Probability Review

Suppose you have Q processors and J jobs. If you assign each job to a processor uniformly at random, what is the expected number of jobs processor 1 will get?

1. What is the sample space?
2. What is the random variable of interest?
3. How can you divide up the random variable into indicator random variables?
4. Calculate the expectation of your random variable using indicator random variables.

QuickSort

- Consider z_i, z_j $(i < j)$ in the following scenarios:
  - One of them is chosen as pivot
  - z_k is chosen as pivot, where
    - $k > i, j$
    - $k < i, j$
    - $i < k < j$
- When are z_i, z_j compared, separated, kept together?
- What is probability of z_i, z_j being compared?