Suggested STAT 312 Problems for Exam 2

1) According to a national survey conducted for CACI Marketing systems, 25% of American adults smoke cigarettes. Of these 13% attempted (but failed to quit smoking) during the past year. Define the following events:

A: {An American adult smokes}
B: {A smoker attempted to quit smoking last year}

Find P(A), P(B|A), P(A^C), and P(A∩B). State each of these probabilities in the words of the problem.

2) Pg. 199 #4.7 and 4.9.

3) Consider the partial probability distribution

x	0	1	2	3
p(x)	0.2		0.3	0.2

a) If the only possible values of x are 0, 1, 2, and 3, find P(X=1)
b) Using your answer to a, find E(X) and Var(X)
c) Using your answer to a, find P(X>1).

4) A group of 15 students needs to be divided into three teams of five students each: the varsity team, the junior varsity team, and the practice squad. How many possible line-ups are possible?

5) Pg. 223 #5.49

6) Pg. 225 #5.69a
b) Find the mean and variance for this binomial random variable
c) Repeat this problem using the normal approximation

7) Pg. 244 # 6.19b

8) Pg. 225 #6.43d

9) Pg. 280 #7.7a-b

10) Pg. 403 #9.89

11) Pg. 397 #9.63 and verify that n is large enough to trust the result

12) How large of a sample size is needed to make a 95% confidence interval for proportions that is ±.015 (1.5%)