

1, 2

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

ii) $y = \frac{\sin x - 1}{1 + \cos x} \Rightarrow 1 + \cos x \neq 0 \quad 1 + \cos x \neq -1 \quad \cos x \neq -1$

$Df = \{x \mid x \neq \pi + 2k\pi\}$

iii) $y = \frac{\sin x + 1}{\cos x - 1} \Rightarrow \cos x \neq 1 \quad Df = \{x \mid x \neq 2k\pi\}$

iv) $y = \frac{1 + \sin x}{\tan x + 1} \Rightarrow \tan x \neq -1 \quad Df = \{x \mid x \neq \frac{3\pi}{4} + k\pi, x \neq \frac{7\pi}{4} + k\pi\}$

v) $y = \frac{\cos x + 1}{\cot x - 1} \Rightarrow \cot x \neq 1 \quad Df = \{x \mid x \neq \frac{\pi}{4} + k\pi, x \neq \frac{5\pi}{4} + k\pi\}$

vi) $\sin y = x^2 - 1 \Rightarrow -1 \leq x^2 - 1 \leq 1 \Rightarrow 0 \leq x^2 \leq 2 \Rightarrow -\sqrt{2} \leq x \leq \sqrt{2}$

vii) $y = \arccos(\sqrt{x} - 1) \Rightarrow \sqrt{x} - 1 \in [-1, 1] \Rightarrow 0 \leq x \leq 4$

viii) $\cos y = |x| - 1 \Rightarrow -1 \leq |x| - 1 \leq 1 \Rightarrow 0 \leq |x| \leq 2 \Rightarrow -2 \leq x \leq 2$

ix) $y = \arcsin(x^2 + 3x + 1) \Rightarrow -1 \leq x^2 + 3x + 1 \leq 1 \Rightarrow -2 \leq x \leq 0$

x) $y = \log_{10} x^2 - 5 \Rightarrow x^2 - 5 > 0 \Rightarrow x < -\sqrt{5} \text{ or } x > \sqrt{5}$

xi) $y = \log_2(x - 1) \Rightarrow x - 1 > 0 \Rightarrow x > 1$

xii) $y = \log_{2x-1}(\omega - x) \Rightarrow \omega - x > 0 \Rightarrow x < \omega$

xiii) $y = \log_{x^2-1} x \Rightarrow x^2 - 1 > 0 \Rightarrow x < -1 \text{ or } x > 1$

xiv) $y = \log_{x^2-1} \frac{x^2-5x+6}{x-1} \Rightarrow \frac{x^2-5x+6}{x-1} > 0$

xv) $y = \log_{x+\omega} \frac{x+\omega}{x-1} \Rightarrow \frac{x+\omega}{x-1} > 0$

$$a) y = \sqrt{w - \log_p(x-1)} = w - \log_p(x-1) \geq 0 \quad (x-1) \geq 1 \Rightarrow x \geq 2$$

$$w \geq \log_p(x-1)$$

$$1 \geq x-1$$

$$1 \geq x$$

$$D_f = [1, \infty - \infty)$$

$$D_f = (1, 1]$$

$$b) y = \log(2 \log_p w - 1) = \log w \geq \frac{1}{p}$$

$$x \geq w^{\frac{1}{p}}$$

$$D_f = [w^{\frac{1}{p}} + \infty)$$

$$D_f = \mathbb{R}$$

$$c) y = \frac{w}{e^{2x} + 1} = \log_e^x \neq \log_e^1 \quad \text{منه صفر وقت جواب نداشت}$$

$$d) y = \frac{w}{e^{2x} - 1} = \log_e^x \neq \log_e^1 \quad x \neq 0 \quad D_f = \mathbb{R} - \{0\}$$

$$e) y = \frac{w}{e^{2x} - w} = e^x \neq w \quad x \neq \log_e^w \quad D_f = \mathbb{R} - \{\log_e^w\}$$

$$f) y = \frac{w}{e^{2x} - w} = e^x \neq w \quad x \neq \log_e^w \quad D_f = \mathbb{R} - \{\log_e^w\}$$

$$g) y = (e^{2x+1})! = e^{2x+1} \in \mathbb{W} \quad e^{2x} \in \mathbb{W} - 1 \quad x \in \frac{\mathbb{W}-1}{2} \quad D_f = \{x | x = \frac{k-1}{2}, k \in \mathbb{W}\}$$

$$h) y = \left(\frac{wx - 2}{2x - w} \right)! =$$

$$wx - 2 = 2wx - w$$

$$wx - 2wx = -w + 2$$

$$(w-2w)x = -w + 2$$

$$x = \frac{-w + 2}{w - 2w}$$

$$D_f = \{k | k = \frac{-w + 2}{w - 2k}, k \in \mathbb{W}\}$$

$$\frac{wx-2}{2x-w} \in \mathbb{W}$$

$$x = -\frac{-w + 2}{2w - w}$$