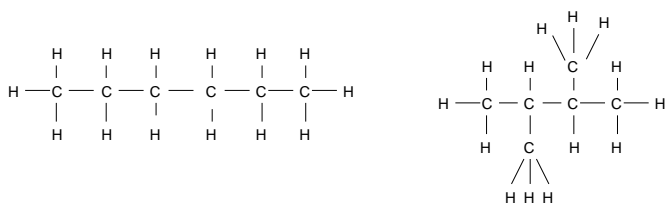


Chemistry 100
Homework Problem Set # 9
Due Friday, November 21

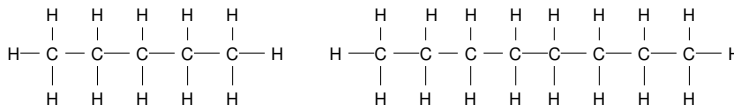
1. What is the *enhanced* greenhouse effect?
2. Describe how CO₂ concentrations have changed over the last 40 years and over the last 160,000 years (see handout and consider current levels).
3. What accounts for the yearly, cyclic variation of CO₂ levels evident in from the data from the Mauna Loa observatory?
4. Global Warming Potential (GWP) compares the ability of a gas to contribute to overall warming to the warming potential of CO₂. CO₂ is assigned a GWP value of 1.0. Look up the GWP for two of the other greenhouse gases, including at least one CFC or CFC replacement. Comment on the results and cite the source of your data.
5. What is ice-albedo feedback and how does it factor into climate prediction? What influence will a warming world have on this system?

6. Describe the process of fractional distillation used to separate petroleum into different components.

7. Which one of the following molecules is likely to have a higher octane number and why?



8. Which one of the following molecules is likely to have a higher boiling point and why?



9. What is cracking and why is it used in petroleum refining?