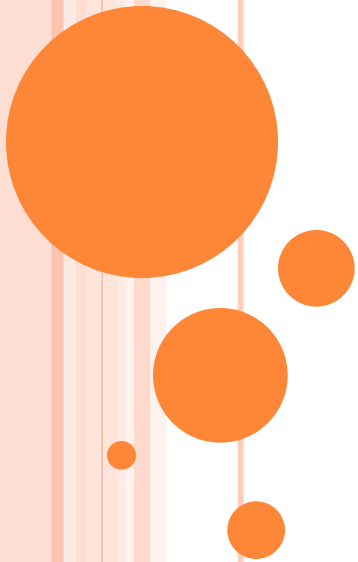# The Slope of a Line

Chapter 4
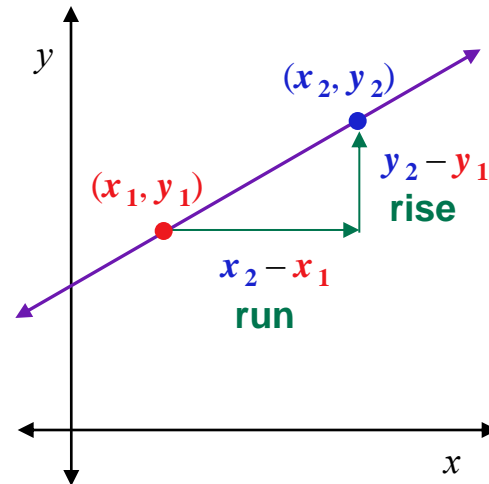## Section 4

SLOPE

- Slope: rate of change of a line
  - The steepness of a line

$$m = \frac{\text{rise}}{\text{run}} \qquad m = \frac{\text{change in y}}{\text{change in x}} \qquad m = \frac{y_2 - y_1}{x_2 - x_1}$$

- Where m = slope

FINDING SLOPE

- Find Slope Using Two Points:

  1. (2,3) (5,4)   2. (5,-1) (-3,6)

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$ $$m = \frac{y_2 - y_1}{x_2 - x_1}$$

$$m = \frac{4-3}{5-2}$$ $$m = \frac{6-(-1)}{-3-5}$$

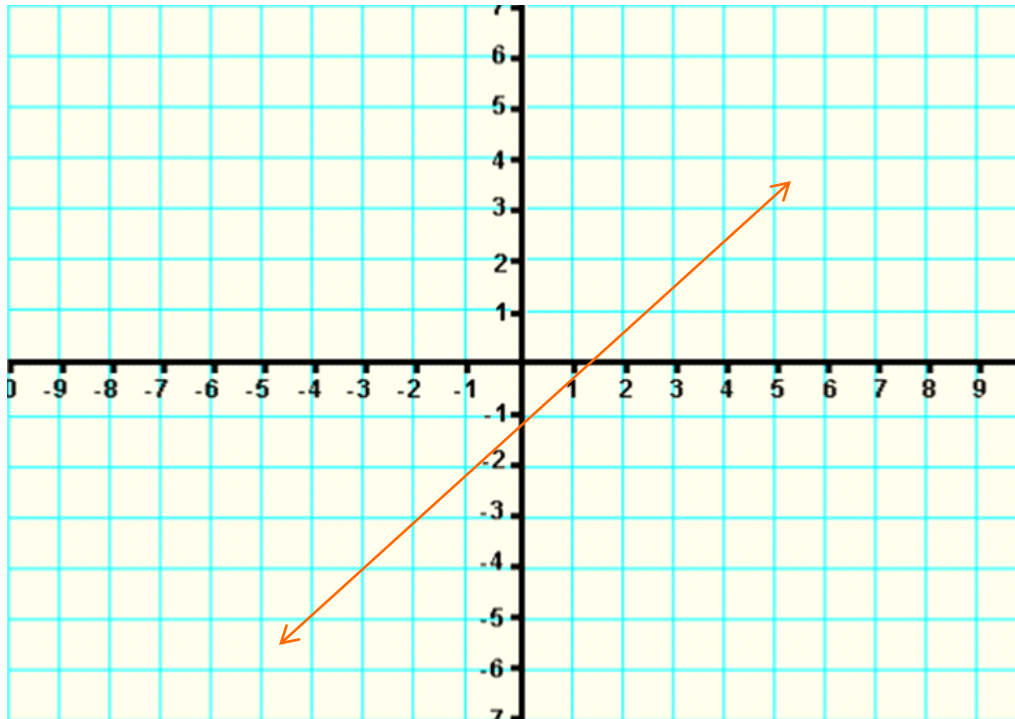$$m = \frac{1}{3}$$ $$m = \frac{7}{-8}$$

FIND THE SLOPE OF THE FOLLOWING:

- 3. (-1,2) and (-3,4)
- 4.   (-3,-5) and (9,10)

POSITIVE SLOPE

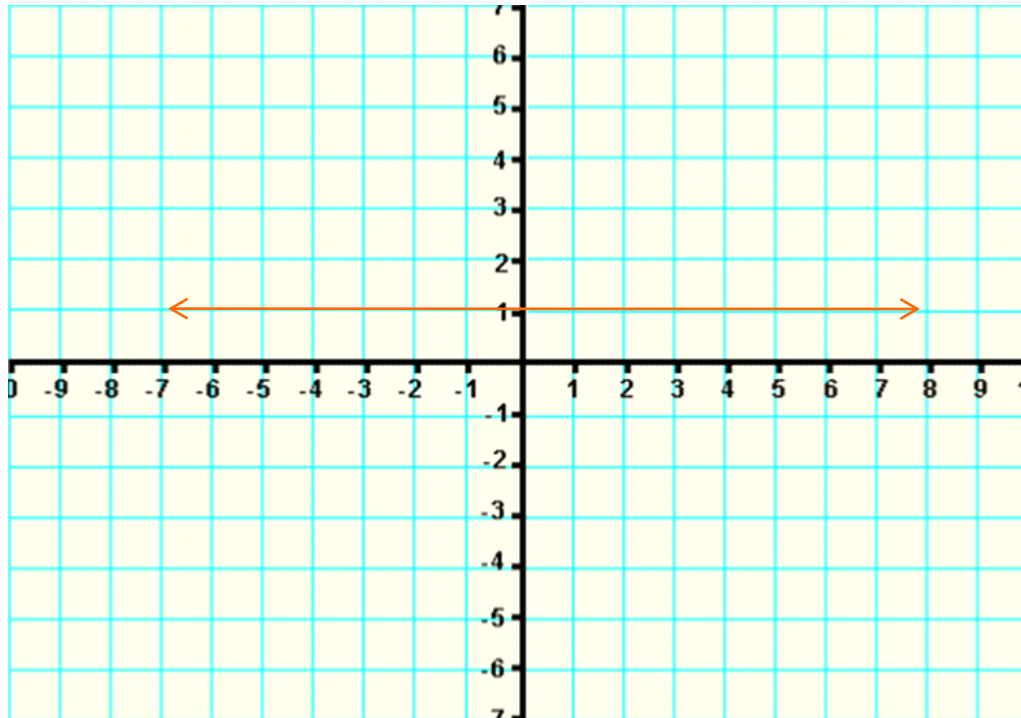- A line that rises from left to right is a positive slope.

NEGATIVE SLOPE

- A line that with a negative slope falls from left to right.

