Logarithms

A logarithm is an inverse to _____. This means that the logarithm is the _____ to which another fixed number, the _____, must be raised to produce the _____.

$b^x = a$ means the same as

In both versions of this equation, there are some restrictions on the components.

Base:_____

Exponent:_____

Argument:_____

Examples:

1. $\log_3 27$

2. $\log_4 \frac{1}{256}$

3. $\log_{27} \frac{1}{9}$

Log Rules:

Product Rule: $\log_b(zw) =$	$\log_2(8x)$
Quotient Rule: $\log_b\left(\frac{z}{w}\right) =$	$\log_5\left(\frac{x}{25}\right)$
Power Rule: $\log_b(z^w) =$	$\log_7(x^5)$