$\qquad$ Date $\qquad$ Period $\qquad$

## Speed and Velocity

Follow the path of the car shown below.

figure 1.

1. What is the difference between speed and velocity?
2. What is acceleration?
3. The car travels from B to C in 2.5 hours. What is the average velocity of the car during that part of the trip? Show work.
4. The entire trip took 6 hours. What is the average velocity for the trip? Show work.
5. The car started from a standstill and reached a speed of $100 \mathrm{~m} / \mathrm{s}$ during the first 20 seconds of the trip. What is the average acceleration of the car over those 20 seconds? Show work.
6. During the last 10 seconds of the trip, the car slows down from a speed of $150 \mathrm{~m} / \mathrm{s}$ to a stop. What is the deceleration of the car for those 10 seconds? Show work.

## Graphing speed

The table lists data about two airplanes at different speeds. Plot this data on the graph provided (draw a smooth line through the points). Then answer the questions below the graph.

| Time |  |  |
| :---: | :---: | :---: |
| (hr) | Distance <br> Plane 1 <br> (km) | Distance <br> Plane 2 <br> $(\mathbf{k m})$ |
| 1 | 150 | 200 |
| 2 | 300 | 400 |
| 3 | 450 | 600 |
| 4 | 600 | 800 |
| 5 | 750 | 1000 |
| 6 | 900 | 1200 |


7. This type of graph is called a
8. Describe your graph as linear or nonlinear. What is the difference between each?
9. The steepness of each line is called
10. Which airplane was traveling faster? Explain how the lines on the graph tell you.
11. Calculate the average speed in $\mathrm{km} / \mathrm{hr}$ of each airplane over 6 hours from the last entries in the data table. Use the formula speed = distance/time. Show work and circle your answer for each.

Plane 1:
Plane 2:

