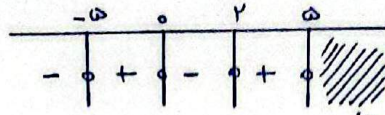


$$y = \sqrt{x f(x)}$$

۰، ۲، ۵، -۵

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

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

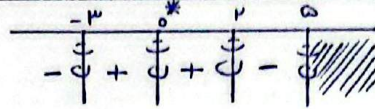


تابع $f(x)$ در این
 محدوده صعود ندارد

۱

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

-۳، ۰، ۲، ۵



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

$$C^3 \rightarrow -2, -1, 1: \text{اعداد صحیح}$$

۲

$$\underline{x=2} \rightarrow f(2) - 2f(2) = 4 - 4 + 2 = 2 \rightarrow -f(2) = 2 \sim f(2) = -2$$

$$\underline{x=-2} \rightarrow f(-2) + 2 = 2 + 2 + 2 = 6 \Rightarrow f(-2) = 10$$

۳

$$f(1) = 5 \quad f(5) = 5 - 3 = 2 \quad 4 + 2 = 6$$

$$f(5) = 2 \quad f(2) = 4$$

۴

$$a(x-1)^2 - b(x-1) + 2 - (ax^2 - bx + 2) = 4x + 2$$

$x^2 + 1 - 2x$

$$ax^2 - 2ax + a - bx + b + 2 - ax^2 + bx - 2 = 4x + 2$$

$$a + b - 2ax = 4x + 2$$

$$-2a = 4 \quad -3 + b = 2 \quad a - b = -3 - 5 = -8$$

$$a = -2 \quad b = 5$$

۵

$f(3) = 3 - 1 + 1 = 1$ $f(-1) = 1 + 3 + 1 = 5$ $f(2) = 2 - 4 + 1 = -1$	$\frac{2f(3) + f(-1)}{f'(2)} = \frac{2 + 5}{1} = 7$	6
$f(x) = 3x + 1 = 13$ $f(-2) = (-2)^2 = 4$ $f(2) = 3 \times 2 + 1 = 7$	$\frac{3f(x) - 2f(-2)}{f(2)} = \frac{39 - 8}{7} = \frac{31}{7}$	7
$f(x) = 1$ $f(1) = 4$ $f(3) = 2$ $f(2) = 4$	$\frac{4 - 4}{4 - 2} = 0$	8
$\frac{(x+2)^2 + 5}{(x+2)^2 + 1} = \frac{2 + 5}{2 + 1} = \frac{7}{3} = 2$ $f(2) = \frac{14 + 5}{14 + 1} = \frac{19}{15}$		9
$f(\sqrt{x}) = x + \frac{1}{x}$ $f(x) = x^2 + \frac{1}{x^2}$ $x^2 + \frac{1}{x^2} + 2 - x^2 - \frac{1}{x^2} = 2$	$(x + \frac{1}{x})^2 = x^2 + \frac{1}{x^2} + 2$	10