Graphing Questions

1. 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

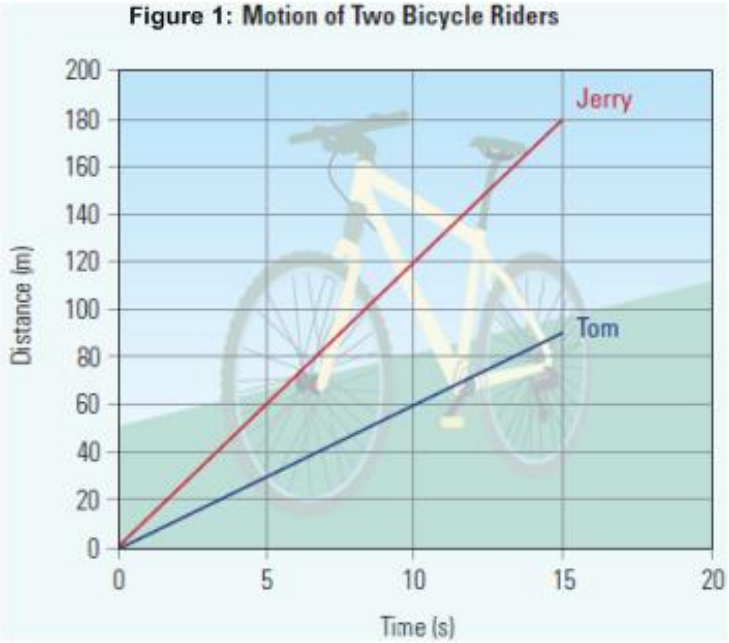
2. A car leaves Borden-Carleton, PEI, on its way across the Confederation Bridge into New Brunswick. The distances and times from the toll booth in PEI are recorded in Table 1. They include a short stretch of road beyond the end of the 12.9-km bridge.
a) Plot a distance–time graph. Draw a line of best fit.
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 was the speed of the car in km/h?

Table 1: Travel from toll booth on 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

3. In Figure 1, the motion of two bicycle riders, Tom and Jerry, is described on a distance–time graph.

Figure 1: Motion of Two Bicycle Riders



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?