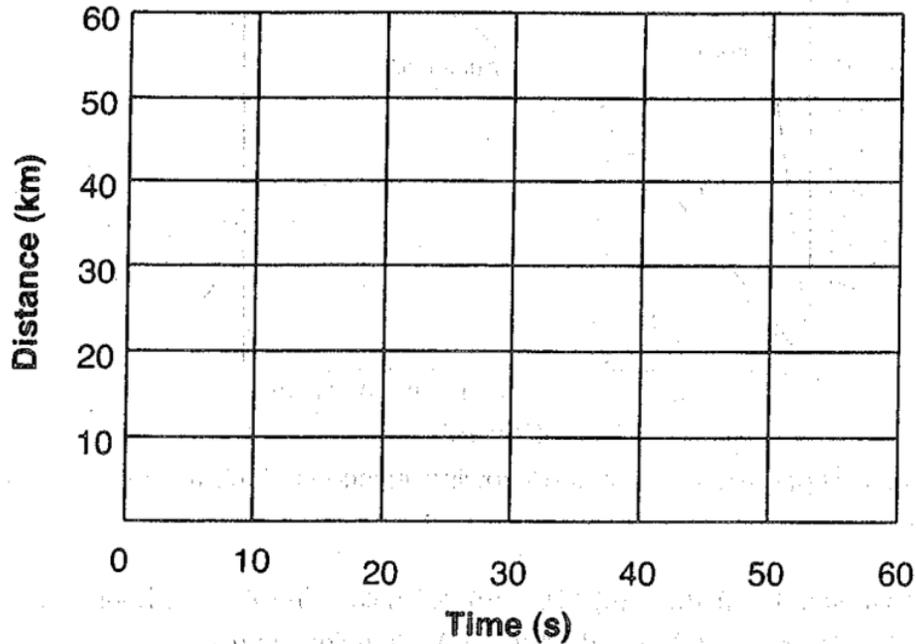


## Graphing **Constant** Speed

Plot the following data on the graph and answer the questions below.

