

**Analysis Problem 3**

Turn to Analysis Problem 3 in your binder.

- Read the scenario, including what you will be finding in parts (a), (b), and (c).
- Write your solution on this page and/or separate paper.
- Include the following, along with the necessary math, in your solution for each part:
 - Sketch and Translate
 - Write "Time Interval:" and a description of the time interval you are analyzing.
 - *Example: Time Interval:* Immediately after the bullet and block collide to the time when they are at point P
 - Write "System:" and a list of objects in your system for that part of the problem.
 - *Example: System:* Bullet, block
 - Write "Principle(s):" and the physics principle(s) you are using for that part of the problem. There are four possibilities: kinematics, Newton's Laws, energy, and momentum.
 - *Example: Principle(s):* Newton's Laws
- Check your answers. If they aren't right, go back and review your method. Come see me before class if you have questions.

Answers:

a) $\frac{v_0}{3}$

b) $\frac{1}{6}mv_0^2 - 3mgr$

c) $3\sqrt{5rg}$