Name _____ Date _____ Period _____

Speed and Velocity

Follow the path of the car shown below.

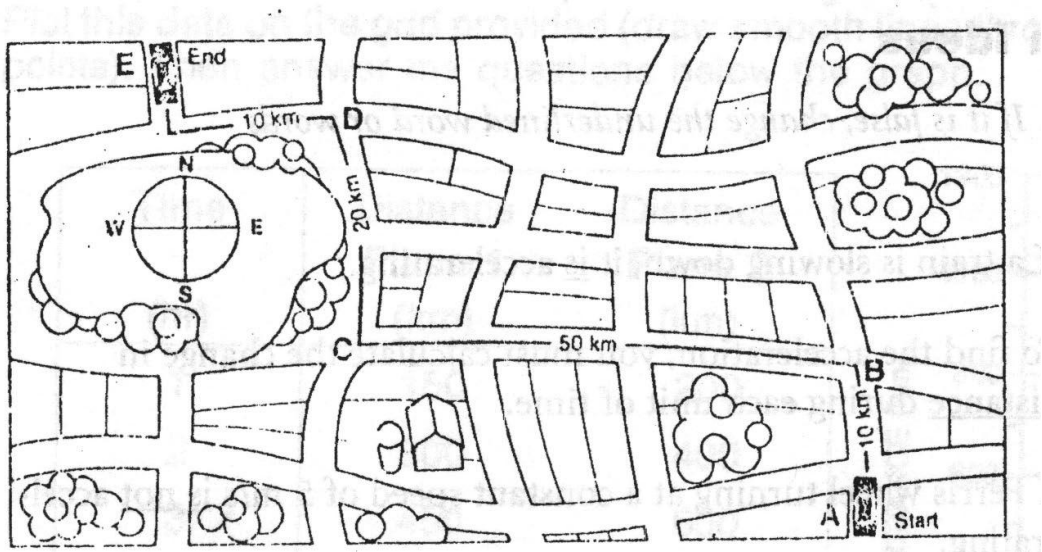


Figure 1.

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 m/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 m/s to a stop. What is the deceleration of the car for those 10 seconds? Show work.

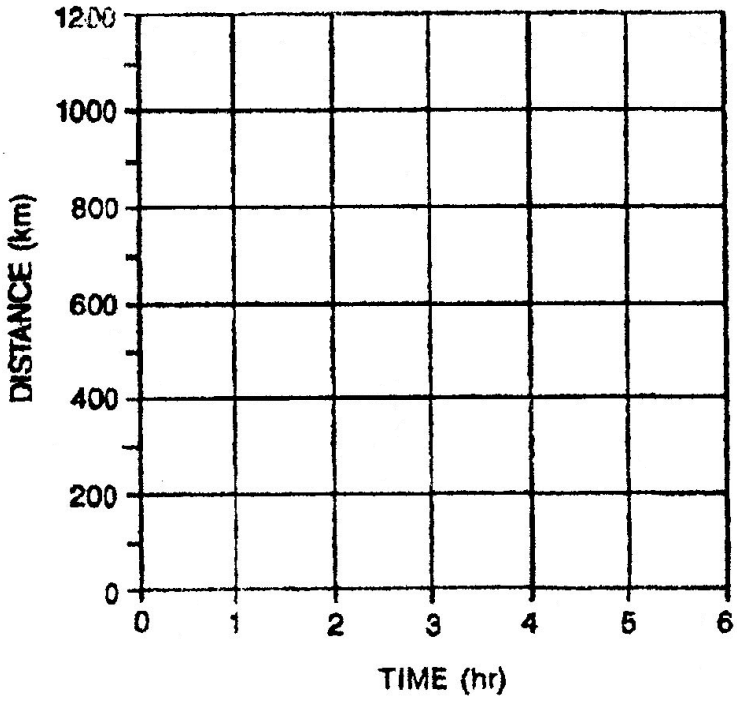
_____

_____

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 Plane 1 (km)	Distance Plane 2 (km)
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 km/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:**