ZERO SLOPE

- A line with zero slope is a horizontal line.
- The m value will come out to be 0 over a number, which means the slope is zero.
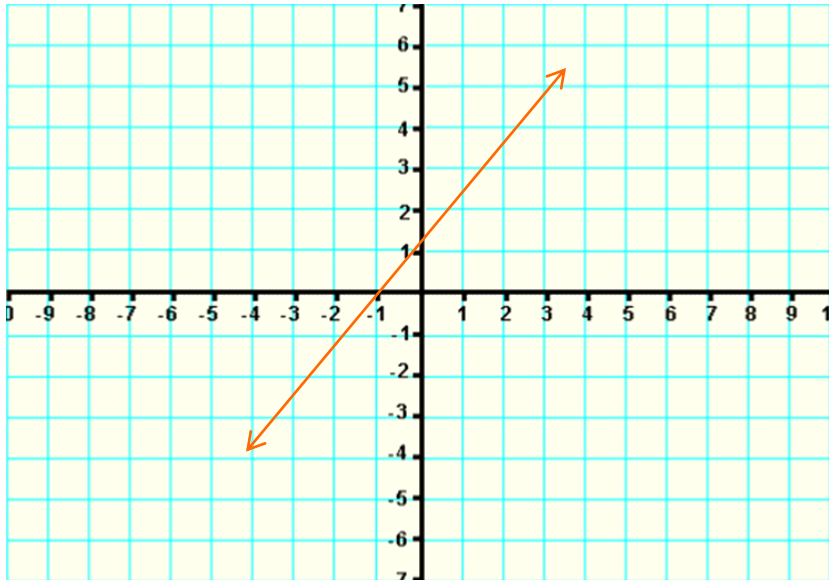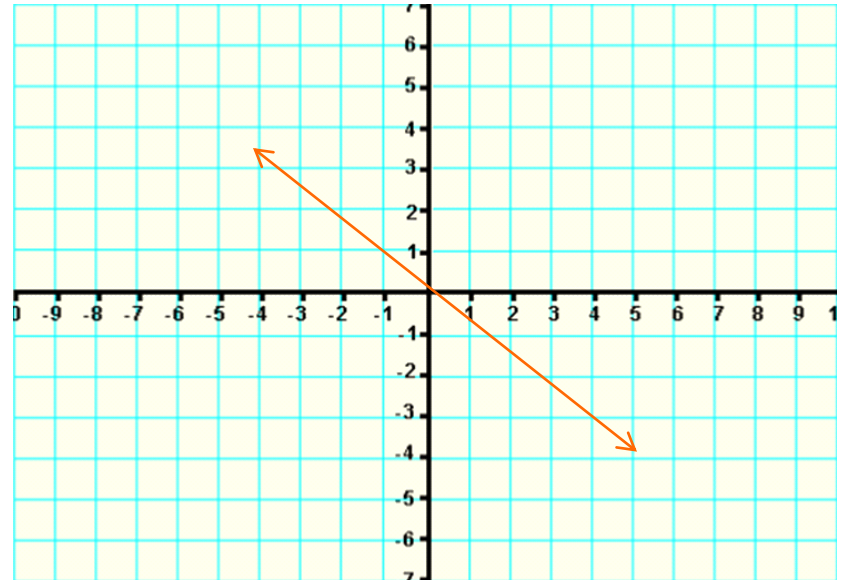- An **equation** that is **y= a number**, the slope will always be zero

