

Physics I
Homework Six
Due Friday 28 October, 2011

Chapter C11:

1. C11B.4–8
2. C11S.5
3. C11R.1

Chapter C12:

1. A refrigerator might draw 350W of power when it is on. Assume that it is on for a quarter of the time.
 - (a) How much energy, in units of kWh, would this refrigerator use in one month?
 - (b) How much would this cost in Maine?
2. C12B.5
3. C12S.3
4. In a typical day a typical person typically eats around 2500 calories of food. These are dietary calories. Confusingly, 1 dietary calorie equals 1000 “real” calories. One “real” calorie is equal to 4.18 Joules.
 - (a) How many Joules does a typical person consume in a day?
 - (b) What power is this? Express your answer in kW.
 - (c) Most of the food energy you consume ultimately gets converted to heat. Thus, we can view people as heaters—they convert chemical food energy into thermal energy. How many people would you need to have in a room to have a heating power roughly equivalent to one 1500 W space heater?

Chapter C13:

1. C13B.2
2. C13B.5
3. C13B.7
4. C13B.8