1), (6, 1) \}$

$g(x) = \sqrt{9 - x^2}$ عرصہ در را با این رابطہ در من لکیم

الف $\frac{f}{g} = \left\{ (2, \frac{0}{\sqrt{5}}), (4, \frac{-4}{\sqrt{5}}), (6, \frac{2}{\sqrt{5}}) \right\}$

ب $\frac{g}{f} = \left\{ (1, \frac{\sqrt{5}}{-4}), (6, \frac{3}{2}) \right\}$

سوال ۹ $f(x) = \{ (2, 2), (3, 8), (-5, 4), (1, -4) \}$

ب $f(x) + 1 = \{ (2, 3), (3, 9), (-5, 5), (1, -3) \}$

ج $f(x) + 1 = \{ (2, 4), (3, 9), (-5, 13), (1, 13) \}$

$f(2x) = \left\{ (1, 1), (\frac{3}{2}, 4), (-\frac{5}{2}, 2), (\frac{1}{2}, -2) \right\}$ برعکس می شود

سوال ۱۰ $f - g = \{ (1, 4), (2, 2), (3, 2) \}$

الف $f - g = \{ (2, 3), (7, 1), (1, 5), (3, -2), (5, 1) \}$

$\{ (3, 4), (3, -2) \}$

ب $\frac{f}{g} = \left\{ (2, \frac{4}{3}), (7, \frac{1}{1}), (1, \frac{1}{5}), (3, \frac{2}{-3}), (5, \frac{1}{-3}) \right\}$