

Homework Assignment #9, Fermi Problems

---

For the problems below you are free to use any facts that you have in your head, but do not use information from google or any other reference material.

1. Estimated the annual expenditure in dollars in the United States on

- A. the Federal Government.
- B. the State of Illinois.
- C. the University of Illinois at Urbana-Champaign.
- D. all entertainment.
- E. all restaurants.

(based on a problem by Eugene Chiang).

2. Estimate the metabolic rate (energy consumed per unit time, in watts) by an average adult human.

3. Estimate the number of electrons in an M&M.

4. Ask, and answer, a Fermi problem that is physically related to your journal club presentation. Points will be awarded for elegance, simplicity, and accuracy.