PH202 **Postlab 1: Conservation of Energy** Name:_____

1. Here are some slight changes to your setup (show your calculation in your labbook):
    a. How far does your ball fly when you double the mass of the ball?

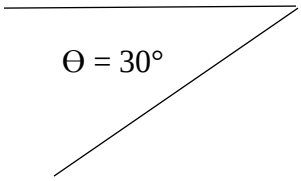
    b. How far does your ball fly when you perform the experiment on Mars?

    c. How far does your ball fly when you double the mass of the ball and perform the experiment on Mars?

    d. How far does your ball fly when you double the length of the string initially holding the ball?

    e. How far does your ball fly when you quadruple the length of the string initially holding the ball?

    f. How far does your ball fly when the starting angle of the string with respect to the horizontal was 30° as opposed to 0°.



2. Let's think about a bit more realistic setup. You do not need to solve this question to a number. Write about what would be different in your problem-solving *process* if the string had a mass that was not negligible. Include physical details that would allow you do solve a problem that has a specific mass of the string and mass of the sphere.

3. In an amusement park, there is a water slide that starts *h* meters above its base where people slide out 1.2m above the surface of a pool. You may assume there is essentially no friction between a person and the slide.
    a. What should be the maximum (safe) height *h* of the slide if the length of the pool is 3.0m?
    b. Does the mass of the person matter?
    c. What should be the maximum (safe) height *h* of the slide if the base of the slide is only 0.6m above the pool?