MAT 1372-6556 Statistics with Probability Quiz 9 Fall 2012

1. A batch of 40 chips includes 6 that are defective. Two of the chips are randomly tested. Let *X* denote the number that are tested and defective. Find the probability distribution of *X*. For the probabilities, write the answer as a product and/or quotient of binomial coefficients (combin).
2. When Jean goes to the foul line for two shots, she makes her first shot with probability 0.5. If she makes the first shot, then she makes the second shot with probability 0.6; if she misses the first shot, then she makes the second one with probability 0.4. Let *X* denote the number of shots she makes when she goes to the foul line for two shots.
3. Find the probability distribution of X. You must make a probability tree to get credit.
4. Find the expectation (I.e., on average how many shots does Jean make?).
5. Suppose that the random variable *X* takes on one of the values 1, 2, 3, or 4.

If *P*{*X* = 1} = 0.1, *P*{*X* = 2} = 0.3 and *P*{*X* = 3} = 0.4, find

1. Find *P*{*X* = 4}.
2. Write the probability distribution of X as a table.
3. Find the expectation.