Math 145 Test 3 Chapters 5 forward Study Sheet (rev 12/2006)

In class portion
Your Third test will consist of (3) questions from homework A10, A11, A12, A13 or A 14, and (3) essay questions from classroom lecture or activities questions from the following list. You will not know in advance which homework problems will appear on the test. Four of these essay questions will appear on the test and you will be able to choose your favorite three. You may bring one 3x5 card with notes.

Possible "essay" questions:

1. Given an initial population in the Game of Life, determine the next three generations. Explain what this Game is simulating.
2. Given an initial condition, create the next two stages in development of a Koch Curve.
3. Illustrate and explain how to use a collage method to create a Sierpinski Triangle.
4. Explain the thinking behind the Monkey Typing problem.
5. Explain Euler's characteristic and apply it to prove the impossibility of the three house, three utility problem.
6. Define iterative process. Give a minimum of examples from our studies. At least one example must be numerical and at least one example must be geometric. For each, explain how to get a stage from the preceding stage.
7. Define sample space, equally likely events, probability, relative frequency, the law of large numbers and expected value. Discuss these relative to a defined game where two die are rolled and in order to win a person must roll a 7. What does probability say about the chance of rolling a 7 in the long run? What does this mean for the person playing? If a person rolls the die 36 times and only gets a 7 twice, does that mean that the die are not fair? If the person plays $1 for each roll and receives $5 for a win, what is the expected value of the game? Would you recommend the person play this game?