**Conceptual Physics Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Rolling Balls down the Hall – Lab 1 Crossing Paths Date\_\_\_\_\_\_\_\_ Period \_\_\_**

Purpose: Record accurate data and make position versus time graphs of balls rolled off ramps. Use the graphs from two balls rolled in opposite directions to predict when and where the balls will collide or pass each other.

Procedure: **Explain in words and a diagram how to do the lab, step by step. Number each step, and start each step with a verb telling the reader what to do.**

**( 1. Hold the…. 2. Release the…. 3. Measure the…)**

Data: Include the data table inserted in your report, or attach data sheet with a neat table.

All columns and rows should be clearly labeled, with units. (Example: “Time 1 (sec)”)

Results: Attach graph, with properly labeled axes and best fit lines. Both sets of data (balls going each direction) should be on the same graph. One line should slope up and the other should slope down.

Conclusion Questions:

(Answer each question in one or two complete sentences, with proper grammar and punctuation.)

1. What type of graph did you make?
2. What was the slope of each line? Choose points on the best fit line, and show your work, including units.
3. On your graph, what are the units of slope, and what does slope represent?
4. Give the coordinates of the point on the graph where the lines cross. Include the units with the numbers. What do these coordinates represent?
5. What was the actual crossing time and position that we measured in the hallway after both balls were released at the same time? Were these values reasonably close to the crossing point from the graph?

Summary: Explain in words what you know about position vs. time graphs. Explain what the slope of the graph tells you. (Read the book!) Also, suggest ways to improve the accuracy and repeatability of this lab.