

Physics 261: Problem Set #7

These problems are due at the end of the day on Friday, November 13.

1. A cell or two from the Thursday session.
2. Morin 5.9 (p. 174)
3. Morin 5.15 and 5.16 (p. 175)
4. Morin 5.28 (p. 179)
5. Morin 5.63 (p. 187)
6. Morin 5.73 (p. 189)
7. Morin 5.80 (p. 191)
8. In problem set 5 we encountered a mass whirling at the end of rope of ever-shortening length $r(t) = r_0 - v_0 t$. If we start at $t = 0$ with angular velocity ω_0 and reel in to some r_1 , what is the new angular velocity ω_1 ? What is the change in kinetic energy? Show that the increase in kinetic energy equals the work done in pulling the string.
9. (BONUS) Morin 5.65 (p. 187-8) (don't overlook part (b)!)