Exercise 6-2: Passing Data to a Function

1. Pass by Value
   1. Advantages
      1. Can use variables to produce a result without changing their values.
      2. Passing by value is the default method for non-pointer void functions.
   2. Disadvantages
      1. Is not ideal if you want to affect/change variable values.
      2. Not ideal for recalling a function repeatedly.
      3. You need to return the correct variable value from within the function.
2. Pass by Reference
   1. Advantages
      1. Easily takes user inputs to be changed in calculations.
      2. No need to return any value after the function.
      3. Can call an array.
   2. Disadvantages
      1. A referenced variable’s value will be changed unless a temporary value is used.
      2. Changes to certain values can affect the entire program thereby potentially making troubleshooting more difficult.

Exercise 6-3: Calculating the Length of the Hypotenuse

#include <iostream>

#include <math.h>

using namespace std;

double Calc\_Hypotenuse(double side1, double side2);

int main()

{

double side1;

double side2;

double hypotenuse;

cout << "To calculate the hypotenuse of a right triangle..." << endl << endl;

cout << "Enter the value of side 1: ";

cin >> side1;

cout << "Enter the value of side 2: ";

cin >> side2;

hypotenuse = Calc\_Hypotenuse(side1, side2);

cout << hypotenuse << endl << endl;

system("pause");

return 0;

}

double Calc\_Hypotenuse(double side1, double side2)

{

double result;

result = (side1 \* side1) + (side2 \* side2);

result = sqrt(result);

cout << "The hypotenuse is ";

return result;

}