CS9 Coding Drill: February 11, 2015

Name: _____

Here's some more coding practice to help you keep your skills sharp!

Problem One: Array Rotation

Your job is to write a function

```
void rotateArray(int* array, size_t n, size_t amount)
```

that accepts as input an array and a "rotation amount." You should then "rotate" the array by cyclically shifting all of the elements in the array to the left by a number of steps given by the rotation amount. As an example, suppose we have this array:

103	106	107	108	109	110	140	161

Rotating it to the left by three steps would yield this array:

108	109	110	140	161	103	106	107

(The input array may or may not be sorted.)

Then, analyze the big-O time and space complexity of your code.

Problem Two: Searching a Rotated Array

Now, go and write a method

```
bool searchRotatedArray(int* array, size_t n, int key)
```

that accepts as input a "rotated sorted array" and a key to search for, then returns whether the key is present in the array. By a "rotated sorted array," we mean an array that was in sorted order and then rotated by some unknown amount. For example, all of the following are rotated sorted arrays:

103	106	107	108	109	110	140	161

108	109	110	140	161	103	106	107

110	140	161	103	106	107	108	109

Then, analyze the big-O time and space complexity of your solutions.