# 1. Exponents and logarithms

## 1.1 Integer Exponents

* + 1. Exponent is a simple way of writing repeated multiplication
    2. In an expression like , the 2 is called the **base** and the 5 is the **exponent** or **power**
    3. Multiplication of two expressions with the same base
    4. Dividing of two expressions with the same base
    5. A negative exponent

1. Raising exponential expressions to power
   * 1. Any nonzero number raised to the zero power equals 1
     2. Zero raised to any negative power or null is undefined

## 1.2 Fractional Exponents

1. *n*th root of *a is* the number which, when raised to the *n*th power, equals *a.* The symbol for that meaning is called **radical**.When no *n* is written, then the symbol is assumed to be the square root.

Powers which are reciprocals of integers, like 1/3,1/4,1/5, and so on

1. The exponent 1/2 has a special name, the **square root**, the exponent 1/3 has a cpecial name, the **cube root.**
2. When working with fractional powers in which the numerator is not 1, we use our rule for raising exponential expressions to powers backwards:
3. Notice the difference between and . The first denotes the square root of -1 , while the second asks for the negative of the square root of 1.