

14. $[v, +\infty)$

$$x = y \quad y + b = 0 \quad b = -y$$

$$Df = \mathbb{R}$$

$$x^r + rx - r - m^r \geq 0$$

$$\Delta \leq 0 \rightarrow r^{1-r}(1-m^r) = r-1+r m^r = r m^r - r \leq 0$$

$$m^r \leq 1$$

$$-1 < m \leq 1$$

$$[n] + [-n] = -1 \Rightarrow n \notin \pi$$

$$[n] + [-n] \neq -1 \rightarrow n \in \mathbb{Z} \text{ ist } \text{Zur } I$$

$$K - n^p \geq 0 \quad K \geq n^p \quad K \leq n \leq K \quad II$$

$$I \cap II \Rightarrow \{-1, 0, 1, 2\} \quad (\text{مطلوبه})$$

$$x^w + w x^v \geq 0$$

$$x^Y (x + y) \geq 0$$

$$Df = [-\gamma, +\infty)$$

$$c) y = \sqrt{\frac{(x^k - 1)(x^k - kx^{k-1})}{x^k - 1}}$$

$$x^u \neq 1 \Rightarrow x \neq 1$$

$$\frac{(2^k-1)(2^k-2^k)}{(2^k-1)} \geq 0$$

$$Df = (-\infty, -1] \cup [r, +\infty)$$

$$|x-2| \geq 3 \rightarrow \begin{array}{l} x-2 \geq 3 \quad \text{or} \quad x \geq 5 \\ x-2 \leq -3 \quad \text{or} \quad x \leq -1 \end{array}$$

$$Df = (-\infty, -1] \cup [\omega, +\infty)$$

c) $y = \sqrt{x - |x - 2|}$

$$\begin{aligned} \Leftarrow \geq |y-x| &\rightarrow x \geq y-x & x \geq -y \\ &\rightarrow -x \leq y-x & x < y \end{aligned}$$

$$Df = [-x, y]$$

الف) $y = \sqrt{1-x|x|}$ $1-x|x| \geq 0 \Rightarrow x \in (-1, 1] \Rightarrow x^2 \leq 1 \Rightarrow 0 \leq x \leq 1$
 $Df = (-\infty, 1] \cup [0, 1]$ $x \leq 0 \Rightarrow 1 \leq x^2 \Rightarrow (-\infty, -1]$

ب) $y = \frac{1}{\sqrt{3-|x-\omega|}-1}$ $3-|x-\omega| \geq 0, x \neq 1$ $3-|x-\omega| \neq 1 \Rightarrow x \neq 1$
 $Df = [5, 1] - \{3, v\}$ $|x-\omega| \leq 3$
 $-3 \leq x-\omega \leq 3 \Rightarrow x \leq 1$

الف) $y = \frac{\sin^2 x - 1}{\cos x}$ $\cos x \neq 0 \Rightarrow Df = \mathbb{R} - \{2k\pi + \frac{\pi}{2}, 2k\pi + \frac{3\pi}{2}\}$
 ب) $y = \frac{\cos x}{x \cos x - 1}$ $x \cos x - 1 \neq 0$ $x \cos x \neq 1$
 $\cos x \neq \frac{1}{x}$
 $Df = \mathbb{R} - \{2k\pi + \frac{\pi}{x}, 2k\pi + \frac{\omega \pi}{x}\}$

الف) $y = \frac{x+3}{|x+1| - |x+3|}$ $|x+1| \neq |x+3|$
 $Df = \mathbb{R} - \{x = \frac{5}{2}\}$ $x^2+1+x \neq x^2+9+3x$
 $3x^2-1-x \neq 0$
 ب) $y = \sqrt{|x+1| - |x+3|}$ $|x+1| \geq |x+3|$
 $Df = (-\infty, \frac{5}{2}] \cup [5, +\infty)$ $x^2+1+x \geq x^2+9+3x$
 $3x^2-2x-8 \geq 0$

$f(x) = \sqrt{\log_{\log_{\omega} x} (\log_{\omega} (x-1))}$ $x-1 > 0 \Rightarrow x > 1 \Rightarrow x > \frac{1}{x} \Rightarrow I$
 $\log_{\log_{\omega} x} (\log_{\omega} (x-1)) \geq 0$ $\log_{\omega} (x-1) > 1$ $x-1 > \omega$ $x > 4$ $x > 3 \Rightarrow II$
 $I \cap II = (3, +\infty)$

الف) $y = \log(x \cos x + 1)$ $x \cos x + 1 > 0$ $x \cos x > -1$ $\cos x > -\frac{1}{x}$
 $Df = \mathbb{R} - [2k\pi + \frac{3\pi}{x}, 2k\pi + \frac{5\pi}{x}]$
 ب) $y = \sqrt{\log \frac{x-1}{x+1}}$ $\frac{x-1}{x+1} > 0$ $\log \frac{x-1}{x+1} \geq 0 \Rightarrow \frac{x-1}{x+1} \geq 1$ $\frac{x-1}{x+1} - 1 \geq 0$
 $Df = (-\infty, -1)$ $\frac{x-1-x-1}{x+1} \geq 0 \Rightarrow \frac{-x-2}{x+1} \geq 0 \Rightarrow x+1 < 0$ $(x < -1)$