

$$= 10 \times 10 \times 10 =$$

$10^3$  ) ; the multiplication is repeated three times . More generally , exponentiation allows any positive real number to be raised to any real power , always producing a positive result , so the logarithm can be calculated for any two positive real numbers  $b$  and  $x$  where  $b$  is not equal to 1 . The logarithm of  $x$  to base  $b$  , denoted  $\log_b ( x )$  , is the unique real number  $y$  such that