

(هم دفتر)

تکلیف ✓

آریبانی

$$x_f(x) \geq 0 \quad D_f = [-5, 0] \cup [2, 5]$$

-1

$$(-5, -5) \times$$

$$[-5, 0] \checkmark$$

$$(0, 2) \times$$

$$[2, 5] \checkmark$$

$$\frac{-x}{f(x)} \geq 0$$

$$(5, 5) \times$$

-2

$$(5, -3) \times$$

$$(-3, 0) \checkmark$$

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

$$(0, 2) \checkmark$$

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

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

-3

$$-f(2) = 2$$

$$f(-2) = 10$$

$$f(2) = -2$$

$$f(5 - \sqrt{5+2}) + f(5) = f(2) + f(5) = 2(2) + 2 + 5 - \sqrt{5+2} = 9$$

-4

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

= (2)

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



$$f(x-1) = a(x-1)^5 - b(x-1) + 5$$

-C

$$= a(x^5 + 1 - 5x) - b(x-1) + 5 = (ax^5 + a - 5ax - bx + b + 5) - (ax^5 - bx + 5)$$

$$= a - 5ax + b - 5ax + a + b + 5x + 5 \quad a + b = 5$$

$$-5a = 5$$

$$b = 5$$

$$\boxed{a = -1}$$

$$\boxed{a + b = 5}$$

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

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

-D

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

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

$$f(x) = x^3 + 1 = 1^3$$

$$f(-1) = (-1)^3 = -1$$

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

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

-E

$$\frac{f(f(1)) - f(f(3))}{f(1) - 3} = 0$$

-F

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

$$f(1) = \frac{1+1+9}{1+1+1} = \frac{11}{3}$$