

نام و نام خانوادگی پاسخنامه تشریحی تکلیف شماره ۴۰۰ ... کلاس ازدم دختر

$$f(n) \rightarrow D_f = [-2, 4]$$

$$f\left(\frac{3n+2}{5}\right) \Rightarrow -2 \leq \frac{3n+2}{5} \leq 4 \rightarrow -12 \leq 3n \leq 18 \rightarrow -4 \leq n \leq 6 \rightarrow D_{f\left(\frac{3n+2}{5}\right)} = [-4, 6]$$

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$$f\left(\frac{3n}{5} - 2\right) \rightarrow D_{f\left(\frac{3n}{5} - 2\right)} = [-2, 3] \Rightarrow -2 \leq n \leq 3 \rightarrow -7 \leq 3n \leq 9 \rightarrow -\frac{7}{3} \leq n \leq 3 \rightarrow D_{f(n)} = \left[-\frac{7}{3}, 3\right]$$

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$$f\left(\frac{3n+1}{2}\right) \rightarrow D_{f\left(\frac{3n+1}{2}\right)} = [-1, 3] \Rightarrow -1 \leq n \leq 3 \rightarrow -3 \leq 3n \leq 9 \rightarrow -2 \leq 3n+1 \leq 1$$

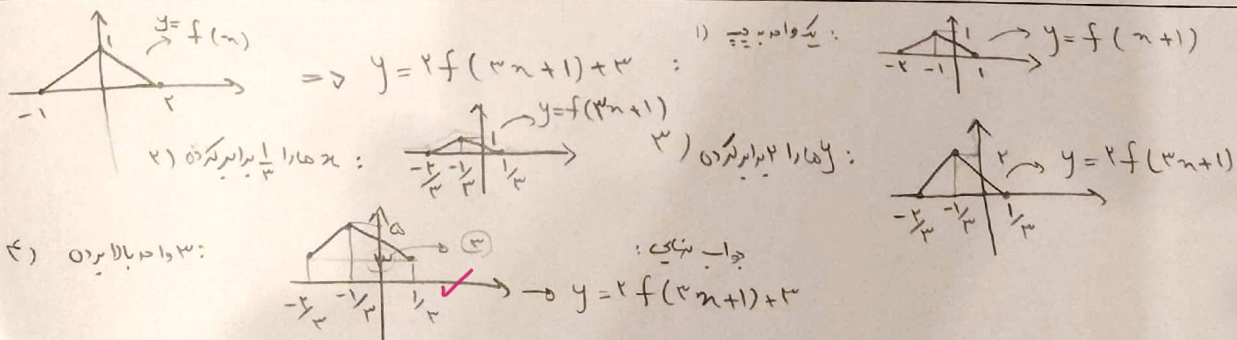
$$D_{f(2-5n)} = ? \Rightarrow -1 \leq \frac{3n+1}{2} < 0 \Rightarrow -1 \leq f(n) < 0 \rightarrow D_{f(n)} = [-1, 0]$$

$$\Rightarrow -1 \leq 2-5n < 0 \rightarrow -3 \leq -5n < 3 \rightarrow -3 < 5n \leq 3$$

$$\Rightarrow -\frac{3}{5} < n \leq \frac{3}{5} \Rightarrow D_{f(2-5n)} = \left(-\frac{3}{5}, \frac{3}{5}\right]$$

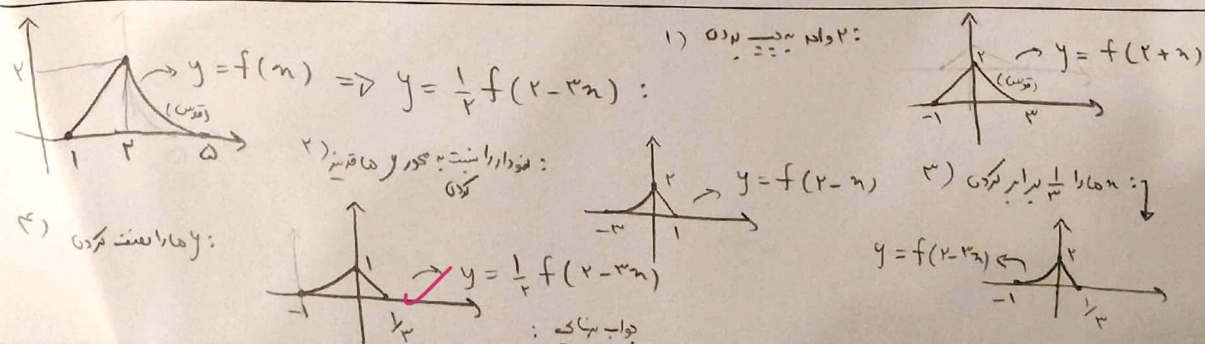
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$$y = \frac{-1}{r} n^r + \frac{r}{a} n + 1 \rightarrow s = \begin{cases} n s = \frac{-b}{r a} = \frac{-r \times r}{a \times r} = \frac{r}{a} \\ y s = \frac{-1 \times r \times r}{r \times a \times a} + \frac{r \times r}{a \times a} + 1 = \frac{r}{a} + 1 = \frac{r+1}{a} \end{cases} \Rightarrow s(\frac{r}{a}, \frac{r+1}{a})$$

