

Name _____

MAE 110A Winter 2017 - QUIZ #3

Due: Friday, March 17 (beginning of class)

1. Estimate the amount of CO₂ produced, in lbm, for every gallon of gasoline burned by an automobile. Estimate the amount of CO₂ produced in a year by your (or friend/family member's) vehicle. Consider gasoline to be all octane. (do calculations on separate sheet of paper and attach)

2. On Friday, we will have a guest speaker, John Dilliot (Manager of Campus Energy and Utilities). As background for his talk, check out: <http://sustain.ucsd.edu/focus/energy.html>. Answer the following (short answer) questions:
 - a. UCSD operates a cogeneration plant. What is *cogeneration* (read text section 8.5.2)? What does the UCSD cogeneration plant provide for the campus?

 - b. The UCSD cogeneration plant uses natural gas as its energy source? What are the advantages of this fuel over other fossil fuels?

 - c. What are some of the alternative/renewable energy sources and technologies that UCSD utilizes? How much do they contribute to the total power generated on campus?