The **natural numbers** (denoted $\mathbb{N}$) are the numbers 0, 1, 2, ... Note that the sum and product of natural numbers are natural numbers.

The **integers** (denoted $\mathbb{Z}$) are the numbers 0, -1, 1, -2, 2, -3, 3, ... Note that the sum, product, and difference of integers are integers.

The **rational numbers** (denoted $\mathbb{Q}$) are all numbers that can be written in the form $\frac{m}{n}$ where m and n are integers and $n \neq 0$. The sum, product, difference, and quotient of rational numbers are also rational numbers (provided you don't attempt to divide by 0).

The **real numbers** (denoted $\mathbb{R}$) are numbers that can be written in decimal form, possibly with an infinite number of digits after the decimal point. The sum, product, difference, and quotient of real numbers are also real numbers (provided you don't attempt to divide by 0).

The **irrational numbers** are real numbers that are not rational, i.e. that cannot be written as a ratio of integers.

An integer n is **divisible by** m iff $n = mk$ for some integer k. (This can also be expressed by saying that m evenly divides n.) So for example, n is divisible by 2 iff $n = 2k$ for some integer k; n is divisible by 3 iff $n = 3k$ for some integer k, and so on. Note that if n is *not* divisible by 2, then n must be 1 more than a multiple of 2 so $n = 2k + 1$ for some integer k. Similarly, if n is not divisible by 3 then n must be 1 or 2 more than a multiple of 3, so $n = 3k + 1$ or $n = 3k + 2$ for some integer k.

An integer is **even** iff it is divisible by 2 and **odd** iff it is not.

An integer $n > 1$ is **prime** if it is divisible by exactly two positive integers, namely 1 and itself. Note that a number must be greater than 1 to even have a chance of being termed "prime". In particular, neither 0 nor 1 is prime.