= 0 , since b1 =
b and b0 = 1 , respectively .

= = Logarithmic identities = =

Several important formulas , sometimes called logarithmic identities or logarithmic laws , relate logarithms to one another .

= = = Product , quotient , power and root = = =

The logarithm of a product is the sum of the logarithms of the numbers being multiplied ; the logarithm of the ratio of two numbers is the difference of the logarithms . The logarithm of the p @-@ th power of a number is p times the logarithm of the number itself ; the logarithm of a p @-@ th root is the logarithm of the number divided by p . The following table lists these identities with examples . Each of the identities can be derived after substitution of the logarithm definitions <formula> or <formula> in the left hand sides .

= = = Change of base = = =

The logarithm logb (x) can be computed from the logarithms of x and b with respect to an arbitrary base k using the following formula :
<formula>
Typical scientific calculators calculate the logarithms to bases 10 and e . Logarithms with respect to any base b can be determined using either of these two logarithms by the previous formula :
<formula>
Given a number x and its logarithm logb (x) to an unknown base b , the base is given by :
<formula>

= = Particular bases = =