

نام و نام خانوادگی: تینا برافچ پاسخنامه تشریحی تکلیف شماره ۷... کلاس: دبیر دختر ۱۳

$x f(x) \geq 0$ $(-4, -5) \times$ $[-5, 0] \checkmark$ $(0, 2) \times$ $[2, 5] \checkmark$	$D_f = [-5, 0] \cup [2, 5]$	۱
$\frac{-x}{f(x)} \geq 0$ $(-4, -3) \times$ $(-3, 0) \checkmark$ $(0, 2) \checkmark$	$(2, 5) \times$ $D_f = (-3, 0) \cup (0, 2)$	۲
$f(2) - 2f(2) = 4 - 4 + \varepsilon$ $-f(2) = 4$ $f(2) = -4$	$f(-2) + 4 = 4 + 4 + \varepsilon$ $f(-2) \leq 10$	۳
$f(\underbrace{\Delta - \sqrt{\Delta + \varepsilon}}_2) + f(\Delta) = f(2) + f(\Delta) = 2(2) + 3 + \Delta - \sqrt{\Delta + \varepsilon} = 9$		۴
$f(x-1) = a(x-1)^2 - b(x-1) + 2$ $= a(x^2 + 1 - 2x) - b(x-1) + 2 = (ax^2 + a - 2ax - bx + b + 2) - (ax^2 - bx + 2)$ $= a - 2ax + b$ $-2ax + a + b = 4x + 2$ $-2a = 4$ $a = -2$	$-2a + b = 2$ $b = 2$ $a - b = -4$ $-2 - b = -4$ $b = 2$	۵

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

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

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

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

6

$$f(3) = 3(3) + 1 = 10$$

$$f(-2) = (-2)^2 = 4$$

$$f(2) = 3(2) + 1 = 7$$

$$\frac{3 \cdot f'(3) - 2 \cdot f(-2)}{f'(2)} = \frac{3 \cdot 9 - 8}{7} = \frac{19}{7}$$

7

$$\frac{f(f(3)) - f(f(2))}{f(1) - 2} = 0$$

8

$$f(x) = \frac{(\sqrt{x} - 2)^2 + f(\sqrt{x} - 2) + 9}{(\sqrt{x} - 2)^2 + f(\sqrt{x} - 2) + 2} = \frac{3 + 4 - 4\sqrt{x} + 4\sqrt{x} - 1 + 9}{3 + 4 - 4\sqrt{x} + 4\sqrt{x} - 1 + 2} = \frac{1}{1} \cdot 2$$

$$f(2) = \frac{4 + 1 + 9}{4 + 1 + 2} = \frac{14}{7} = 2$$

9

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

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

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

$$= 2$$

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

10