

Physics 136c, Week 6: Fundamental Concepts of General Relativity

(Dated: May 9, 2012; due May 16, 2012)

The maximum number of points you can get for this assignment is **50**, although you could choose to do problems that worth more than 50 points.

This week we covered Chapter 24 of Blandford and Thorne (BT).

1. **Constant of Geodesic Motion in a Spacetime with Symmetry.** Exercise 24.4 of BT [20 Points]
2. **Action principle for geodesic motion.** Exercise 24.5 of BT [15 Points]
3. **Curvature of the Surface of a Sphere.** Exercise 24.11 of BT [15 Points]
4. **Bianchi Identities.** Exercise 24.14 of BT [15 Points]
5. **Gauge Transformations in Linearized Theory.** Exercise 24.16 of BT [15 Points]