Quiz 2: Structures and Classes

1. What is printed by the following code?

int main()

{

struct mystery

{

int valueA;

double number;

};

mystery widget1, widget2;

widget1.valueA = 25;

widget1.number = 23.45;

widget2.valueA = 50;

cout << widget1.valueA << ' ' << widget1.number << endl;

widget2 = widget1;

cout << widget2.valueA << endl;

}

1. Given the following struct:

struct circle

{

string color;

double radius;

};

* 1. Declare an array that can hold 100 circles.
  2. Set color of all the circles to "green" and all radius to zero

1. Given the following class definition:

class rectangleType

{

public:

void setLengthWidth(double x, double y);

//Sets the length = x; width = y;

void print() const;

//Output length and width

double area();

//Calculate and return the area of the rectangle //(length\*width)

double perimeter();

//Calculate and return the perimeter (length of outside //boundary of the rectangle)

private:

double length;

double width;

};

* 1. Assume that the following are done in main:
     1. Declare an instance of rectangleType.
     2. Set the length of the rectangle to 6 and the width to 30.
     3. Print out the area of the rectangle.
  2. Write the function definition for the function perimeter.

1. **EXTRA CREDIT:** Add a public member function to the rectangleType above. This member function takes one parameter of type rectangleType. It returns the difference in area between the two rectangles.
   1. Show the new class definition with this additional function.

* 1. Write the function definition.
  2. Show declarations in the main program and an example call to the function.

1. Find and correct at least four errors:

void main()

{

struct classGrades

{

int gradelist[30];

int numStudents = 29;

string name;

}

classGrades intro, intermediate;

intro.name = "CSC126";

intro.gradelist = 0;

intro.numStudents = 20;

intermediate.numStudents = intro.numStudents;

int i;

for (i = 0; i < intro.numStudents; i++)

intro[i] = 100;

}