

## **A Basic Introduction to Number Theory and Classification**

The most iconic part of math is that it is made up of numbers: a whole bunch of sequential, predictable little markings that supposedly mean something. Those who study math intently, in other words, have little to no social life (this is partially a joke) have interestingly enough categorized numbers into many distinct categories. Here are the ones that you need to know.

### Categories of Numbers

- Real Numbers*: All numbers that are not imaginary. While this sounds stupid, there are such things as imaginary numbers, but you don't have to worry about that until like Algebra 2. Or Precalculus. So for now, just think of it as all the numbers in the whole wide world.
- Whole Numbers*: These are, well, all the whole numbers. So ... 0, 1, 2, 3, 4, 5, etc.
- Natural (Counting) Numbers*: These are almost like the whole numbers, except without the zero. So ... 1, 2, 3, 4, 5, 6, etc.
- Integers*: Kind of like the whole numbers, but also the negative ones as well. What I mean by that is ... -2, -1, 0, 1, 2, etc.
- Rational Numbers*: Technically, this means "all numbers that can be expressed by a ratio of two integers." To put that into simpler terms, these are all integers as well as any number that has a decimal that ends or repeats.
- Irrational Numbers*: These are the ugly cousins of the rational numbers. Basically, they are all the numbers with decimals that do not end or do not repeat. Nobody likes them anyway.

### Properties of Numbers

- Even Numbers*: Pretty much any nonzero integer that can be divisible by two.
- Odd Numbers*: Pretty much any nonzero integer that cannot be divisible by two.
- Prime Numbers*: Any integer whose only factors are 1 and itself.
- Composite Numbers*: Any integer that has more factors than just 1 and itself.

While this lesson may seem fairly easy, please keep in mind that all of math builds off of each other. For all intents and purposes, this is a vocabulary lesson to help you become more familiar with the verbiage that we use in math.

