

Homework 6  
due October 9, 2008

If you find yourself without enough information, make and justify a reasonable approximation. Please answer all parts of a question! (This is good practice for an exam setting.)

1. Felder and Rousseau, problem 4.42
2. Felder and Rousseau, problem 5.27
3. Felder and Rousseau, problem 5.32a
4. Felder and Rousseau, problem 5.32b
5. (This problem will not be graded. A full solution will be made available on-line.)  
Solve the quiz problem for all of the unknown molar flow rates and mole fractions, using the information and specifications listed on the quiz solution page. Be sure to do a degree of freedom analysis to confirm that you have the proper number of equations and unknowns.  
What is the percentage yield of the marketable compound B as an almost-pure product? (In other words, what is the ratio between the total flow rate of stream 6 and the amount of B flowing in as part of stream 1?) The total flow rate of this product could be increased by increasing the concentration of A (i.e. decreasing the purity of the B). What would be some advantages and disadvantages of this scheme?