# Numbers

Work with a classmate. This does not need to be turned in.

## Part 1:

For each of the following sets of numbers, give a definition (as best as you can), give an example of a number in that set, and give an example of a number that is not in that set.

0. $\mathbb{N}$, natural numbers

1. $\mathbb{Z}$, the integers

2. $\mathbb{Q}$, rational numbers

3. Irrational numbers

## Part 2:

After our class discussion, fill in the following statements:

1. The set $\mathbb{Z}$ of integers is closed under _____and _____, but not _____.

2. The set $\mathbb{Q}$ of all rational numbers is the set of all numbers that can be expressed as _____.

3. For example, the number 0.25 is rational because it can be expressed as _____.

4. Rational numbers are closed under_____ , _____, and _____.

5. Real numbers ($\mathbb{R}$) are the set of all _____and _____numbers.

6. Real numbers are closed under_____ , _____, and _____. (same as the rational numbers)

## Part 3:

Discuss the following with a classmate:

Rational numbers can be formed from integers by closing under _____ . How do we form real numbers from rational numbers? What are we closing under?