Programming Assignment 8
(Assigned: October 31, 2019; Due: November 7, 2019)

*The goal of this simple assignment is to get a better understanding of: (a) the difference between a variable's **address** and its **value**, and (b) **pointer variables**, introduced in Section 9.1 of the textbook.*

Write a C++ program, and declare in it three integer variables **x**, **y**, and **z**. Also, declare three integer-pointer variables **p**, **q**, and **r**. Make your program perform the following tasks:

1. Display the prompt "`Enter 2 integers: `", and read input values into **x** and **y**.
2. Set **p** and **q** to the addresses of **x** and **y**, respectively.
3. Print the following, with appropriate labels:
    a) The address of **x**, and the value of **x**.
    b) The address of **y**, and the value of **y**.
    c) The address of **p**, the value of **p**, and the value of ***p**.
    d) The address of **q**, the value of **q**, and the value of ***q**.
4. Display the message "`Swapping integers\n`".
5. Execute the swap code: `z = x; x = y; y = z;`
6. Print the following, with appropriate labels:
    a) The address of **x**, and the value of **x**.
    b) The address of **y**, and the value of **y**.
    c) The address of **p**, the value of **p**, and the value of ***p**.
    d) The address of **q**, the value of **q**, and the value of ***q**.
7. Display the message "`Swapping pointers\n`".
8. Execute the swap code: `r = p; p = q; q = r;`
9. Print the following, with appropriate labels:
    a) The address of **x**, and the value of **x**.
    b) The address of **y**, and the value of **y**.
    c) The address of **p**, the value of **p**, and the value of ***p**.
    d) The address of **q**, the value of **q**, and the value of ***q**.

Notes:

- The name of your source file **_must_** be: `pa8.cpp`

Grading Rubric:

Your program submission will be graded according to the following rubric:

The name of the submitted program source file is **pa8.cpp** (*not* **pa8.c** or **Pa8.cpp** or **PA8.cpp** etc.)	1
The first 2 lines (student's name, student ID) of the required comments at the top of the program are included	1
A good indentation scheme is used throughout the program	1
The program compiles and links with no errors or warnings	2
The program works correctly for the inputs 10 and 24	5
The program works correctly for the inputs 0 and -7	5
TOTAL	**15**