

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره کلاس شماره
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$y = \sqrt{x f(x)}$ $x f(x) \geq 0, x \geq 0$ $D_f = [-5, 0] \cup [2, 5]$	①
$-x \geq 0 \Rightarrow x \leq 0$ $f(x) > 0$ $y = \sqrt{\frac{-x}{f(x)}}$ $(-5, 0) \cup (0, 2)$ $5, 2, 1$	۲
$f(-2) = 1$ $x=2 \rightarrow f(2) - 2f(2) = f - 4 + 9$ $f(2) = 5$ $f(-2) - 2f(-2) = f + 4 + 4$ $f(-2) = 10$	۳
$\omega - \sqrt{\frac{1}{\omega+2}} = 2$ $f_1(x) = 1$ $f(f(\omega)) + f(f(1)) = 1$ $1 + 1 = 2$ $\omega - \sqrt{\frac{1}{\omega+2}} = 2$ $f(x) = \begin{cases} x - \sqrt{x+2} & x > 1 \\ 2x + 1 & x \leq 1 \end{cases}$ $x+2 = 9$	۴
$a-b=8, x \in \mathbb{R} \Rightarrow f(x-1) f(x) = 4x+2$ $f(x) = ax^2 - bx + 2$	۵

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

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

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

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

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

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

$$\frac{2 \times 1 + 1}{1} = 3$$

$$\frac{y f(f(y)) - y f(-y)}{f(y)}$$

$$f(-y) \rightarrow f \quad x < y \rightarrow x^y$$

$$f(y) \rightarrow y^{y+1} \quad y \geq y$$

$$y^{y+1} = 1^1$$

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

$$\frac{y \times 1^2 - 1^1}{1} = \frac{1}{1} = 1$$

$$f(y) \rightarrow y^{y+1} \quad y \geq y \quad y+1 = 2$$

(V)

$$\frac{f(f(f(y))) - f(f(f(y)))}{f(f(y)) - y} = 0$$

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

A

$$x + 1 - \sqrt{x}$$

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

$$\text{hence } f(x) = \frac{x^2 + 1 + 9}{x^2 + 1 + 0}$$

$$f(\sqrt{x}-1) = \frac{(\sqrt{x}-1)^2 + f(\sqrt{x}-1) + 9}{(\sqrt{x}-1)^2 + f(\sqrt{x}-1) + 0} = \frac{1 - 2\sqrt{x} + 1 + 1 + 9}{1 - 2\sqrt{x} + 1 + 1 + 0} = \frac{1}{1} = 1$$

$$f(y) = \frac{(y)^2 + f(y) + 9}{(y)^2 + f(y) + 0} = \frac{1 + 1 + 9}{1 + 1 + 0} = \frac{11}{2}$$

$$(f(\sqrt{x}))^2 - f(x)$$

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

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

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

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