Math 1 Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Lesson 1-4 Average Rate of Change 1** Date\_\_\_\_\_\_\_\_

Learning Goals:

* *I can define and calculate the average rate of change of a function and explain the connection between average rate of change and slope.*
1. Suppose you take a trip to Columbus to see the Blue Jackets play the Pittsburgh Penguins. The Blue Jackets’ arena is about 150 miles from your house and the trip takes 3 hours. Sketch a graph showing the distance from your house over the number of hours driven.

![[image]]()

1. Describe what your graph tells you about the trip.

The **average rate of change** over an interval is given by . You probably know this as **slope.**

1. Use the formula above to calculate the average rate of change for your trip to Columbus. Make sure to include units in your answer.
2. Would you expect the rest of your classmates to get the same average rate of change for Number 3 regardless of how their graph looks? Why or why not?
3. The graph below represents a trip from Mayfield High School to everyone’s favorite theme park, Mathlevania.



1. How far from the high school is Mathlevania?

How long did the trip take?

1. How would you describe the trip?
2. Calculate the average rate of change from the start of the trip (point A) to Point B. Include units in your answer.
3. Calculate the average rate of change from point B to Point C. Include units in your answer.
4. Calculate the average rate of change from point C to Point D. Include units in your answer.
5. At which interval of your trip were you driving the fastest? How is shown in the graph? How is this shown in your calculations above?
6. Calculate the average rate of change from the start of the trip (point A) to the end. Include units in your answer. Compare this answer to your calculations from Parts c-e to explain why we call this the **average** rate of change.