Probability Distributions

Distribution	*Prob. Space*	*Random Variable*	*Prob. Mass function*
Uniform			
Bernoulli			
Binomial			
Geometric			
Hypergeometric			
Poisson			

1. Practice Problems

(1) (Ross Ch.4,6f) A communication system consists of n components each of which will, independently function with probability p. The total system is able to operate effectively if at least one half of its components function.
   (a) If $n = 3, 5$, what is the probability that the system will operate effectively?
   (b) For what value of p will the system be more effective for $n = 5$ than $n = 3$?

(2) (Ross Ch.4,8i) Julie buys lightbulbs for her hardware store in packages of 10. It is her policy to check 3 of the bulbs in a package; if any are defective, she will send back the package.
   (a) If 4 of the bulbs in a package are checked, what is the probability that Julie sends it back?
   (b) Out of all packages, 30% have 4 defective bulbs while 70% have 1 defective bulb. What is the probability that Julie sends back a randomly selected package?