1. Progress Reports

2. Section 9.6 - Investigation: Balloon Car Contest (Page 360)
   All in - P4

3. Slope and Speed

4. Understanding Concepts: Page 365, #1-6] *HW*

5. Quiz - Average Velocity Problems

6. Chapter 9 - Review

   Understanding Concepts: Page 376 -> #1, 3
   Applying Inquiry Skills: Page 376 -> #7-10, 12 (a, b)
   Making Connections: Page 377 -> #14

   ] *HW for weekend*
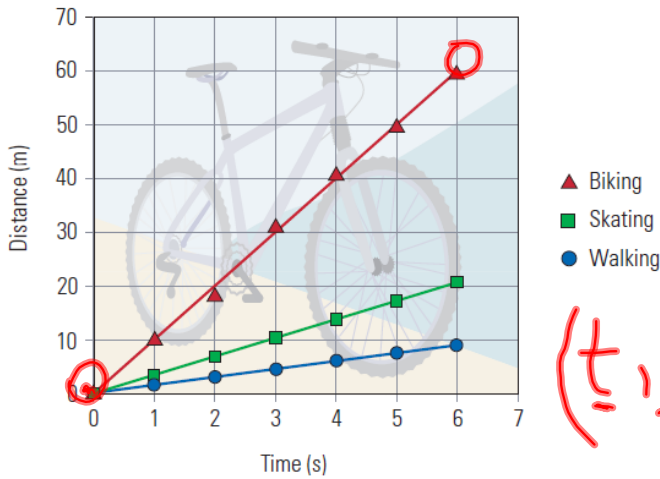
Test: Chapter 9 -> Wednesday

7. Chapter 10 - Distance, Speed and Acceleration (Page 378)

Slope and Speed

Walking, Skating, and Biking

Figure 2
Comparing walking, skating, and biking

The greater the slope on a distance-time graph, the greater the speed.

(t, d)

$$v = \frac{d_2 - d_1}{t_2 - t_1}$$

(0,0) and (6, 60)   (0,0) and (6, 21)   (0,0) and (6, 9)

$$(t_1, d_1), (t_2, d_2)$$

$$V = \frac{d_2 - d_1}{t_2 - t_1} \qquad V = \frac{d_2 - d_1}{t_2 - t_1} \qquad V = \frac{d_2 - d_1}{t_2 - t_1}$$

$$V = \frac{60 - 0}{6 - 0} \qquad V = \frac{21 - 0}{6 - 0} \qquad V = \frac{9 - 0}{6 - 0}$$

$$V = 10 \, m/s \qquad V = 3.5 \frac{m}{s} \qquad V = 1.5 \frac{m}{s}$$

2

Understanding Concepts

1. Explain, in your own words, why a graph is sometimes more useful than an equation.

2. What does the slope of a distance–time graph represent?

3. What interpretation can be made about a moving car if the line on a distance–time graph for the car has the following characteristics?

   (a) a high or steep slope

   (b) a low or less steep slope

   (c) a zero slope

   (d) a short line on the graph

   (e) a long line on the graph

4. Sketch a distance–time graph for a car cruising at 80 km/h.

5. A car leaves Borden-Carleton, PEI, on its way across the Confederation Bridge into New Brunswick. The distances and times from the toll booth in PEI are listed in **Table 4**. They include a short stretch of road beyond the end of the 12.9-km bridge.

Table 4	Car Crossing Confederation Bridge
Time (min)	**Distance (km)**
0.0	0.0
2.0	2.4
4.0	4.8
6.0	7.2
8.0	9.6
10.0	12.0
12.0	14.4

   (a) Plot a distance–time graph using the information in
   (V) **Table 4**. Draw a best-fit straight line.

   (b) Using your graph, find the distance travelled after 5.0 min.

   (c) Using your graph, find the time required to cross the bridge.

   (d) Was the speed constant during the car's trip across the Confederation Bridge? How do you know?

   (e) Calculate the slope of the graph. What does this slope represent?

   (f) What is the speed of the car in kilometres per hour?

6. In **Figure 5**, the motion of two bicycle riders, Tom and Jerry, is described on a distance–time graph.

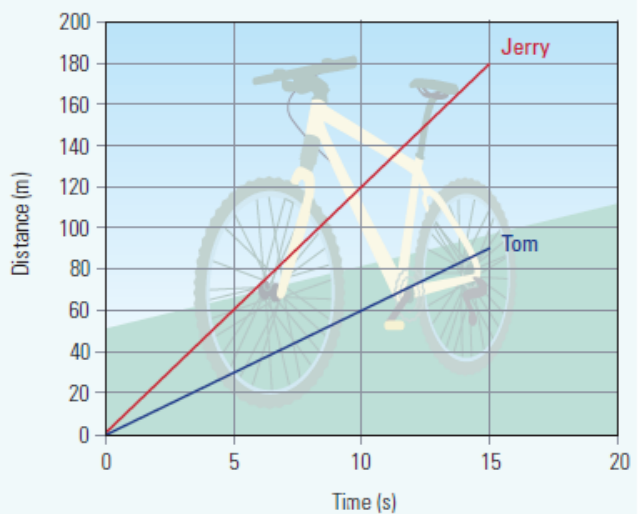**Motion of Two Bicycle Riders**

Figure 5
These two cyclists are travelling at different speeds.

   (a) From a qualitative observation of the lines on the graph, which rider has the greater speed?

   (b) Calculate the speed of each rider by determining the slope of each line. Does this quantitative result match your answer to (a)?

   (c) If one of the bicycle riders suddenly stopped, how would the graph of that rider change?

Understanding Concepts: Page 365, #1-6

Chapter 9 - Review

Understanding Concepts: Page 376 -> #1, 3
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