

Name	
Date	
Lab session (Day & time)	
Lab partner	

M5 Conservation of Linear Momentum Lab Report

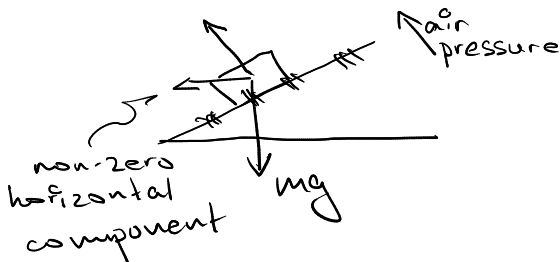
A. Answer the following questions BEFORE the lab session (6 pts each)

1. What is the purpose of using the air track in this experiment?

To minimize friction between the gliders and the table, thus reducing external forces whose absence is required by momentum conservation.

2. What is the purpose of leveling the air track during the experiment? Suppose the air track was tilted during the experiment, would linear momentum be conserved in the elastic collision? Why or why not?

It would not. If the track is not leveled, air pressure will not cancel completely with gravitational force, and there will be external force acting on the gliders.



3. A student suggests to do the collision experiment in a vertical direction inside a vacuum chamber, i.e. two falling objects with the upper one colliding with the lower one, do you think his idea will work? Why?

It won't. In the vertical direction, gravity becomes a significant external force, since it is now aligned with the direction of motion. Linear momentum will not be conserved.

