TOPIC 02

Solve the following problems in the real domain.

(1)
$$e^x + 12e^{-x} = 7$$

$[\log 3, \log 4]$

(2)
$$3^x - 1 = 1 - 3^{-x}$$

$[0]$

(3)
$$\frac{5^x}{5} + \frac{6}{5 \cdot 5^x} = 1$$

$\left[\frac{\log 2}{\log 5}, \frac{\log 3}{\log 5}\right]$

(4)
$$4^x + 2^{x+1} = 8$$

$[1]$

(5)
$$3^{2x+1} + 8 \cdot 3^x = 3$$

$[-1]$

(6)
$$3^{1+x} + 3^{1-x} = 10$$

$[-1, 1]$

(7)
$$3^{|x^2+1|-1} = 9$$

$[-\sqrt{2}, \sqrt{2}]$

(8)
$$e^{x+1} = e^{|2x+3|}$$

$[\varnothing]$

(9)
$$e^{x^2+2|x|+1} \leq 1$$

$[\varnothing]$