<u>Distance (km)</u>	<u>Time (s)</u>
0	0
5	10
10	20
15	30
20	40
25	50
?	60

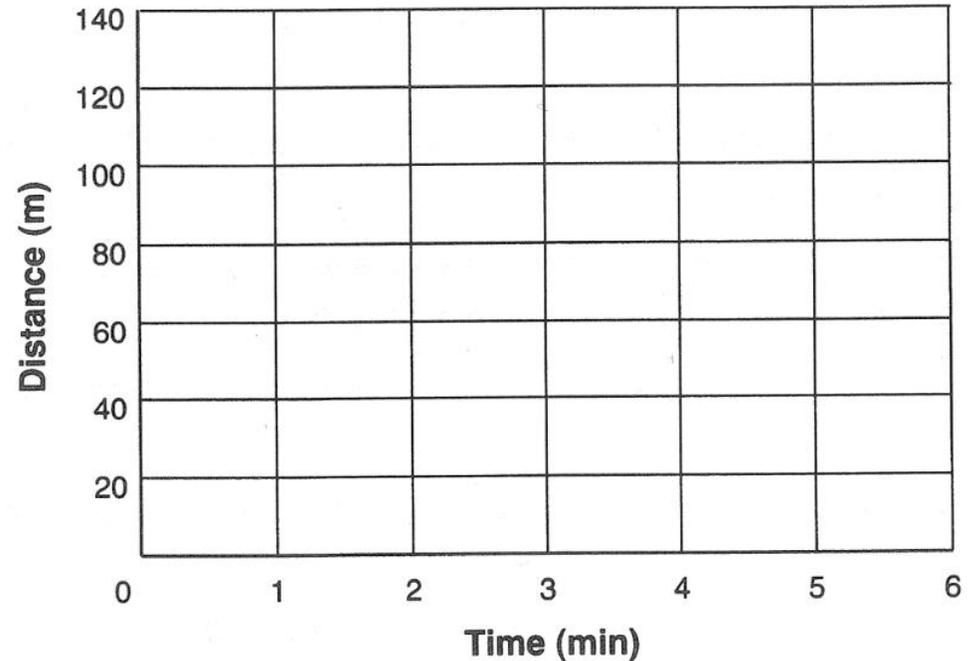


1. What is the speed at 10 seconds? What is the speed at 30 seconds?
3. What is the average speed?
4. Is this object traveling at a constant speed or is the speed changing? How do you know?
5. If the object continued at its current speed, how far would it go in 60 seconds?
6. How long would it take to travel 15 km?
7. Approximately how far has it gone at 35 seconds?

## Graphing **Changing** Speed

Plot the following data on the graph and answer the questions below.

<u>Time (min)</u>	<u>Distance (m)</u>
0	0
1	50
2	75
3	90
4	110
5	125
6	140

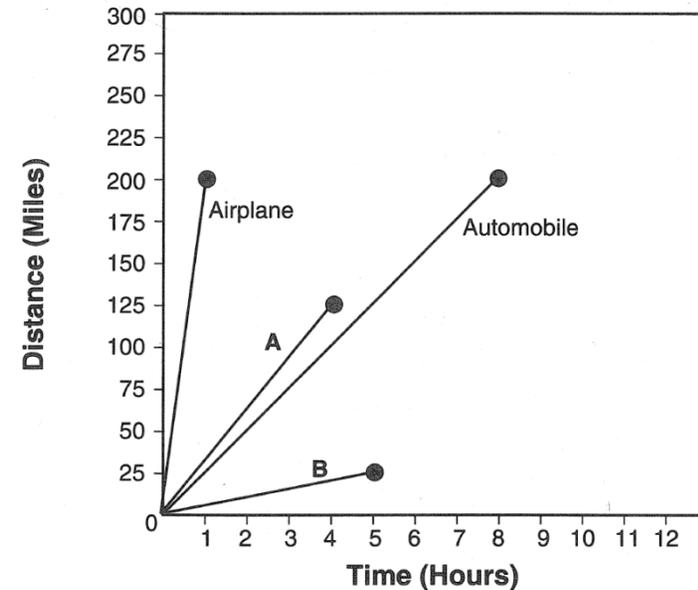


1. What is the average speed at 1 minute?
2. What is the average speed at 3 minutes?
3. What is the average speed at 5 minutes?
4. Is this object traveling at a constant speed or is the speed changing? How do you know?
5. Is the speed faster between 0 to 1 minute or between 4 to 5 minutes? How can you use the graph to tell?

$$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$

In science, data is often plotted on a graph. Data relating to the speed of an object can be plotted on a graph to show the relationship between the distance the object moved and the time it took. To graph the speed of an object, you use a **distance vs. time** graph. Distance is plotted on the Y-axis and time is plotted on the X-axis.

The distance vs. time graph below shows the distance one might travel by train, plane, and bicycle for different times. Refer to the graph below and answer the questions that follow.



- Based on where the graph ends, the airplane has traveled  
(a) 100 (b) 150 (c) 200 miles in \_\_\_\_ hours.
- Based on where the graph ends, the automobile has traveled  
(a) 100 (b) 150 (c) 200 miles in \_\_\_\_ hours.
- The airplane is averaging \_\_\_\_\_ miles per hour.
- The automobile is averaging \_\_\_\_\_ miles per hour.
- The line representing the distance traveled by a bicycle would most likely be  
(a) line A (b) line B

**Extend the line for the airplane to show where it will be after 1.5 hours. Use the airplane's average speed so far to help you.**

6. What is the total distance the airplane has traveled after 1.5 hours? \_\_\_\_\_

**Extend the line for the automobile to show where it will be after another 3 hours (total of 11 hours). Use the automobile's average speed so far to help you.**

7. What is the total distance the automobile has traveled after 11 hours? \_\_\_\_\_

