Physics 2125 Experiment 9 Pre-Laboratory Assignment

Name_____ Instructor name _____

You must show and explain all work neat and organized to receive credit. Please show each step for calculations. YOU MUST TURN IN THIS SHEET to have your assignment graded.

1. A block, having mass M, slides down an inclined plane. The friction force between the block and the inclined plane is $\boldsymbol{f}$, the block's weight is $M\boldsymbol{g}$, and the normal force is $\boldsymbol{N}$. (a) Draw a free-body force diagram showing the forces acting on the block. (b) Write down all relevant Newton's equations for this situation. (8 pts)

2. A $10.50\ cm$ high elevation block is placed under one end of a $1.00\ m$ long track. Sketch the problem, and find the angle of elevation of the track. (5 pts)

3. You do not need the experiment results to do Part 26 on page 60 in the Laboratory Manual. Carry out the detailed algebra to derive equation (4). (7 pts)