

## Physics 136b, Week 9: Waves and Convection, Supersonic Flow

(Dated: Feb 29, 2012, Due: Mar 7, 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 discussed water waves, covering Sec. 16.6 and 17.1 – 17.5 of Blandford and Thorne (BT)

1. **Aerodynamic Sound Generation.** Exercise 16.13 of BT (15 Points)
2. **Radiation Reaction Without the Slow Motion Approximation.** Exercise 16.15 of BT (15 Points)
3. **Bubbles.** Exercise 16.22 of BT (10 Points)
4. **Explicit Solution for Flow Between Chambers.** Exercise 17.2 of BT (15 Points)
5. **Fluid Paths in Free Expansion.** Exercise 17.5 of BT (15 Points)
6. **Riemann Invariants for Shallow-Water Flow.** Exercise 17.6 of BT (15 Points)