= 1000 and 10 ? 4 =
0 @.@ 0001 .
Exponentiation with base 10 is used in scientific notation to denote large or small numbers . For instance , 299792458 m / s (the speed of light in vacuum , in metres per second) can be written as 2 @.@ 99792458 × 108 m / s and then approximated as 2 @.@ 998 × 108 m / s .
SI prefixes based on powers of 10 are also used to describe small or large quantities . For example , the prefix kilo means 103 = 1000 , so a kilometre is 1000 m .

= = = = Powers of two = = = =

The positive powers of 2 are important in computer science because there are 2n possible values for an n @-@ bit binary register .
Powers of 2 are important in set theory since a set with n members has a power set , or set of all subsets of the original set , with 2n members .
The negative powers of 2 are commonly used , and the first two have special names : half , and quarter .
In the base 2 (binary) number system , integer powers of 2 are written as 1 followed or preceded by a number of zeroes determined by the sign and magnitude of the exponent . For example , two to the power of three is written as 1000 in binary .

= = = = Powers of one = = = =

The powers of one are all one : 1n = 1 .

= = = = Powers of zero = = = =