

## Number Sets

Natural  $N = \{1, 2, 3, 4, 5, \dots\}$

Whole  $W = \{0, 1, 2, 3, 4, 5, \dots\}$

Integers  $Z = \{\dots, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, \dots\}$

Rational the set of real numbers that can be expressed as a ratio of integers

Note: Both terminating (e.g., 5.625) and repeating decimal numbers (e.g.,  $1.\overline{23}$ ) are rational.

Irrational the set of real numbers that cannot be expressed as a ratio of integers

Real the union of the rational and irrational number sets

## Symbols

$$2 + 2 = 4 \quad 7 \neq 2^3 \quad 5 > 4.9 \quad 2 \geq 2 \quad -3 < -1 \quad 0.3 \leq 1$$

Complete the table. Use Y for yes, and N for no.

	$\frac{6}{3}$	-4.5	$-1\frac{1}{6}$	$\sqrt{16}$	$\pi$	0	23	$\sqrt{2}$
1. Rational								
2. Irrational								
3. Whole								
4. Natural								
5. Integers								
6. Real								

Absolute value  $|x| = \text{abs}(x) =$  the distance from 0 to  $x$  on the real number line

7. (a)  $|-5|$  \_\_\_ 5                      (b)  $|-13|$  \_\_\_  $|-12|$                       (c)  $-13$  \_\_\_  $-12$

8. Solve  $|x| = 12$  for  $x$ .  $x =$  \_\_\_\_\_