

Tue., August 29, 2017

Due **Tuesday, September 12 in class.**Chapter 2 problems: 1*, 3e**, 9***, 10b-e****, 15a,c, 16, 18, 19, 21[#], 24, 28, 34c^{##}

* Assume the hiker's clothing absorbed 1.25 L of water in the rainstorm, and weighs **55 kg** and the water evaporates at **10° C** instead of what the text uses. Suppose the hiker had eaten only **glucose** that day instead of sucrose for part (c).

** use **37° C** instead of 25° and expansion is from 3.0 L to 30.0 L

*** you will need to know that the molar C_v for an ideal diatomic gas = 2.5 R where R is the gas constant.

**** **10 d.** you will need to remember what boiling means: **liquid water evaporating into bubbles of water vapor because the vapor pressure of the water = the applied pressure on the surface of the liquid.** (water will boil at exactly 298 K if in a partial vacuum such that the air pressure = 2536 Pa (from Table 2.2) (=0.02536 bar =0.02569 atm.)

**** **10 e.** note: "bomb" is short for bomb calorimeter, a steel container in which small amounts of explosive mixtures may be detonated safely to see how much heat is given off.

Do this for **sucrose** instead of glucose. (Table A.7)

Use **formamide** instead of formaldehyde.

Comments and Advice

1. Note: The numbering of the problems does not necessarily follow the order of text material, e.g., information needed for problem 1 will come from Lectures 4 and 7. Part of the learning process is recognizing the information required to solve a particular problem.

2. While this may seem overwhelming at first, it is not as bad as it seems. It is much like learning a new game; considerable attention and time is required until the rules are familiar. Students typically find the following chapters to be **much easier after they attain a grasp of the style of the problems in Chapter 2.**

3. Most importantly: Start on this assignment **early!** It takes a while to get used to the style, and to find your way around the book. If you wait until the last two days, you will likely find yourself in panic mode.

4. Office hours: Typically by appointment (by email is ok) or drop in. Definite hours will be posted for the days before an exam or assignment due date. Email questions are also encouraged.