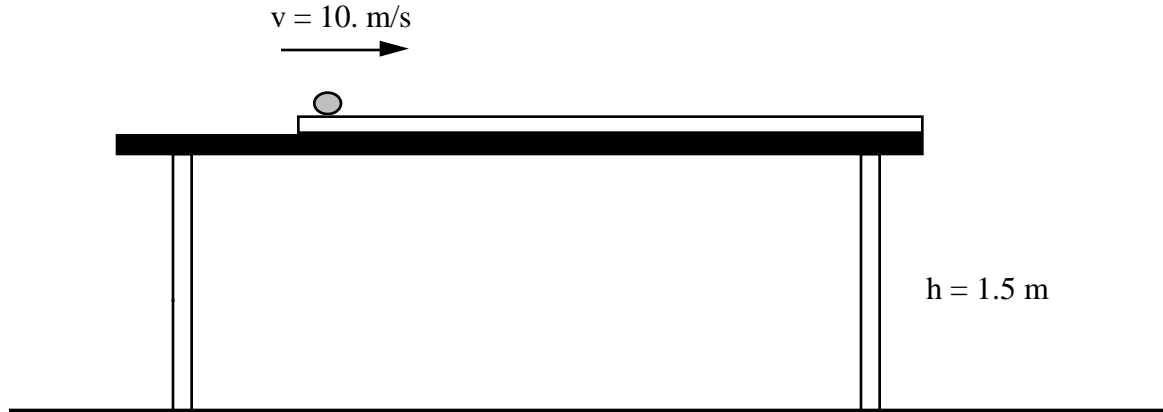


UNIT VI: Worksheet 2

1. Given the following situation of a marble in motion on a rail with negligible F_{drag} :



- a. Sketch a motion map showing the motion of the marble after it leaves the rail. You may show both horizontal and vertical velocity vectors on each dot.
- b. Sketch and label force diagrams for the marble both when it is on the rail and off the rail.
- c. Determine the horizontal range of the marble as it falls to the floor. Explain your method for solving this problem.

2. If the table in part one were 3.0 m high (so we have doubled the height), and sphere was traveling with a velocity of 10 m/s while on the table determine each of the following....
- a. Sketch a motion map showing the motion of the marble after it leaves the rail.

 - b. Sketch and label force diagrams for the marble both when it is on the rail and off the rail.

 - c. Determine the horizontal range of the marble as it falls to the floor. Explain your method for solving this problem.

 - d. What effect did doubling the height have on range of the marble? What other factors affect the range of the sphere?