NAME:_____

AP PHYSICS LAB 6
CONSERVATION OF MOMENTUM

B6

PURPOSE: To use conservation of momentum to find the initial speed of a dart.

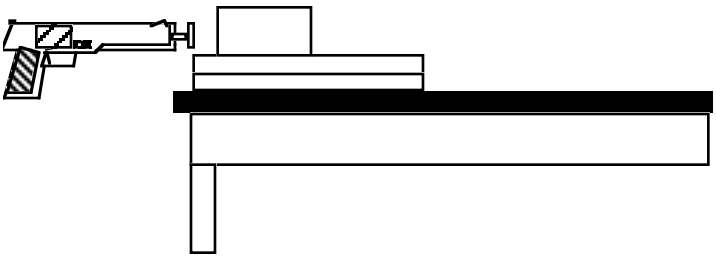
Measure the masses of the dart and the box (including the cotton). Place the box on the ramp and increase the angle until the box slides down with a constant speed. (It may be necessary to give the box a little push to overcome the static friction.) Find the coefficient if kinetic friction.

Set the ramp horizontally and place the box on the ramp. Shoot the dart into the box and measure how far the box moves. (The dart must remain embedded in the cotton.)

Use the work-energy theorem to find the speed of the box and dart right after the collision.

Use conservation of momentum to find the initial speed of the dart.

Find an independent method to verify the speed of the dart.



m_d = _____ m_b = _____

θ = _____ μ = _____

x = _____ v = _____

v_o (exp) = _____ v_o (theo) = _____

%diff = _____