

Air Travel

Team G

Before You Start

You are training to be an airline pilot. Your first flight will be from Jackson, Mississippi, to Syracuse, New York. To prepare yourself, you decide to investigate some of the mathematical aspects of this flight.

Review Vocabulary

- scale drawing
- constant of proportionality
- slope

Activity

You study a map of the U.S. to get an overview of your flight.

1. You will fly directly from Jackson, Mississippi, to Syracuse, New York.
 - a. Use the scale on the map. About how many miles is Syracuse from Jackson?

- b. About how many miles is a round trip between the cities?

2. a. About how long will your flight to Syracuse take if the speed of your plane, averaged over the course of the trip, is 415 miles per hour?

- b. If the plane travels 100 miles per hour slower, how will your flight's duration change?

- c. If your flight's duration is 2 hours and 45 minutes, what will be the plane's average speed over the course of the trip?

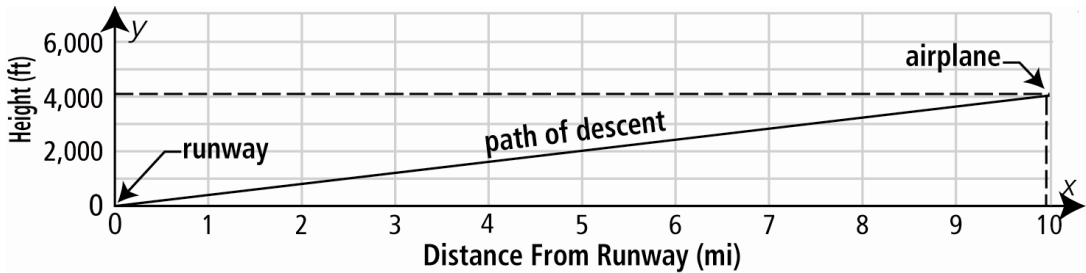


You examine your rate of climb out of Jackson and your descent to Syracuse.

3. As your plane flies out of Jackson, it climbs 12,000 feet in 6 minutes.
 - a. What is the constant of proportionality that represents the plane’s rate of climb?

- b. Use this constant of proportionality to find the plane’s altitude at 7, 8, and 10 minutes after takeoff.

4. The path of your plane’s descent into the Syracuse airport is shown below.



What is the slope of the path of the plane’s descent?

5. **QUICK REPORT** Use your results from this activity to complete the report below. In Column 2, use the duration of your flight when your plane travels 415 miles per hour.

Estimated Distance Between Cities	Duration of Flight	Slope of Descent Path

6. **REFLECT** Explain how you used each skill in this activity.

- a. using a scale drawing

- b. finding a constant of proportionality

- c. finding slopes of lines

