

110a Homework 3, due Oct. 26.

1. Taylor 6.4.
2. Taylor 6.12.
3. Taylor 6.15.
4. Taylor 6.20
5. Taylor 6.24. Here just write out the result of the E-L equation as an equation for  $\phi'$ , you don't need to do the part of the problem which asks you to then integrate that and invert (unless you want to). Use  $ds^2 = dr^2 + r^2 d\phi^2$ .
6. Taylor 7.29.
7. Taylor 7.30.
8. Taylor 7.37.
9. Taylor 7.39, parts (a) and (b) only.
10. Taylor 7.40, parts (a) and (b) only.