

Section 2.2: Slope and Rate of Change

Mr. Dreyer
Algebra 2 Lv 1

1 Warmup

1. Welcome/expectations signatures on desk
2. Got calculators?
3. Write down homework: Read Section 2.2, p. 75-78. Problems: 2-9, 11, 13, 15, 17, 19, 23, 29, 31, 36, 45, 47-49, 53 (prove it), 54-56
4. What equation has as its solutions the graph shown?

2 Slope

Pay attention! Slope is one of the essential notions in calculus!

Definition. The *slope* of a line passing through the points (x_1, y_1) and (x_2, y_2) is

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

(Work examples)

1. What is the slope of a horizontal line?
2. A vertical line?
3. How can you tell algebraically which of two lines is steeper?
4. How do positive and negative slope look on a graph?
5. How are slopes related on parallel lines?
6. How are slopes related on perpendicular lines?
7. What happens if you switch the order of the points?

3 Rate of change

1. How is slope (a graphical idea) related to rate of change (a numerical idea)?

4 Classwork/homework