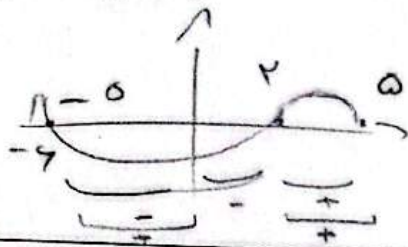


$$y = f(x)$$

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



$$f(x) = -5, 2, 5$$

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

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

(۲) ✓

$$y = \sqrt{-x}$$

$$\frac{-x}{f(x)} \geq 1 \rightarrow$$

$$\frac{x}{f(x)} \leq 0$$

$$f(x) = -3, 2, 5$$

$$f(x) < 0 \text{ و } x > 0$$

$$f(x) > 0 \text{ و } x < 0$$

$$f(x) < 0 \text{ و } x < 0$$

$$f(x) > 0 \text{ و } x > 0$$

$$f(x) < 0 \text{ و } x > 0$$

$$f(x) > 0 \text{ و } x < 0$$

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$$f(x) < 0 \text{ و } x < 0$$

$$f(x) > 0 \text{ و } x > 0$$

$$f(x) < 0 \text{ و } x > 0$$

$$f(x) > 0 \text{ و } x < 0$$

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

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

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

$$-f(2) = 2$$

$$f(2) = -2$$

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

$$f(-2) = 1$$

$$f(2) = -2$$

$$f(2) = -2$$

$$f(2) = -2$$

$$f(2) = -2$$

$$f(2) = -2$$

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$$f(2) = -2$$

$$f(2) = -2$$

$$f(2) = -2$$

$$f(f(5)) + f(f(1)) = ?$$

$$f(5) = 0 - 2 = -2$$

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

$$f(1) = 2 + 2 = 4$$

$$f(4) = 2$$

$$f(5) = -2$$

$$f(5) = -2$$

$$f(5) = -2$$

$$f(5) = -2$$

$$f(5) = -2$$

$$f(5) = -2$$

$$f(5) = -2$$

$$f(5) = -2$$

$$f(5) = -2$$

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

$$f(x-1) - f(x) = 4x + 2$$

$$a - b = ?$$

$$f(1) = a - b + 2$$

$$f(0) - f(1) = 4 + 2 = 6$$

$$f(0) = 2$$

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

$$f(1) = -4$$

$$f(x) = \begin{cases} x - \sqrt{x+1} & x > 3 \\ x + 3 & x \leq 3 \end{cases}$$

$$f(5) = 5 - \sqrt{6}$$

$$f(3) = 3 + 3 = 6$$

$$f(1) = 1 + 3 = 4$$

$$f(4) = 4 + 3 = 7$$

$$f(5) = 5 - \sqrt{6}$$

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$$f(x) = x - 4 + 1 = -1 \quad f(x) = 7 - 9 + 1 = -1$$

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

$$\frac{f(3) + f(-1)}{f'(x)} = \frac{7 + (-1)}{1} = 6$$

1, 6

6

$$f(x) = 12 + 1 = 13$$

$$f(-x) = 6$$

$$f(x) = 4 + 1 = 5$$

$$f(x) = \begin{cases} x^2 + 1 & x \geq 2 \\ x^2 & x < 2 \end{cases}$$

$$\frac{xf(x) - xf(-x)}{f(x)} = \frac{13 - 6}{5} = \frac{7}{5}$$

7

$$f = \{(1, 4), (2, 4), (4, 1), (1, 4)\}$$

$$\frac{f(f(x)) - f(f(x))}{f(x) - x} = \frac{f(1) - f(2)}{4 - 2} = \frac{4 - 4}{2} = 0$$

0

$$f(f(\sqrt{x} - x)) = ?$$

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

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

1, 2

2

$$f(x) = \frac{x+1}{x-1} = \left(\frac{x}{x-1}\right)$$

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

5

$$(f(\sqrt{x}))^r - f(x) = ?$$

$$f(x) = x^r + \frac{1}{x^r}$$

$$(f(\sqrt{x}))^r = \left(x + \frac{1}{x}\right)^r = x^r + \frac{1}{x^r} + r$$

1, 2

2

$$f(x) = x^r + \frac{1}{x^r}$$

$$(f(\sqrt{x}))^r - f(x) = x^r + \frac{1}{x^r} + r - \left(x^r + \frac{1}{x^r}\right) = r$$