PHYS 211 Assignment for Monday, 10-21-2013 Due 10/23 Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Read Chapter 10, sections 1,2,3. If you prefer watch the following You Tube video. Do the problems.

<https://www.youtube.com/watch?v=MKhxRE2apWI&list=PL0B391509612D6BF8>

1. The angular position of a point on a rotating wheel is given by http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c10/math267.gif , where http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c10/math001.gif is in radians and *t* is in seconds. At http://edugen.wiley.com/edugen/courses/crs1650/art/math/halliday8019c10/math261.gif, what are (a) the point's angular position and (b) its angular velocity? (c) What is its angular velocity at t= 4.0 s? (d) Calculate its angular acceleration at t= 2.0s. (e) Is its angular acceleration constant?

2. The angular acceleration of a wheel is *α* = 6.0*t*4 - 4.0*t*2, with *α* in radians per second-squared and *t* in seconds. At time *t* = 0, the wheel has an angular velocity of +2.0 rad/s and an angular position of +1.0 rad. Write expressions for (a) the angular velocity (rad/s) and (b) the angular position (rad) as functions of time (s). (For help see the sample problem in text, section 10-2)