Question

Solve the following equation:

$$3 \cdot 10^{-x} + 1 = 10$$

Solution

$3 \cdot 10^{-x} + 1 = 10$;

$3 \cdot 10^{-x} = 10 - 1$;

$3 \cdot 10^{-x} = 9$;

$10^{-x} = \dfrac{9}{3}$;

$10^{-x} = 3$;

$\lg\left(10^{-x}\right) = \lg(3)$;

$-x = \lg(3)$;

$x = -\lg(3)$.

Answer: $x = -\lg(3)$.