

$x f(x) \geq 0$ $D_f: [-5, 0] \cup [1, 5]$	۱
$\left. \begin{array}{l} x \geq 0, f(x) < 0 \rightarrow (0, 2) \\ x \leq 0, f(x) > 0 \rightarrow (-3, 0) \end{array} \right\} \cup \rightarrow (-3, 0) \cup (0, 2)$ اعداد صحیح: $\{-2, -1, 1\}$	۲
$f(2) - 2f(2) = 4 - 6 + 2 \rightarrow -f(2) = 2 \rightarrow f(2) = -2$ $f(-2) + 2 = 4 - 6 + 2 \rightarrow f(-2) = 1$	۳
$f(f(5)) \rightarrow 5 > 3 \Rightarrow 5 - 3 = 2 \rightarrow f(2) \rightarrow 2 < 3 \rightarrow 2 + 3 = 5$ $f(f(1)) \rightarrow 1 < 3 \Rightarrow 2 + 3 = 5 \rightarrow f(5) \rightarrow 5 > 3 \rightarrow 5 - 3 = 2$ $5 + 2 = 7$	۴
$f(x-1) = a(x-1)^2 - b(x-1) + 2 = ax^2 + a - 2ax - bx + b + 2$ $f(x) = ax^2 - bx + 2$ $a(x^2) + (-2a-b)(x) + a+b+2$ $a(x^2) + (-2a-b)(x) + a+b+2 - ax^2 + bx + 2 = 6x + 2$ $-2a(x) + a + b$ $-2a = 6 \Rightarrow a = -3$ $-3 + b = 2 \Rightarrow b = 5$ $a = -3, b = 5$ $-3 - 5 = -8$	۵

$$f'(3) = 2(9 - 9 + 1) = 2$$

$$f(-1) = 1 + 3 + 1 = 5$$

$$f'(1) = (1 - 9 + 1)' = 1$$

$$\frac{y+5}{1} = \underline{V}$$

6

$$3f(4) \geq 4 > 2 \rightarrow 3(14+1) = 39$$

$$-2f(-2) \Rightarrow -2 < 2 \rightarrow -2(4) = -8$$

$$f(2) \Rightarrow 2 = 2 \rightarrow 2+1 = 3$$

$$\frac{39-8}{3} = \frac{31}{3}$$

7

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

8

$$\frac{(x+1)^2 + 5}{(x+1)^2 + 1} = \frac{(\sqrt{x})^2 + 5}{(\sqrt{x})^2 + 1} = \frac{1}{x} = \underline{y}$$

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$$f(2) = \frac{19+5}{19+1} = \frac{24}{20} = \underline{\underline{6/5}}$$

$$(f(\sqrt{x}))' = \left(x + \frac{1}{x}\right)' = x' + \frac{1}{x^2} = \underline{\underline{x^{-1/2}}}$$

$$x^{1/2} + \frac{1}{x^{3/2}} - x^{1/2} - \frac{1}{x^{3/2}} = \underline{\underline{0}}$$

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