18.1 – Changing Forms of Logarithms

Logarithm
If $y = b^x$, then $\log_b y = x$.

Rewrite each expression in logarithmic form.

1. $25 = 5^2$
   $\quad y \quad b^x$
   $\log_5 25 = 2$

2. $729 = 3^6$
   $\quad y \quad b^x$
   $\log_3 729 = 6$

3. $10^0 = 1$
   $\quad b^x \quad y$
   $\log_{10} 1 = 0$

Rewrite each expression in exponent form.

4. $\log_8 16 = x$
   $\quad b \quad y \quad x$
   $16 = 8^x$

5. $\log_9 27 = x$
   $\quad b \quad y \quad x$
   $27 = 9^x$

6. $\log_{10} 100 = x$
   $\quad b \quad y \quad x$
   $100 = 10^x$

A common logarithm is a logarithm that uses base 10. Common logarithms can be written as $\log_{10} y$ or $\log y$.

So, $\log_{10} 100$ can be written $\log 100$!