MAT 375-1
HOMEWORK ASG. #8
HAND IN THURSDAY, NOVEMBER 3

For each enumeration problem, do at least these three things:

- give a brief explanation in words of your counting strategy,
- show the structure of the calculation before simplification, and
- calculate the final number (or probability).

1. How many 8-digit integers are there with:
    a) exactly three 2's, exactly three 5's and exactly two 8's?
    b) exactly three 2's and exactly three 5's? (Be careful that it doesn't start with a 0, since then it wouldn't be an 8-digit integer.)
2. A second grade teacher asks each of her 20 students to write their birth month (but not their name) on a piece of paper and hand it in. How many possibilities are there for the results?
3. How many different arrangements are there of the letters in the word TALLAHASSEE
    a) with no additional restriction?
    b) with all the A's together?
    c) with no consecutive A's?
4. How many possibilities are there to have in your pocket 15 coins, consisting only of
    a) pennies, nickels and/or dimes?
    b) at least 4 pennies, at least 5 nickels, and (possibly) some dimes?
5. In how many possible sequences can you telephone each of three different friends four different times?
6. Exercise Set 5.4 #2.
7. Exercise Set 5.4 #12.
8. Exercise Set 5.4 #18.
9. Exercise Set 5.4 #32b.
10. Exercise Set 5.4 #34b.
11. Exercise Set 5.4 #64.
12. In how many ways can 5 (identical) Democrats, 4 Republicans and 3 Independents vote for Candidate A or Candidate B in an election? (All 12 people vote for one candidate or the other.)