

# The Absolute Value Function



## Preliminaries and Objectives

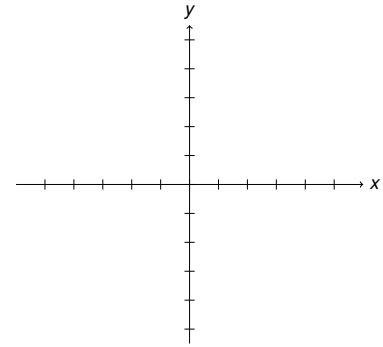
### Preliminaries

- Equations of Lines
- Piecewise Defined Functions

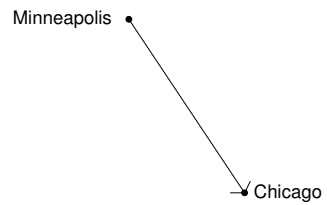
### Objectives

- Define the absolute value function

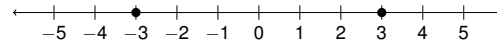
## Cartesian Coordinate System



## Length-Direction Navigation



## Length-Direction Navigation on the Number Line



## Definition of Absolute Value

### Absolute Value

$$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

