

$$\text{الف) } y^n \leq r n^r + r n - 1$$

①

$$y_1^n \leq r n^r + r n - 1$$

$$y_2^n \leq r n^r + r n - 1$$

$$\rightarrow y_1^n \leq y_2^n \rightarrow y_1 = y_2$$

تساوي

$$\text{ب) } n \cos y = y \cos n \rightarrow n \leq \frac{\pi}{r} \rightarrow \text{تساوي}$$

②

$$\text{ج) } \frac{n+y}{r}, \sqrt{ny} \rightarrow ny > 0 \rightarrow n+y - \sqrt{ny} > 0 \rightarrow n + (\sqrt{n} - \sqrt{y})^2 > 0$$

$$\rightarrow n \leq y \rightarrow \text{تساوي}$$

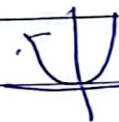
$$\text{د) } n y^r + r n - y - r y > 0 \rightarrow n(y^r + r) - y(y^r + r) > 0$$

$$(y^r + r)(n - y) > 0 \rightarrow n > y$$

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نوع اول

$$\text{هـ) } |y| + n^r \leq r y \begin{cases} y > 0 \rightarrow y \leq n^r \\ y < 0 \rightarrow r y \leq n^r \end{cases}$$



تساوي

③

$$\text{و) } [y] + [n] \leq 1 \rightarrow n \leq 0, 1 \rightarrow [n] \leq 0, [y] \leq 0 \rightarrow y \in (r, 1]$$

تساوي

$$f(n) = \begin{cases} r n^r - b & n \geq n \\ a + r n & 0 < n < n \\ r n^r - b & n \leq -1 \end{cases} \rightarrow a \rightarrow a + b \leq (1r) \quad \text{④}$$

$$S \leq \frac{a}{n} \leq -b \rightarrow a + b \leq -b \rightarrow a \leq -r b$$

⑤

$$\rightarrow a \leq -r(-1) \leq r$$

$$a b \leq \frac{c}{a} \leq -a \rightarrow b \leq 1 \rightarrow a + b \leq 1$$

⑥

$$n a + c \leq n b \leq n b - r b \leq n b$$

$$b \leq 0 \rightarrow -n |b| \leq n b$$

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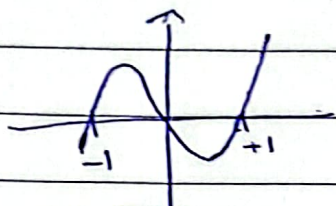
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$$\frac{r(n+r+a)(n+b)}{n+b} = \frac{r(n+r+a)n + ab}{n+b} = \frac{r(n+r+a)}{n+b} + r + \frac{ab}{n+b} \quad (1)$$

$$n+b > 0 \xrightarrow{n \rightarrow r} r+b > 0 \rightarrow b > -r \quad (2)$$

$$\text{ii) } \frac{r}{n} \cdot n > 0 \quad n(n^2-1) > 0 \rightarrow n(n-1)(n+1) > 0 \quad (3)$$



$$\therefore |n-1| > 0 \rightarrow |n| > 1 \rightarrow n > 1 \text{ or } n < -1$$

$$D_f = (-\infty, -1) \cup (1, +\infty)$$

$$\text{iii) } |a| \neq [n] \quad \therefore \sqrt{n} \rightarrow n > 0 \quad (4)$$

$$\rightarrow D_f = \mathbb{R} - \mathbb{N}$$

$$D_f = 9 - \sqrt{n} \rightarrow 9 - \sqrt{n} > 0$$

$$9 > \sqrt{n} \rightarrow -11 \leq n \leq 11 \quad (5)$$

$$\sqrt{n} \leq 9 \quad (6)$$

$$D_f = [0, 11]$$

$$\left[r(n - \frac{1}{r}) \right] + \left[r(n - \frac{1}{r}) \right] + r > 0 \quad (7)$$

$$r \left[r(n - \frac{1}{r}) \right] > -r \rightarrow \left[r(n - \frac{1}{r}) \right] > -1$$

$$r(n - \frac{1}{r}) > 0 \rightarrow rn > \frac{1}{r} \rightarrow n > \frac{1}{r^2} \rightarrow D_f = \left[\frac{1}{r^2}, +\infty \right)$$

$$r(n-a) > 0 \rightarrow rn > a \rightarrow n > \frac{a}{r} \quad 1 - \log(rn-a) > 0 \quad (8)$$

$$rn-a < 10 \rightarrow n \leq \frac{10+a}{r} \quad \log rn-a < 1$$

$$\frac{a}{r} < n \leq \frac{10+a}{r} \rightarrow c-b \leq \frac{10+a}{r} - \frac{a}{r} \rightarrow c-b \leq \frac{10}{r} \quad (9)$$