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This experiment showed acceleration on an inclined plane. To measure this, two ramps were created; one of them was one book tall and the other one was the height of two books stacked on each other. The height for the first ramp was 0.04m and the height for the second ramp was 0.08m; both ramps were 1.09m long. For both ramps, the acceleration was found as the slope of the graph between velocity^2 (m^2/s^2, y-axis) and distance (m, x-axis), as dividing them would result in m/s^2, which would be acceleration. For the first ramp that was one book tall, the experimental acceleration was found to be 0.283m/s^2. This was measured by using sensors to calculate the velocity at a certain point and releasing the cart different distances from the point of measurement. The cart started at different distances from the center, each time with a starting velocity of 0m/s. The experimental acceleration for the first ramp was calculated to be 0.283m/s^2, and for the second ramp it was 0.629m/s^2. To find the theoretical acceleration for both ramps, the equation a = g(sin(Θ)) was used, and sine was found by using the height of the ramp as the opposite side and the length of the ramp as the hypotenuse. Using gravity (g) as 9.8m/s^2, 0.04m/1.09m = 0.0367, and 0.0367*9.8m/s^2 = 0.360m/s^2 as the theoretical acceleration for the first ramp. Likewise, 0.08m/1.09m = 0.0734 and 0.0734*9.8m/s^2 = 0.719m/s^2 as the theoretical acceleration for the second ramp. The percent errors for acceleration are calculated to be 21.39% and 12.52% for the first and second ramp respectively.

A major source of error was friction between the wheels of the cart and the track. When it comes to calculating the theoretical acceleration, friction is not considered in the equation. Yet, the amount of friction was too much to neglect, and thus contributed to a decrease in the final velocity. In turn, this lower velocity value led to a lower acceleration value in calculations.