Homework 3

All the following assignments are selected from Gaddis edition 7. The purpose is that you practice implementing sort and search algorithms in C++.

1. Modified check point 9.9 [1 point]
2. Lottery winner [1 point]
3. The **new version** of modified Lottery winner, which uses the numbers on the next page:
   Write a selection sort function [1 point]. Use it to sort the numbers [1 points], and then search the sorted array using binary search.

Run your code, submit the output and code too. Submit code in a separate, compliable file, do NOT include the code in your pdf or tex file. Submit only 1 compressed (.gz.tar or .zip NOT .rar) file for this HW.

9.9 Which sort usually requires fewer data values to be swapped, bubble sort or selection sort?

2. Lottery Winners

A lottery ticket buyer purchases ten tickets a week, always playing the same ten five-digit "lucky" combinations. Write a program that initializes an array with these numbers and then lets the player enter this week's winning five-digit number. The program should perform a linear search through the list of the player's numbers and report whether or not one of the tickets is a winner this week. Here are the numbers:

85647	26791	26792	33445	55555
62483	93121	79422	13579	77777

Orders are different from the book.

3. Lottery Winners Modification

Modify the program you wrote for Programming Challenge 2 (Lottery Winners) so it performs a binary search instead of a linear search.

Run your code and test it with 2 input numbers: 79422 and 32490.