

نیایں سے ہم - تکلیف دہ ہے

① الف) $\cos m \neq 0$

$$\cos \neq -\frac{1}{2}$$

$$D_f = \mathbb{R} - \left\{ 2K\pi + \frac{4\pi}{3}, 2K\pi + \frac{2\pi}{3} \right\}$$

ب) $\cos m \neq 1$

$$D_f = \mathbb{R} - \{ 2K\pi \}$$

② الف) $\tan m \neq 0$

$$\tan m \neq -1$$

$$\cos \neq 0$$

$$D_f = \mathbb{R} - \left\{ K\pi + \frac{3\pi}{2}, K\pi + \frac{\pi}{2} \right\}$$

ب) $\cot m - 1 \neq 0$

$$\cot m \neq 1$$

$$\sin \neq 0$$

$$D_f = \mathbb{R} - \left\{ K\pi + \frac{\pi}{4}, K\pi \right\}$$

③ الف) $-1 \leq m^2 - 2 \leq 1$

$$1 \leq m^2 \leq 3$$

$$\begin{cases} 1 \leq m \leq \sqrt{3} \\ -1 \geq m \geq -\sqrt{3} \end{cases}$$

$$D_f = [-\sqrt{3}, -1] \cup [1, \sqrt{3}]$$

ب) $\sqrt{m} \geq 0 \Rightarrow m \geq 0$

$$-1 \leq \sqrt{m} - 2 \leq 1$$

$$2 \leq \sqrt{m} \leq 4$$

$$4 \leq m \leq 16$$

$$D_f = [4, 16]$$

④ الف) $-1 \leq |m| - 2 \leq 1$

$$2 \leq |m| \leq 4$$

$$\begin{cases} 2 \leq m \leq 4 \\ -2 \geq m \geq -4 \end{cases}$$

$$D_f = [-4, -2] \cup [2, 4]$$

ب) $-1 \leq m^2 + 3m + 2 \leq 1$

$$\frac{-2-1}{2} \leq m^2 + 3m + 2 \leq \frac{-2+1}{2} \Rightarrow (m+1)(m+2)$$

$$\frac{-3-0}{2} \leq m(m+3) \leq 0$$

$$D_f = [-3, -2] \cup [-1, 0]$$

⑤ الف) $m^2 - 4 > 0$

$$m^2 > 4$$

$$\begin{cases} m > 2 \\ m < -2 \end{cases}$$

$$D_f = (-\infty, -2) \cup (2, +\infty)$$

ب) $2 - |m| > 0$

$$|m| < 2$$

$$-2 < m < 2$$

$$D_f = (-2, 2)$$

④ الف) $m-3 > 0$ $\omega - m > 0$
 $m > 3$ $m < 5$
 $m-3 \neq 4$ $R_f = (3, 5) - \{4\}$
 $m \neq 4$

→) $m+3 > 0$ $m^2-1 > 0$
 $m > -3$ $m^2 > 1$
 $m+3 \neq 1$ $\begin{cases} m > 1 \\ m < -1 \end{cases}$
 $m \neq -2$
 $R_f = (-3, -1) \cup (1, +\infty) - \{-2\}$

⑤ الف) $\frac{(m-3)(m-1)}{m-3} > 0$
 $\frac{m-1}{1} > 0$
 $m-1 > 0$
 $m > 1$
 $R_f = (1, +\infty) - \{3\}$

→) $m+\omega > 0$ $\frac{m+3}{m-3} > 0$
 $m > -\omega$
 $m+\omega \neq 1$
 $m \neq -2$
 $R_f = (-\omega, -3) \cup (2, +\infty) - \{-2\}$

① الف) $\log_2^{(m-2)} \leq 2$
 $m-2 \leq 1$
 $m \leq 3$
 $m-2 > 0$
 $m > 2$
 $R_f = (2, 3]$

→) $2 \log_2^m - 1 > 0$
 $2 \log_2^m > 1$
 $\log_2^m > \frac{1}{2}$
 $m > \sqrt{2}$
 $R_f = (\sqrt{2}, +\infty)$

② الف) $\epsilon^m \neq 1$
 $R_f = \mathbb{R}$

→) $\epsilon^m \neq 1$
 $R_f = \mathbb{R} - \{0\}$

ب) $\epsilon^m \neq 2$
 $R_f = \mathbb{R} - \{\frac{1}{2}\}$

→) $\epsilon^m \neq 2$
 $R_f = \mathbb{R} - \{\log_2^2 \epsilon\}$

③ الف) $\epsilon m a \in \omega$
 $m \in \frac{1+\omega}{\epsilon}$
 $R_f = \{n / n = \frac{K-1}{\epsilon}, K \in \omega\}$

→) $\frac{\epsilon m - 1}{\epsilon m - \omega} \in \omega$
 $R_f = \{n / n = \frac{-\omega K + 1}{\epsilon - \omega K}, K \in \omega\}$