Phys 3610, Fall 2009
Problem Set #1, Hint-o-licious Hints

1. *Taylor*, **1.19**

2. *Taylor*, **1.28** Now there are forces between particles 1 and 2, 2 and 3, and 1 and 3.

3. *Taylor*, **1.36** More review of 2110 kinematics problems. Got to remember the old stuff before we move on to the new stuff!

4. *Taylor*, **1.37** This is a review of free-body diagrams and basic acceleration problems from 2110. The net force on the puck must be directed down the slope. Find its acceleration and solve for the it takes to come back to $x = 0$.

5. *Taylor*, **1.45** Take

$$\frac{d(r^2)}{dt} = \frac{d(\mathbf{r} \cdot \mathbf{r})}{dt}$$

6. *Taylor*, **2.8** Look over the (easy) theorem in Problem 2.7 and just follow the formula for the $F(v)$ that is given. The answer for $v(t)$ is not an exponential, but a power law of sorts. At alrge t, v goes like $1/t^2$.

7. *Taylor*, **2.19** The first part has you re-derive the 2110 result, which you probably should (don't just look it up) because you don't teach it every year like I do. Express the result (that is, y as a function of x) in terms of v_{x0} and v_{y0}.