Choose a number out of 4

1. Have N people pick a number from 1 to R, inclusive. What is the probability, p, of K or more choices of any single number? Your function should take inputs R, N, K and a 4th variable, nSims (number of simulations to run) and return the probability, p.

   ```
   p = MyFunction(R, N, K, nSims);
   ```

2. This example is from actual class data taken on 16 August 2012. The instructions were to pick at random a number from 1 to 4. Here is the actual data from 75 respondents:

   - 7 people chose number 1 (9 %)
   - 24 people chose number 2 (32 %)
   - 34 people chose number 3 (45 %)
   - 10 people chose number 4 (13 %)

   Is this distribution random?

   Hint: The hardest part of this exercise is defining what class of outcomes you would consider "weird." You need to have a precise definition so that you can count how often they occur when you generate a bunch of simulations under the null hypothesis (H0). By the way, what is your null hypothesis? Start out by discussing - in words - in small groups the definition of H0 and the precise definition of the type of event you would consider to violate H0. *Resist the temptation to start coding right away.*

3. Bonus exercise: For MATLAB show-offs, this can be done in a single line of code. What are the advantages and disadvantages of doing it this way?