UNDEFINED SLOPE

- A line that is an undefined slope is a vertical line.
- The m value will come out to be a non-zero number over 0.
- An **equation** that is **x= a** number will always have an undefined slope
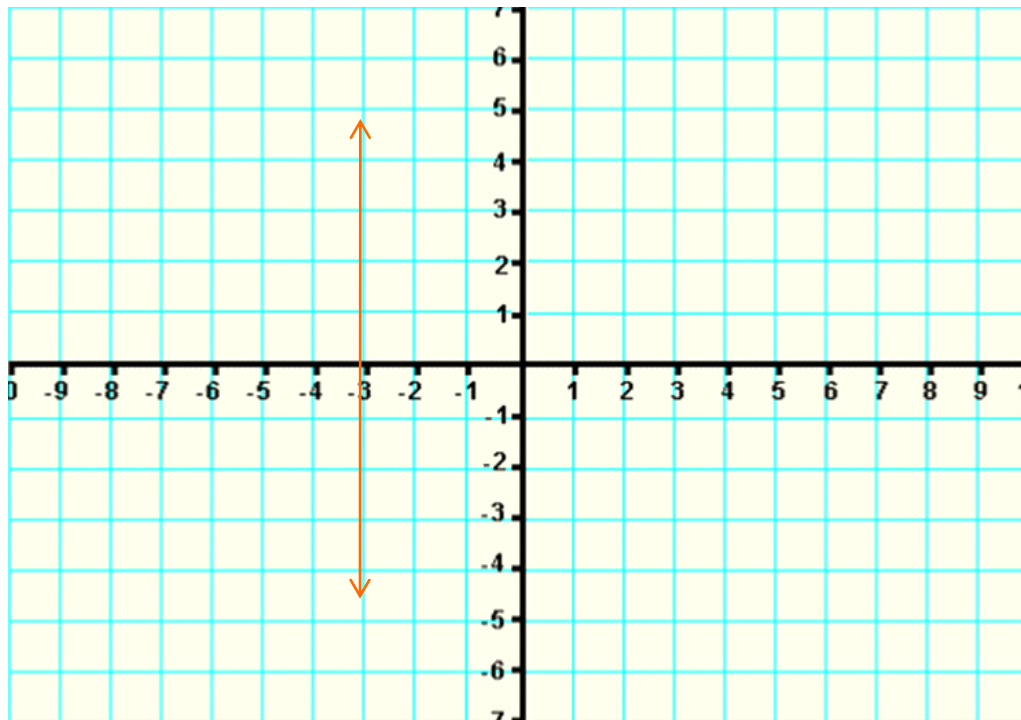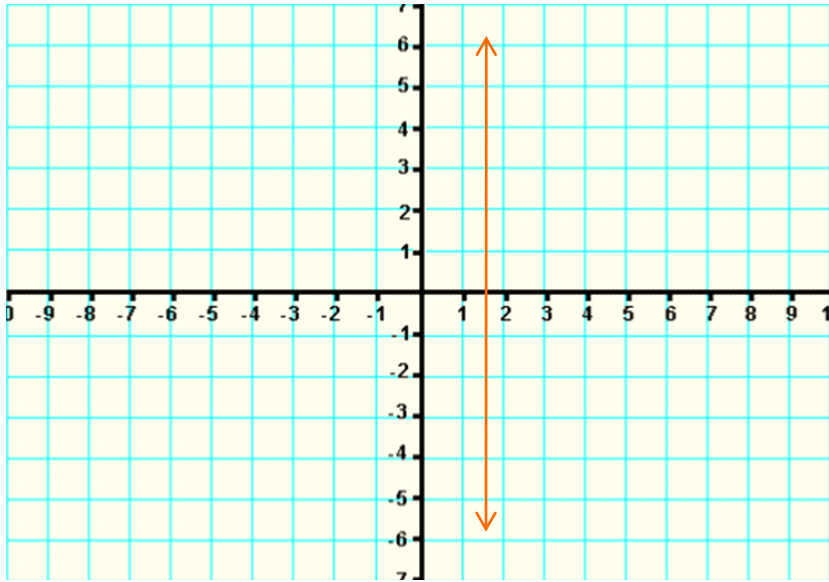
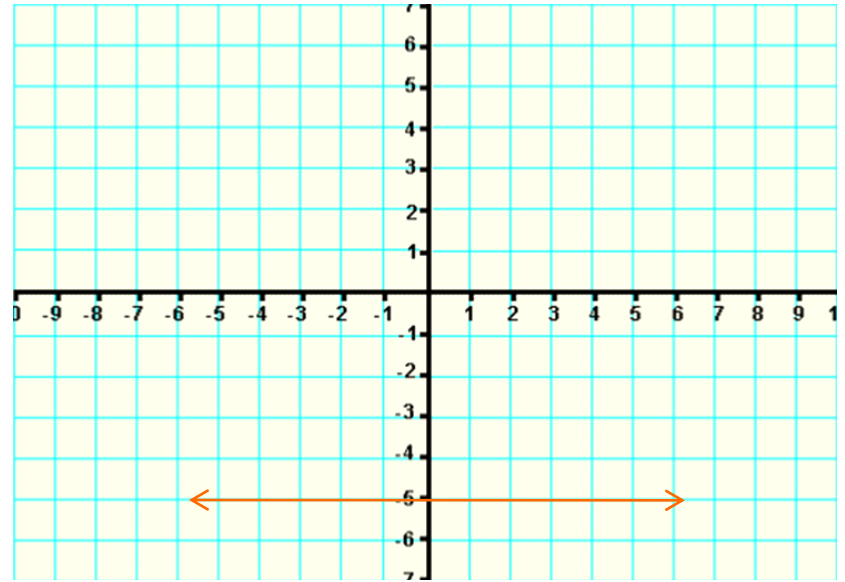# DESCRIBE THE SLOPE OF THE FOLLOWING:

