Condition

$2^x=3$, find the x.

Solution

In order to solve for x we need to use the decimal logarithms. We place them on each side of the equation.

$2^x=3$

$\lg 2^x=\lg 3$

We use one logarithm formulas in order to simplify the equation: $\log_a b^p= p\cdot\log_a b$, so that we can write: $x\cdot\lg 2=\lg 3$

Decimal logarithm has its value, so we know that approximate values are the following:

$\lg 2=0.3$ and $\lg 3=0.48$, so that we can write:

$x\cdot 0.3=0.48$

$x=\dfrac{0.48}{0.3}$

$x=1.6$

Answer: $x\approx 1.6$