$$s'(r, r) \rightarrow y = \frac{-1}{r} (n - \frac{r}{a})^r + \frac{r+1}{a} \Rightarrow y' = \frac{-1}{r} (n - \frac{r}{a})^{r-1} + r$$

$$\hookrightarrow y' = \frac{-1}{r} (n - \frac{r}{a})^{r-1} + r \rightarrow x^r = \frac{-1}{r} (n - \frac{r}{a})^{r-1} \rightarrow (n - \frac{r}{a})^{r-1} = a \rightarrow n - \frac{r}{a} = \sqrt[r-1]{a} \Rightarrow n = \sqrt[r-1]{a} + \frac{r}{a}$$

$y = f(n)$
 $y = 1 - r f(r n + r) \rightarrow y = 1 - r(\frac{r}{a}) = 1 - 1 = -1$
 $s'(a, b) \rightarrow a/b = ? \Rightarrow \underline{b = y = -1}$
 $s(1, t) \Rightarrow r n + r = 1 \Rightarrow n = \frac{1-r}{r}$
 $\underline{a = n = \frac{1-r}{r}}$

$$\hookrightarrow (a, b) = (\frac{1-r}{r}, -1) \rightarrow d/b = \frac{-1}{r} \times -1 = \frac{1}{r}$$

$\begin{cases} D_f = (a, r) \\ D_g = [-1, b] \end{cases} \rightarrow y = f(n-1) + g(n+1) : D_y = (\underline{-r}, \underline{a})$
 $D_{f'} = (a+1, \underline{a}) \quad D_{g'} = [\underline{-r}, b-1) \Rightarrow \begin{cases} b-1 = a \rightarrow \underline{b = a+1} \\ a+1 = -r \rightarrow \underline{a = -r-1} \end{cases}$

$$\rightarrow a - b = -r - 1 - (a+1) = -r - 1 - a - 1 = -r - a - 2$$

$y_1 = f(\frac{n}{r} + 1) \rightarrow y_r = \sqrt[r]{r f(n) - r}$
 $y_r = f(n) \rightarrow R_{y_1} = R_{y_r} = [-1, r] \rightarrow -1 \leq f(n) \leq r \rightarrow -r \leq r f(n) \leq r^2$
 $\Rightarrow -a \leq r f(n) - r \leq 1 \rightarrow y_r = \sqrt[r]{[-a, 1]} = \sqrt[r]{[1, a]} = \sqrt[r]{[r, a^r]}$
 $\hookrightarrow y_r = [-r, \sqrt[r]{a}] : R_{y_r} = [\underline{-r}, \underline{\sqrt[r]{a}}] / D_{y_1} = [-r, a] \rightarrow f(\frac{a}{r} + 1) = y_1$

$$\Rightarrow -r \leq n \leq a \rightarrow \frac{-r}{r} \leq \frac{n}{r} \leq \frac{a}{r} \rightarrow \frac{-1}{r} \leq \frac{n}{r} + 1 \leq \frac{a}{r} \rightarrow D_{y_1} = D_{y_r} = [\underline{-1}, \underline{\frac{a}{r}}]$$

$$f(n) = \left| \frac{n+1}{r n + 1} \right| \rightarrow g(n) = \left| \frac{(n-r)+1}{r(n-r)+1} \right| + 1 \rightarrow g(n) = \left| \frac{n-1}{r n - r} \right| + 1 \Rightarrow n + g(n) <$$

$$\hookrightarrow n + \left| \frac{n-1}{r n - r} \right| + 1 < \rightarrow n + 1 < \rightarrow \underline{n < -1} \Rightarrow \frac{r n^2 - r n + n - 1 + r n - r}{r n - r} < \rightarrow \frac{r n^2 - r}{r n - r} < \rightarrow \frac{r n^2 - r}{r n - r} < \frac{r}{r} \Rightarrow n^2 - 1 < 1 \Rightarrow n^2 < 2 \Rightarrow -\sqrt{2} < n < \sqrt{2}$$

$$\Rightarrow (-\sqrt{2}, -\sqrt{r}) \cup (\sqrt{r}, \sqrt{2}) \cap \mathbb{Z} = \emptyset$$