Ch. 1 Homework (Refer back to Lecture 1 for help with unit conversion)

1. What are two major problems created by our dependence on fossil fuels?

2. What are three possible ways to provide energy to society after all the fossil fuels on Earth have been consumed?

3. You lift a ten-pound mass ten feet off the ground. How much work have you performed in ft•lbs? Joules?

4. A bicyclist expends 80W of power over the course of 5 minutes. How many calories does he/she burn? How many food calories?

5. How many times more energy does the average U.S. citizen use than a citizen of Italy?

6. The average person in the U.S. eats 3000 food calories per day. Calculate the average power of this food intake, in watts (remember: W = 1 J/s)

7. How does a coal power plant produce electricity?