Ex 1: Suppose you are going to draw 10 cards from a standard poker deck (with replacement).

a) What is the probability that exactly 7 of the cards are number cards?

b) What is the probability that you draw between 6 and 8 number cards inclusive?

c) What is the probability that you draw at least 8 number cards?

d) What is the probability that you draw at most 7 number cards?

e) Find the expected value, standard deviation and variance of the random variable in this problem.

f) Explain what each of the probabilities you calculated in parts (a)-(d) mean.

g) Explain the meaning of the expected value you calculated in part (e)

Ex 2 (Sec. 6.2 Ex 3 & 6 from the book): According to CTIA, 25% of all U.S. households are wireless-only households (no landline). In a random sample of 20 households, what is the probability that

a) Exactly 5 are wireless-only?
b) Fewer than 3 are wireless-only?
c) At least 3 are wireless-only?
d) The number of households that are wireless-only is between 5 and 7, inclusive?
e) Determine the mean, variance and standard deviation of the total number of wireless-only households (out of 20).
f) Explain what each of the probabilities you calculated in parts (a)-(d) mean.
g) Explain the meaning of the expected value you calculated in part (e)