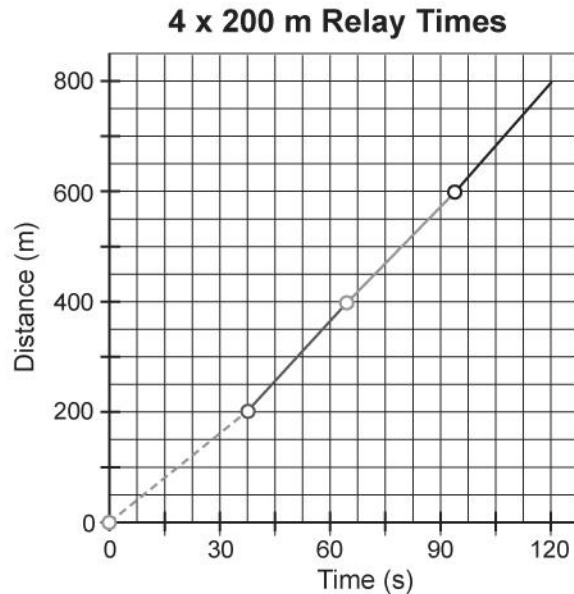


Math Lab: Analyzing Slope

The following graph represents the times required for each runner in a particular 4×200 m relay race. Study the graph and answer the questions that follow.



1. Use the information for the first runner (the dashed line) to answer the following questions.
 - a. How long did it take the first runner to run 200 m?
 - b. Calculate the slope of the dashed line segment, and report the final answer with units.
 - c. What does the slope of the dashed line segment represent?
2. A generally accepted strategy for ordering the runners in a relay race is to start with the second-fastest runner, followed by the third-fastest runner, then the slowest runner, and finally the fastest runner.
 - a. Who is the slowest runner as represented by the graph?
 - b. How do you know?

- 3. a.** Construct a line segment joining the first point on the graph and the last point on the graph.
- b.** Use the slope formula and the two endpoints of the line segment to calculate its slope. Show your answer rounded to the nearest hundredth.
- c.** What does the slope of this line represent?
- d.** Find two other points on the line besides the endpoints. Use these points in the slope formula to determine the slope. What do you notice about the result?
- e.** Extend the line segment beyond the endpoint. Choose a point on the extended part of the line, and explain what this point represents.