

## Math 115E Activity 1

Chapter 1 Section 1  
Number Systems and Solution Sets

### What are the different types of numbers?

- **Natural Numbers:**  $1, 2, 3, 4, \dots$ . We use the symbol  $\mathbb{N}$  to refer to the natural numbers.
- **Integers:**  $\dots, -4, -3, -2, -1, 0, 1, 2, 3, 4, \dots$ . We use the symbol  $\mathbb{Z}$  to refer to the integers.
- **Rational Numbers:** A number that can be expressed as a fraction  $p/q$  of two integers, where  $p$  is the numerator and  $q$  is the non-zero denominator.  
We use the symbol  $\mathbb{Q}$  for the rational numbers.
- **Irrational Numbers:** A number that cannot be expressed as a simple fraction.  
Its decimal representation is non-terminating and non-repeating.  
Examples include  $\pi$ ,  $e$ , and  $\sqrt{2}$ . We don't actually have a fancy symbol to describe the irrationals.

### Practice Problems

In this section you will give examples of each type of number, without clear repeats from the examples above

- **5 Natural Numbers:**
- **5 Integers:**
- **5 Rational Numbers:**
- **2 Irrational Numbers:**