

## Vocabulary: Cat and Mouse (Modeling with Linear Systems)



### Vocabulary

- **Slope** – a measure of the steepness of a line.
  - For two points on a line,  $(x_1, y_1)$  and  $(x_2, y_2)$ , slope is defined as:

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

- For example, the slope of the line through the points  $(2, 1)$  and  $(5, 7)$  as shown to the right is:

$$\frac{7 - 1}{5 - 2} = \frac{6}{3} = 2.$$

- Slope is a measure of the rate of change of a quantity. The greater the slope, the faster the  $y$ -value is changing, with respect to  $x$ .
- **y-intercept** – the  $y$ -coordinate of a point where a graph intersects the  $y$ -axis.
    - In general, the  $y$ -intercept is the value of  $y$  when  $x = 0$ .