Rising: Positive Slope

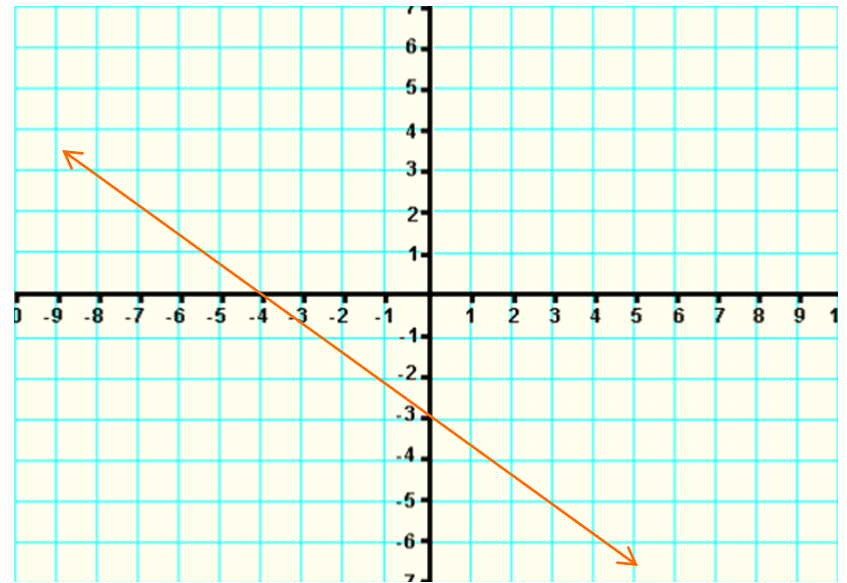**Falling: Negative Slope**
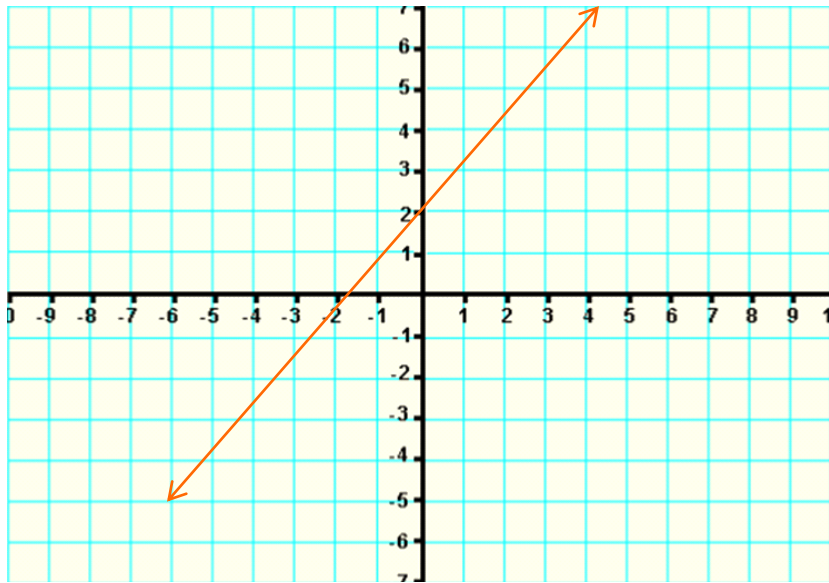
DESCRIBE THE SLOPE OF THE FOLLOWING:

Vertical Line: Undefined Slope

Horizontal Line: Zero Slope

WHAT IS THE SLOPE?

CLASS WORK

- Complete Worksheet

HOMEWORK

- Page 230 #12-16, 20-31 (just find the slope, do not graph the points) and 38-40