

MEMORANDUM

Chemistry
Department

To: Ben, Kevin, Andy, Tyler, and Matthew
From: John I. Gelder
Date: December 1, 2001
Re: Grading and returning PS #13

The answers to PS #13 are attached. After reviewing the problem sets I have decided we should grade problems 13.3, 13.4, and 13.7 for 3 points. The maximum possible on the problem set is twelve points. The remaining three points are awarded on an all or nothing basis for completion of the remaining problems.

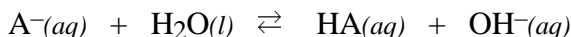
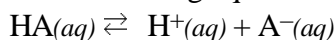
If you have any questions about the grading procedure described below, please see me. Please do not assign any fractional points. Use a holistic approach, if the student's answer is not quite correct you must make the decision if it is at least half right in which case give the student the point. However, on the next occasion (in the same grading session) that you have to stop and ask yourself whether the student should receive the benefit of the doubt, do not give them the point. Reverse this procedure if for the first time you decide not to give them the benefit of the doubt, the next occasion give them the point.

Please return the graded problem sets to your students next week. Be sure to record the scores for each student.

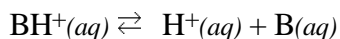
Copies of the answers and the grading memo are on the WEB.

Grading the Review Problem Set

PS13.1 **3 points** Grade part a, c and e. For the one point the majority of the work should be given. The ICE table should be set-up along with the chemical reaction. Since these are common ion problems students can use either the equation for the acid or conjugate base dissociation equation. For example for a weak acid HA either of the following equations can be used to calculate the pH;



For example for a weak base B either of the following equations can be used to calculate the pH;



PS13.2 **3 points.** Grade parts b, c and d. Each for 1 point. In part b the net ionic equation must be written, along with the K value for the point. In parts c and d, the net ionic equation should be written along with the K.

PS13.6 **3 points.** Grade parts a, b, and c. Each for 1 point. Both the neutralization reaction and the dissociation reaction to calculate the pH must be shown for the point. While the answers do not have to have as much information as the KEY, The ICE tables for both reactions must be shown, along with the equilibrium expression and the substituted values showing the determination of the pH.

3 points For attempting the remaining 6 problems. Remember each problem must have an answer, an attempt. If the student writes nonsense deduct the 3 points. Since several plots are required in this problem set, deduct the three points if the plots are not included.