

الف) $\frac{n+3}{(n-1)(n^2+n-3)} = \frac{n+3}{(n-1)(n-1)(n+3)}$ $D = \mathbb{R} - \{-1, \frac{1}{2}, -3\}$ (2) (1)

$\Rightarrow \frac{n+3}{(n-1)(n+1)(n+3)} \Rightarrow D = \mathbb{R} - \{-1, -\frac{1}{2}, -3\}$ ✓

ان) $\frac{n+3}{(n-1)(n^2-n+1)}$ $\Rightarrow D = \mathbb{R} - \{1\}$ ✓ (2) (2)

$\Rightarrow \sqrt{\frac{n+3}{(n-1)(n^2-n+1)}} \Rightarrow \frac{-2}{x^2-3} \neq \frac{1}{x} \quad D = (-\infty, 3] \cup (1, +\infty)$ ✓

$y = \frac{2}{n^2-2|n-1|-n+2}$ $\frac{2}{n^2+n} = \frac{2}{n(n+1)} \quad \frac{2}{n^2-n+1} = \frac{2}{(n-1/2)^2+3/4}$ (2) (2)

$D = \mathbb{R} - \{-5, 0, 2, \infty\}$ ✓ $\Rightarrow n \neq 0, n \neq -1, n < 1$ $n \neq 1, n \neq 2, n > 1$

ان $\frac{n+3}{|n+1|-|n+3|}$ $\frac{-3}{-n+1} \quad \frac{-1}{n-1}$ (2) (2)

$D = \mathbb{R} - \{-\frac{1}{2}, 2\}$ ✓ $\Rightarrow n \neq 2, n \neq -\frac{1}{2}$

ب) $|n+1| - |n+3| \geq 0 \quad |n+1| \geq |n+3|$

$n \leq -1 \Rightarrow n^2+n+1 \geq 0 \quad n^2-n-1 \geq 0 \quad (n-1)(n+3) > 0$

$D = (-\infty, -\frac{1}{2}] \cup [2, +\infty)$ ✓ $\frac{-1}{x^2-1}$

ان) $1. \log_2 n > 1 - \log_2 n \Rightarrow n > 2$ $1 - \log_2 n > 0 \Rightarrow n < 2$ (2) (2)

$0 < n < 2 \Rightarrow D = (-\infty, 2)$ ✓

$1. \log_2 n > 1 - \log_2 n \Rightarrow n > 2$ $1 - \log_2 n > 0 \Rightarrow n < 2$ $\log_2 n < 1 \Rightarrow n < 2$ (2) (2)

$D = n > \frac{1}{2} \Rightarrow D = (\frac{1}{2}, +\infty)$ ✓

$$f(n) = \sqrt{\log \frac{1}{f}} \xrightarrow{(n+1)} \rightarrow n-1 > . \quad n > 5$$

$$\log \frac{1}{f} > . \Rightarrow n-1 > 1 \quad n > 2$$

$$\log \frac{1}{f} \rightarrow . \xrightarrow{1 < f < 1} \log \frac{1}{f} \leq 1 \quad n-1 \leq 0$$

$$I \cap II \cap III \Rightarrow 1 < n \leq 2 \quad D = \{1, 2\}$$

(4) (5) (6) $n \leq 2$

$$ii) \log (r \cdot s n + 1) \rightarrow r \cdot s n + 1 > . \quad \cos n > -\frac{1}{r}$$

$$D = (rkn - \frac{rn}{r}, rkn + \frac{rn}{r})$$

(7) (8) (9)

$$ii) y = \sqrt{\log \frac{n-1}{n+1}} \rightarrow \frac{n-1}{n+1} > . \quad \frac{-1}{r-1} > .$$

$$\log \frac{n-1}{n+1} > . \quad \frac{n-1}{n+1} > 1 \quad \frac{-1}{n+1} > . \quad \frac{-1}{r-1}$$

$$I \cap II \Rightarrow D = (-\infty, +1)$$

(10) (11) (12)

$$a = -r \quad f(n) = \sqrt{-rnb}$$

مربع a با b متی شود (13) (14)

$$-rnb > . \Rightarrow n \leq \frac{b}{r} \quad \left. \begin{array}{l} \\ \end{array} \right\} \Rightarrow \frac{b}{r} \leq r \quad (b \leq 4)$$

$$D = (-\infty, r]$$

(15) (16) (17)

$$n^r + m^r \geq m^r$$

$$a > . \quad a \leq . \quad \rightarrow \quad r-1 + r m^r \geq . \quad r m^r - r \leq . \quad m^r - 1 \leq .$$

$$1 - (-1) = 2$$

(18) (19) (20) $-1 \leq m \leq 1$

$$\sqrt{r-n^2} \Rightarrow r-n^2 > . \quad -r \leq n \leq r \quad (I) \quad (21) \quad (22)$$

$$\{n\} + \{-n\} = 1 \rightarrow \text{مجموعه متناهی} \quad n \in \mathbb{Z} \quad (II)$$

$$(I \cap II) \Rightarrow D = \{-r, -1, 0, 1, r\}$$

(23) (24) (25) $\checkmark$