These must be completed and shown to your lab TA either by the end of this lab, or by the start of your next lab.

1. Download `qsortCount.cpp` from the course web page under Lab 7. The remaining questions are about how to *instrument* Quicksort in order to evaluate its average case performance empirically.

2. Add the global integer variable `comps` to the program and add one line to `quicksort` to count the number of comparisons between array elements that `quicksort` performs.

   Run your program using array size 1000 for 100 repetitions. What is the average number of comparisons?

   Note: Write code in `main` to do this experiment.

3. You don't really need to sort the array in order to calculate `comps` for an input array of size n.

   Write a new recursive function `qc` that takes a single parameter `n` and returns the number of comparisons `quicksort` would perform in sorting an array of size `n`, but doesn't sort anything.