

~~$y = \sqrt{nf(n)}$~~ $nf(n) \geq 0$

$f(n) = -1, 2$ ~~$n=0$~~

جایی که عدد و کمالات باشد یا یکی از آن ها صفر باشد $n=0$ ✓ ۲

$D_f = [-1, 0] \cup [2, 1]$

$n \mid -1 - 0 + 0 - 0 + 0$

$y = \sqrt{\frac{-n}{f(n)}}$ $\frac{-n}{f(n)} \geq 0$ $f(n) \geq 0$ $f(n) = -1, 0, 2$

~~$n=0$~~ $-n \geq 0$ $n=0$ $n \mid -1 - 0 + 0 - 0 + 0$

✓ ۲

$D_f = (-1, 0) \cup (0, 2)$

جایی که مخالف کم هستند و n

۴ در صحت

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

$n=2 \rightarrow f(2) - 2f(2) = 4 - 4 + 2 - f(2) = +2$ $f(2) = +2$

$n=f(2) \rightarrow f(-2) + 2 = 4 + 4 + 2$ $f(-2) = 10$

✓ ۲

$f(f(0)) \Rightarrow 0 - \sqrt{0+2} = 2 \Rightarrow f(2) \Rightarrow \cancel{0+2} \quad 2 \times 2 + 2 = \boxed{6}$

$f(f(1)) \Rightarrow 1 + 2 = 0 \Rightarrow f(0) = \boxed{2}$

✓ ۲

$f(f(0)) + f(f(1)) \Rightarrow 6 + 2 = \boxed{8}$

$f(n-1) - f(n) = 4n + 2$ $f(n) = an^2 - bn + 2$

✓ ۲

$n=n-1 \rightarrow \cancel{f(n-1) - f(n)} \quad f(n-1) = a(n-1)^2 - b(n-1) + 2$

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

$f(n-1) - f(n) = (an^2 - 2an + a - b + bn + 2) - (an^2 - bn + 2) = \cancel{an^2} - 2an + a - b + bn + 2 - \cancel{an^2} + bn - 2 = -2an + a - b + 2bn = 4n + 2$

$-2an + a - b + 2bn = 4n + 2$ $-2a = 4$ $a = -2$ $a + b = 2 \Rightarrow -2 + b = 2$ $b = 4$

$a - b \Rightarrow -2 - 4 = \boxed{-6}$

$$\frac{r f(r) + f(-1)}{f'(r)} \Rightarrow$$

$$f(r) \Rightarrow 9 - 9 + 1 = \boxed{1}$$

$$f(-1) = 1 + 1 + 1 = \boxed{0}$$

$$f(r) = r - 4 + 1 = \boxed{-1}$$

$$\frac{1 + 0}{1} = \boxed{1}$$

(2) ✓

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$$\frac{r f(r) - r f(-r)}{f(r)} \Rightarrow$$

$$f(r) \Rightarrow r(r) + 1 = 1r$$

$$f(-r) \Rightarrow (-r)^r = r$$

$$f(r) \Rightarrow r(r) + 1 = \sqrt{r}$$

$$\frac{r(1r) - r(r)}{\sqrt{r}} = \frac{r^2 - r}{\sqrt{r}} = \boxed{\frac{r}{\sqrt{r}}}$$

(2) ✓

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$$\frac{f(f(r)) - f(f(r))}{f(1) - r} \Rightarrow$$

$$f(r) = 1 \Rightarrow f(1) = 4$$

$$\cancel{f(r)} f(r) = r \Rightarrow f(r) = 4$$

$$f(1) = 4$$

$$\frac{4 - 4}{r} = 0$$

(2) ✓

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

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

(2) ✓

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

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

$$\left(n + \frac{1}{n}\right)^r - \left(n^r + \frac{1}{n^r}\right) = \left(n^r + \frac{1}{n^r} + 1\right) - \left(n^r + \frac{1}{n^r}\right) = \boxed{1}$$

(2) ✓

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