

Date:

Subject:

سایه شمس

$$n f(n) > 1$$

$$R_1 = \{0, 1, 2, \dots\}$$

$$D_f = [-500] \cup [100]$$

$$\frac{-0.2 \pm \sqrt{0.4}}{-1 \pm 1} = \frac{-0.2 \pm 0.2}{0}$$

$$\frac{-a_1}{f(n)} > 0$$

$$\frac{-2.0 \pm \sqrt{4.0}}{-1 \pm 1} = \frac{-2.0 \pm 2.0}{0}$$

$$f(n) = 0.9 \times 10^9 - 3$$

$$D_f = (-350) \cup (0.9 \times 10^9)$$

$$\Rightarrow \text{اعداد صحیح} = -29 - 191 \rightarrow \boxed{\text{عدد صحیح 3}}$$

$$f(2) - 2f(2) = 8 - 4 + 8$$

$$f(-2) + 8 = 8 + 4 + 8$$

$$-f(2) = 2 \quad f(2) = -2$$

$$f(-2) = 10$$

...

$$a_n = \sqrt{n+1} \quad n > 2$$

$$2a_n + 3 \quad n \leq 2$$

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

$$f(a) = 2$$

$$f(1) = a$$

$$f(2) = 7$$

$$f(n) = an^2 - bn + 2$$

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

$$a(n^2 - 2n + 1) - bn + b + 2 = an^2 - 2an + a - bn + b + 2$$

$$f(n-1) - f(n) = (an^2 - 2an + a - bn + b + 2) - (an^2 - bn + 2) = -2an + a + b$$

$$-2an + a + b = 4n + 1$$

$$a + b = 2$$

$$-2a = 4 \rightarrow a = -2$$

$$-2 + b = 2 \rightarrow b = 4$$

$$b = 2$$

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$$a - b = -2 - 4 = -6$$

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

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

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

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

(7)

$$f(3) = 13$$

$$f(-2) = 3$$

$$f(4) = 3$$

$$\frac{(13 \times 13) - f(3)}{3} = \frac{169 - 1}{3} = \frac{168}{3} = 56$$

(8)

$$f(3) = 1 \quad f(2) = 2 \quad f(1) = 4 \quad f(4) = 4$$

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

(9)

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

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

(10)

$$f(f(\sqrt{n}-2))$$

$$f(2) = \frac{2^r + 1}{2^r + 1} = \frac{21}{14}$$

$$f(n) = n^r + \frac{1}{n^r}$$

$$f(\sqrt{n}) = (\sqrt{n})^r + \frac{1}{(\sqrt{n})^r} = n + \frac{1}{n}$$

(11)

$$(f(\sqrt{n}))^r - f(n)$$

$$(n + \frac{1}{n})^r = n^r + \frac{1}{n^r} + r \dots - n^r - \frac{1}{n^r} = 0$$