Student Sheet

NAME_____

INTERPRETING GRAPHS

Objective: To interpret a time-distance graph

Background: In science, essential information is often presented in line graphs. Line graphs show how one quantity depends on or changes with another. Speed is the distance (length of a path) an object travels in a unit of time.

The line graph below shows the distance a train traveled in a ten-hour trip. Time is shown on the horizontal axis, as the independent variable, and distance is shown on the vertical axis, as the dependent variable. Use the graph to answer these questions.

1. What unit of measurement is used in the scale on the horizontal axis? _____
2. What unit of measurement is used in the scale on the vertical axis? _____
3. How far did the train travel between the third and tenth hour? _____

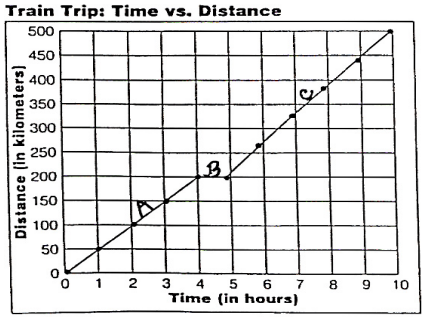
   During the entire trip? _____
4. Determine the train's average speed during the first four hours of its trip? _____
5. Between which hours did the train stop? _____

   What, on the graph, shows the train stopping? _____
6. Was the train moving at a constant speed during the last five hours of its trip? Explain your answer._____

   _____
7. Which letter on the graph identifies a part of the trip when the train moving the fastest?

   Circle one choice (**A** – start to 4 hrs, **B** – 4 to 5 hrs, **C** – 5 to 10 hrs)

   What was the speed during that time? _____



Student Sheet

NAME_____

Objective: To interpret a time- distance graph.

Background:

Speed is the distance (length of a path) an object travels in a unit of time. There are different "kinds" of speed. The speedometer in a car shows instantaneous speed. **Instantaneous speed** is the rate of motion at any given instant. On a highway, a car may travel at the same speed for a fairly long period of time. A speed that does not vary is called a **constant speed**. In the case where rate of motion varies a great deal, such as a bicycle trip, the best way to describe speed is to use average speed. **Average speed** is the total distance traveled divided by total time of travel.

The graph below shows the motion of a model racing car.
Use the graph to answer the following questions.

1. How far did the model racing car travel during the first second? _____

   What was the car's average speed during the first second? _____
2. What was the model racing car's average speed by the fifth second? _____
3. Calculate the model racing car's average speed between the ninth and the tenth second.

   _____

   Based on your calculations and the shape of the graph, what can you conclude about the car's speed over the entire 10-second interval? _____
4. What was the car's average speed for the <u>entire</u> trip? _____

   Draw a line **<u>on the graph</u>** indicating the average speed.