General Chemistry II
Problem Set 8
Due Tuesday, November 16, 2004

This assignment will not be graded before the test covering this material. However, the answer key will be posted on the course web page the night of November 16.

1. (12 points) Atkins and Jones Exercise 7.24. Explain each of your four comparisons qualitatively.

2. (6 points) (based on Atkins and Jones Exercise 7.26). Consider the standard molar entropies (S_m°) of the following four substances:

Substance	S_m° (J mol^{-1} K^{-1})
$CO_2(g)$	213.8
Ar(g)	154.8
$H_2O(l)$	70.0
He(g)	126.2

   Explain qualitatively the trends in standard molar entropy.

3. (16 points) Atkins and Jones Exercise 7.34

4. (6 points) Atkins and Jones Exercise 7.42

5. (22 points) Atkins and Jones Exercise 7.48. Hint: In part (b), assume that $H_2SO_4(aq)$ exists in solution as $H^+(aq)$ and $HSO_4^-(aq)$.

6. (4 points) Atkins and Jones Exercise 7.54

7. (21 points) Atkins and Jones Exercise 7.60