OOP244 Skills Test

This is an assessment of your current skills and knowledge of the C and C++ language. This is purely a skills assessment and is not counted towards your final grade.

1. When memory is allocated for the following variable, where is it allocated and when does it get allocated?
   1. int a = 0;
   2. double\* x = new double[5];
2. What are the two syntax styles to comment code (give an example of each)?
3. What is the output of the following program?.

#include <stdio.h>

int main() {

char text[18] = "h@feerlnll86od3\0";

for (int i = 0; i < sizeof(text); i += 3) {

printf("%c\n", text[i]);

}

}

Output

1. Where indicated, fill in what the values of the variables should be, if known.

int x = 1;

if (x != 1) {

int y = 7 + x; // what is the value of this y? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

}

else {

int z = 5;

int x = 10;

if (x == 1)

int a = x + z; // what is the value of this x? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

else

z = 9;

int b = x + z; // what is the value of this z?\_\_\_\_\_\_\_\_\_\_\_\_\_ b?\_\_\_\_\_\_\_\_\_\_\_\_\_

}

1. Declare a structure for a person that contains 4 members. One is a char array to hold a name (80 characters), one is an integer to store an age, one is a double to store hourly wage, and one is a bool to indicate if the persons information has been saved. After you declare it, create a new instance of the structure and store someone’s information in it
2. In the following code, fill in the blanks and explain how the result of the function is returned. Be specific about the mechanism. I want the program to output 2.5

void half(int number, double& result) {

result = number \* 0.5f;

}

int main() {

double num1 = 0;

int num2 = 5; //this is the number I want halved

half(\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_);

printf("%f", \_\_\_\_\_\_\_\_\_);

}