

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

$$f(-1) = 1 + 9 + 1 = \underline{0}$$

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

$$\frac{r+0}{1} = \underline{V}$$

(V) ✓

6

$$f(r) = 1r + 1 = \underline{1r}$$

$$f(-r) = \underline{r}$$

$$f(r) = 9 + 1 = \underline{V}$$

$$\frac{r(1r) - r(r)}{V} = \frac{r9 - 1}{V} = \left(\frac{r1}{V} \right)$$

(V) ✓

V

$$f(r) = 1 \rightarrow f(1) = \underline{9}$$

$$f(r) = r \rightarrow f(r) = \underline{9}$$

$$f(1) = 9 \rightarrow 9 - r = r$$

$$\frac{9-9}{r} = \underline{0}$$

(V) ✓

Λ

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

$$= \frac{1}{r} = r \rightarrow f(r) = \frac{14+0}{14+1} = \left[\frac{r1}{1V} \right]$$

(V) ✓

9

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

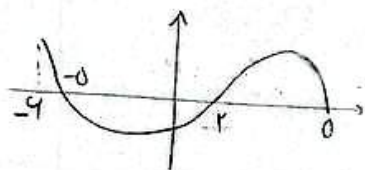
$$n^r + \frac{1}{n^r} + r = n^r - \frac{1}{n^r} = (r)$$

(V) ✓

1.

مسئله ۱

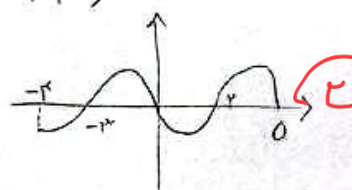
باید n در $f(n)$ علامت باشد یا مخرج یکی از آنها منفی باشد تا عبارت تعریف شود. ✓



$$D_f = [-5, 0] \cup [2, 5]$$

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$f(n) < 0 \Rightarrow (0, 2), (-2, -2) \rightarrow n > 0 \rightarrow (0, 2)$
 $f(n) > 0 \Rightarrow (-2, 0), (2, 0) \rightarrow n < 0 \rightarrow (-2, 0)$



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

۳ → ۱، -۱، -۲: تعداد اعداد صحیح

۲

$$n=2 \quad f(2) - 2f(2) = \frac{4}{4+2} \rightarrow -f(2) = 2 \rightarrow f(2) = -2$$

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

۲ ✓

۳

$$f(0) = 0 - \sqrt{9} \cdot 2 \Rightarrow f(2) = 4 + 3 = 7$$

$$f(1) = 2 + 3 = 0 \Rightarrow f(0) = 0 - \sqrt{9} = 3$$

$$7 + 2 = 9$$

۲ ✓

۴

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

$$an^2 + a - 2an - bn + b + 2 - an^2 + b/n - 2 = a - 2a + b = 9n + 2$$

$$\begin{cases} -2a = 9 & a + b = 2 \Rightarrow -2 + b = 2 \\ a = -3 & \end{cases} \quad b = 5$$

$$a - b = -3 - 5 = -8$$

۲ ✓

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