

$$(1) y = \frac{\sinh x - 2}{2 \cosh x - 1}$$

$$(2) y = \frac{\sinh x + 3}{\cosh x - 1}$$

$$(3) y = \frac{2 \sinh x + 1}{\tanh x + 1}$$

$$(4) y = \frac{\cosh x + 1}{\cosh x - 1}$$

$$\sinh y = x^2 - 2$$

$$(5) y = \arccos(\sqrt{x} - 3)$$

$$(6) \cos y = |x| - 3$$

$$(7) y = \arcsinh(x^2 - 3x + 1)$$

$$(8) y = \log_3 x^2 - 4 \rightarrow x^2 - 4 > 0 \rightarrow x^2 > 4 \rightarrow x > 2$$

$$(9) y = \log_3 2 - |x| \rightarrow 2 - |x| > 0 \rightarrow 2 > |x| \rightarrow |x| < 2$$

$$(10) y = \log_{x-3} 5 - x \rightarrow 5 - x > 0 \rightarrow 5 > x \quad | \quad x - 3 > 0 \quad , \quad x - 3 \neq 1$$

$$(x=5)$$

$$(11) y = \log_{x+3} x^2 - 1 \rightarrow x^2 - 1 > 0 \rightarrow x^2 > 1 \rightarrow x > 1 \quad | \quad x + 3 > 0 \quad , \quad x + 3 \neq 1$$

$$(12) y = \log_{x-3} \frac{x^2 - 4}{x + 3}$$

$$(13) y = \log_{x+3} \frac{x+3}{x-2} \rightarrow \frac{x+3}{x-2} > 0$$

$$x+3 > 0 \rightarrow x > -3 \quad , \quad x+3 \neq 1 \rightarrow x \neq -2$$

$$(14) y = \sqrt{3 - \log(x-2)}$$

$$x-2 > 0 \quad | \quad \text{IDEA} \quad \frac{3 - \log(x-2)}{3} \geq 0$$

$$(15) y = \log(2 \log_3 x - 1)$$

Subject:

(9)

الف) $y = \frac{3}{x^2+1} \rightarrow x^2+1 > 0 \rightarrow x^2 > -1$
مستحيل

ب) $y = \frac{3}{x^2-1} \rightarrow x^2-1 > 0 \rightarrow x^2 > 1 \checkmark$

ج) $y = \frac{3}{x^2-2} \rightarrow x^2-2 > 0 \rightarrow x^2 > 2 \checkmark$

د) $y = \frac{3}{x^2-3} \rightarrow x^2-3 > 0 \rightarrow x^2 > 3 \checkmark$

الف) $y = (x+1)! \rightarrow x+1$

(10)

ب) $y = \left(\frac{3x-1}{x-2} \right)!$
 $\rightarrow x-2 \neq 0$
 $x \neq 2$
 $x \neq \frac{2}{3}$