

Chapter 4 Section 5

Introduction To Real Numbers

Numbers are placed in sets that is a collection of elements. Those Elements can be:

1. **Positive Numbers (Natural Number)**
2. **Zero**
3. **Negative Numbers.**
4. **The Natural numbers can be:**
 - a. a Prime number, when it the number is greater than 1 and it is divisible evenly by itself and 1
 - b. a Composite number: when the number is not prime, or on another words a number that is multiple of primes.
5. **Whole Numbers:** Are comprised of the natural numbers and zero.
6. **Integers:** Are comprised of the whole numbers and the negative numbers.
7. **Rational Numbers:** Numbers that include fractions and decimal numbers.
8. **Irrational Number:** Numbers that have decimal representation that neither terminates nor repeats.
9. **Real number:** Irrational number + Rational number.

Real Numbers

Rational Numbers

Integers Numbers

Negative

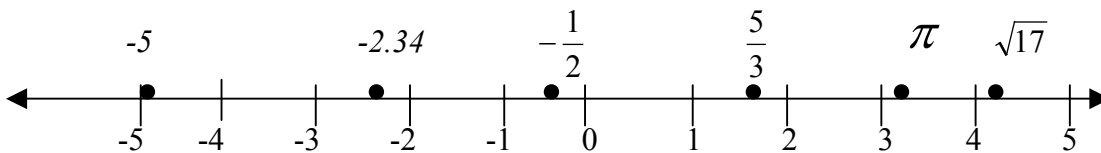
Whole Numbers

Zero

Positive
Natural
Numbers

Irrational Numbers

The graph of a real number is made by placing a solid point on the number line. This type of number line is known as the **real number line**.



In the example above only -5 , -2.34 , $-\frac{1}{2}$, $\frac{5}{3}$, π and $\sqrt{17}$ have been graphed. To include the values in between two values on the line an area would need to be shaded.



In the example above all of the values between 3 and 5, including 3 and 5 have been graphed as part of a solution.

To not include the endpoints of 3 and five, the dots would not have been shaded.