

الف) $y = \sqrt{\frac{n^2 - n^3}{n^3 - n}} \Rightarrow y = \sqrt{\frac{n^2(n-1)(n+1)}{n(n-1)(n+1)}}$

$n=1$
 $n \leq 0$
 $x=1$

$\Rightarrow D_f = R - \{1, 0, -1\}$

$D_f = (-1, 0) \cup (0, 1) \cup (1, +\infty)$

ب) $y = \sqrt{n+|n|} \Rightarrow n+|n| > 0$

$\ominus x$
 $\oplus \checkmark$
 $\otimes x$

میگیریم اعداد مثبت و منفی دهم.

$D_f = (0, +\infty) \subseteq R^+$

ج) $y = \sqrt{2 - [n]} \Rightarrow 2 - [n] > 0$

$2 > [n] \Rightarrow D_f = (2, \infty)$

$D_f = (-\infty, 2)$

د) $y = \sqrt{\left[n - \frac{1}{p}\right] + \left[-\left(n - \frac{1}{p}\right)\right]} \Rightarrow \text{if } a \in \mathbb{Z} \Rightarrow a \notin \mathbb{Z} = -1$

$\Rightarrow n - \frac{1}{p} \in \mathbb{Z} \Rightarrow D_f = \{n / n = k + \frac{1}{p}, k \in \mathbb{Z}\}$

$n \in \mathbb{Z} + \frac{1}{p}$

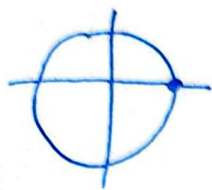
ه) $r \sin^2 n - 1 \neq 0 \Rightarrow r \sin^2 n \neq 1$

$\sin^2 n \neq \frac{1}{r} \Rightarrow \sin n \neq \pm \frac{1}{\sqrt{r}}$

$\sin n \neq \frac{\pi}{r} + \frac{k\pi}{r}$

$D_f = R - \left\{ \frac{\pi}{r} + \frac{k\pi}{r} \right\}$

$$\cos n-1 > 0 \Rightarrow \cos n > 1 \quad (ـ)$$



$$D_f = \{r, n, \pi\}$$

(2) ✓

$$y = \sqrt{r \sin n - 1} \quad (الف)$$

$$r \sin n - 1 > 0 \Rightarrow \sin n > \frac{1}{r}$$



$$D_f = \left[r, n, \pi + \frac{\pi}{r}, r, n, \pi + \frac{2\pi}{r} \right]$$

6

$$y = \arcsin(n^r \pi n + 1)$$

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

$$n^r \pi n + 1 > 0$$

$$(n+1)(n+r) > 0$$

$$n < -r, n > -1$$

$$n^r \pi n < 0$$

$$-r < n < 0$$

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

$$\cos y = |n| - r \quad (الف)$$

$$-1 \leq |n| - r \leq 1$$

$$-r \leq n \leq -r$$

$$r \leq |n| \leq r$$

$$r \leq n \leq r$$

$$D_f = [-r, r] \cup [r, r]$$

7

$$y = \log n \Rightarrow n > 0$$

$$n(n-1)(n+1) > 0$$

$$\Rightarrow n < -1, n > 1$$

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

(1)

$$r - \log(n-r) > 0 \Rightarrow n-r > 0 \Rightarrow n > r$$

$$r \geq \log_r(n-r) \Rightarrow n^r \geq n-r \Rightarrow n \leq 1$$

$$D_f = (r, 1)$$

8

$$f^n - 1 \neq 0 \Rightarrow f^n \neq 1$$

$$D_f = \mathbb{R} - \{0\}$$

(2) ✓

$$\cancel{f^n - 1 \neq 0} \Rightarrow \cancel{f^n \neq 1}$$

$$f^n + 1 \neq 0 \Rightarrow f^n \neq -1 \Rightarrow D_f = \mathbb{R}$$

9

$$f^n - r \neq 0 \Rightarrow f^n \neq r \Rightarrow n \neq \log_r f$$

$$D_f = \mathbb{R} - \{\log_r f\}$$

$$f^n - r \neq 0 \Rightarrow f^n \neq r$$

$$n \neq \log_r f \Rightarrow D_f = \mathbb{R} - \{\log_r f\}$$

(3)

$$\frac{r^n - r}{r^n - a} = w \Rightarrow r^n - r = r^n w - a w$$

$$\Rightarrow r^n - r n w = r - a w \Rightarrow r n (1 - w) = \frac{r - a w}{w}$$

$$n \in \frac{a w - r}{r w - r} \Rightarrow D_f = \left\{ \frac{a w - r}{r w - r} \mid w \in \mathbb{W} \right\}$$

(2) ✓

$$y = (f^{n+1})! \Rightarrow f^{n+1} \in \mathbb{W}$$

$$f^n \in \mathbb{W} - 1 \Rightarrow n \in \frac{\mathbb{W} - 1}{f}$$

$$\Rightarrow D_f = \left\{ \frac{n-1}{f} \mid n \in \mathbb{W} \right\}$$

10