Real Numbers (R)

Irrational

Non-terminating, non-repeating decimals

Rational

Terminating or non-terminating, repeating decimals

Integers

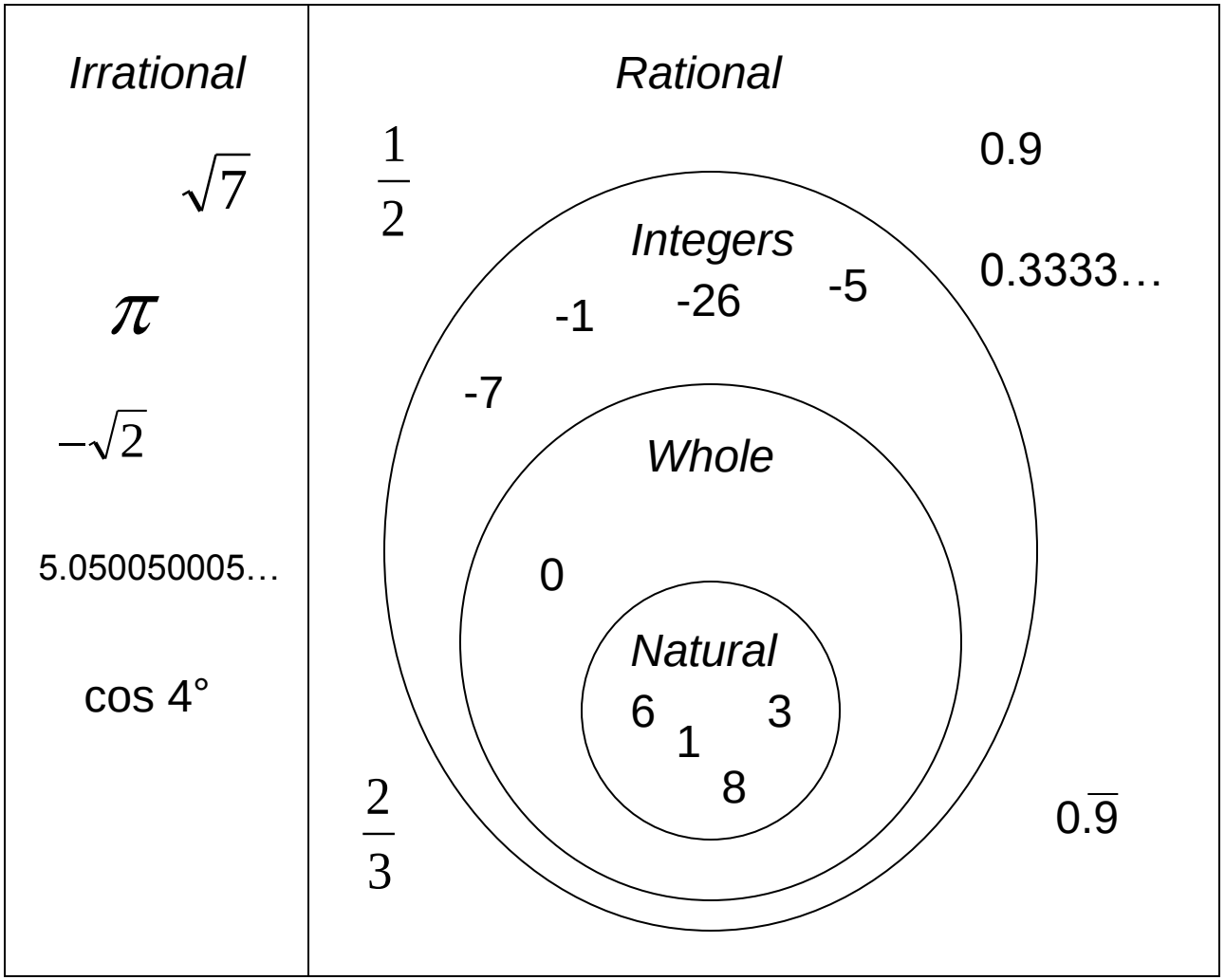
{…. -2, -1, 0, 1, 2,…. }

Whole

{0,1, 2, 3, 4, 5, …… }

Natural

{1, 2, 3, 4, 5 ….. }



Descriptions

- **Real Numbers**
  Here is another category where some other of the number classifications will fit. Real numbers include natural numbers, whole numbers, integers, rational numbers and irrational numbers. Real numbers also include fraction and decimal numbers.
- **Natural Numbers**
  Natural numbers are what you use when you are counting one to one objects. You may be counting pennies or buttons or cookies. When you start using 1,2,3,4 and so on, you are using the counting numbers or to give them a proper title, you are using the natural numbers.
- **Whole Numbers**
  Whole numbers are easy to remember. They're not fractions, they're not decimals, they're simply whole numbers. The only thing that makes them different than natural numbers is that we include the zero when we are referring to whole numbers. However, some mathematicians will also include the zero in natural numbers and I'm not going to argue the point. I'll accept both if a reasonable argument is presented. Whole numbers are 1, 2, 3, 4, and so on.
- **Integers**
  Integers can be whole numbers or they can be whole numbers with a negative signs in front of them. Individuals often refer to integers as the positive and negative numbers. Integers are -4, -3, -2, -1, 0, 1, 2, 3, 4 and so on.
- **Rational Numbers**
  Rational numbers have integers AND fractions AND decimals. Now you can see that numbers can belong to more than one classification group. Rational numbers can also have repeating decimals which you will see be written like this: 0.54444444... which simply means it repeats forever, sometimes you will see a line drawn over the decimal place which means it repeats forever, instead of having a ...., the final number will have a line drawn above it.
- **Irrational Numbers**
  Irrational numbers don't include integers OR fractions. However, irrational numbers can have a decimal value that continues forever WITHOUT a pattern, unlike the example above. An example of a well known irrational number is pi which as we all know is 3.14 but if we look deeper at it, it is actually 3.14159265358979323846264338327950288419.....and this goes on for somewhere around 5 trillion digits!

http://math.about.com/od/mathhelpandtutorials/a/Understanding-Classification-Of-Numbers.htm