

**ENGINEERING H192
DAILY ASSIGNMENT B12**

Pointers: An Introduction

The purpose of this assignment is to gain some experience working with pointers in a fairly simple program. Pointers are powerful data types, but the notation that goes with them can be confusing at first. In this assignment you are to write a short program that uses four float variables and pointers to those variables in order to perform mathematical operations. You will also write a function to convert the float values to their absolute values.

A. Create a new C program to:

1. Prompt the user to input three numbers, either positive or negative
2. Print these numbers and their sum to the screen.
3. Convert each number to its absolute value using the user-written function **myabsolute ()**
4. Print the new series of numbers and their sum to the screen.

There is not an extensive amount of programming involved, but there is one catch: after declaring the three float variables and assigning their addresses to pointer variables, **you are not allowed to use the float variables (*in name*) in your code**. All standard C operations must be performed with the pointer variables you have created.

For example, these statements will be the only instances of **a**, **b**, **c**, and **sum** in your code:

```
float a, b, c, sum;
float *ptr1, *ptr2, *ptr3 , *ptr4;
ptr1 = &a;
ptr2 = &b;
ptr3 = &c;
ptr4 = &sum;
```

The function prototype for **myabsolute ()** is:

```
void myabsolute (float *, float *, float *) ;
```

Compile, link, test, and if necessary, debug your program. Name your source code file **b12.cpp**. When your program is working correctly, save and print **b12.cpp**.

B. Next, modify the existing program by adding additional statements to prompt the user a second time for three numbers. Save the modified program as **b12mod.cpp**. Call the **myabsolute ()** function a second time and print the absolute value of each number and the sum of all three to the screen. However, in the modified portion of the code, **you may not use any pointer variables**. You must use only the variables **a**, **b**, **c**, and **sum** that were previously declared.

When you are finished and your programs are working correctly, submit copies of **b12.cpp** and **b12mod.cpp** along with this sheet.

Name _____ Instructor _____ Seat _____ Hour _____