

(هم دفتر B)

تکلیف ✓

آزمون

1A

$$x_f(x) \geq 0 \quad D_f = [-1, 0] \cup [1, 1]$$

$$(-1, -1) \times$$

$$[-1, 0] \checkmark$$

$$(0, 1) \times$$

$$[1, 1] \checkmark$$

(2) ✓

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

$$(1, 1) \times$$

$$(1, -1) \times$$

$$(-1, 0) \checkmark$$

$$D_f = (-1, 0) \cup (0, 1)$$

$$(0, 1) \checkmark$$

(2) ✓

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

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

$$-f(1) = 1$$

$$f(-1) = 1$$

$$f(1) = 1$$

(2) ✓

$$f(1 - \sqrt{1+1}) + f(1) = f(1) + f(1) = 1(1) + 1 + 1 - \sqrt{1+1} = 1$$

(2) ✓

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

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

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

= (2)

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

(2) ✓

S

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

-1

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

$$= a - 2ax + b - 2ax + a + b + 1 - 1 - bx + 1$$

$$-2a + 2b$$

$$b + 1$$

(2) ✓

$$[a - 1]$$

$$[a - b + 1]$$

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

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

-1

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

$$f(1) = 1 - 9 + 1 = -7$$

(2) ✓

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

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

-1

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

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

(2) ✓

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

= 0

-1

(2) ✓

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

$$= \frac{1^2 + 1\sqrt{x} - 1 + 1}{1^2 + 1\sqrt{x} - 1 + 1} = \frac{1 + \sqrt{x}}{1 + \sqrt{x}} = 1$$

(2) ✓

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

(2) ✓

0 ← 1

$$g = x^2 + \frac{1}{x^2} \rightarrow f(\sqrt{g}) = (\sqrt{g})^2 + \frac{1}{(\sqrt{g})^2} = g + \frac{1}{g} \quad -10$$

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

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