3502 Tutorial 3

1. Compute the following binomial directly from the binomial formula:
   a. $b(3; 8, .35)$ **b.** $b(5; 8, .6)$, **c.** $P(3 \leq X \leq 5)$ when $X \sim Bin(7, .6)$.

2. A company that produces fine crystal knows from experience that 10% of its goblets have cosmetic flaws and must be classified "seconds".
   a. Among six randomly selected goblets, how likely is it that only one is a second?
   b. Among six randomly selected goblets, what is the probability that at least two are seconds?
   c. Among six randomly selected goblets, what is the average number of the goblets that are second?

3. An electronics store has received a shipment of 20 table radios that have connections for iPod or iPhone. 12 of these have two slots (so they can accommodate both devices), and the other 8 have single slot. Suppose that 6 of the 20 radios are randomly selected to be stored under a shelf where the radios are displayed, and the remaining ones are placed in a storeroom. Let X=number, among the radios stored under display shelf, that have two slots.
   a. What kind of distribution does X have? (name of distribution and its parameters).
   b. Compute $P(X = 2)$, $P(X \leq 2)$, $P(X \geq 2)$.

4. An interviewer is conducting a phone survey. Each call has probability .4 to be answered. What is the probability that the interviewer has to try (a) 3 calls before getting the first call answered? (b) at most 3 calls before getting the first call answered?