CS2311 Mid-term Quiz (Semester A, 2013-14)
Time allowed: 50 minutes

Name: _____

Student ID: _____

Mark: _____/80   Tutorial/Lab: LC1/ LC2/ LC3/ LC4

Answer all questions. Indicate a whitespace using ""

1. (20 marks)

a. What is the output of the following program? Write the answer in the box.

```cpp
void main(){
    int a=30, b=14, d=11;
    int c=a+b;
    a=c;
    cout << "a=" << a << ", c=" << c;
    b = a || (d=0);
    cout << ", b=" << b;
    cout << ", d=" << d;
}
```

Answer:

a=44, c=44, b=1, d=11
(each 2 marks)

b. What is the output of the following program? Write the answer in the box.

```cpp
void main(){
    int i=1;
    int j=2;
    int x,y;

    x=j+(++i);
    y=j+(i--);
    cout << "x=" << x << ", y=" << --y << endl;
    cout << "i=" << i;
}
```

Answer:

x=4, y=3,
i=1 (each 3 marks, another 3 marks for the newline)

2. (28 marks)
a) What is the output of the following program? Write the answer in the box.

```
void main(){
    int i=9;
    int j=6;

    if (i/j)
        cout << i <<endl;
    else
        cout << j <<endl;

    cout << j/i << endl;
    cout << j%i << endl;
    cout << i << j <<endl;
}
```

Answer:

9
0
6
96
(each line: 3 marks, -3 marks)

b) What is the output of the following program? Write the answer in the output column.

```
void main(){
    int i;
    cin >> i;
    switch (i){
        case 1:
        case 2:
        case 3:
            cout << i;
            break;
        case -1:
        case -2:
            cout << i*(-1);
            break;
        default:
            cout << i*i;
    }
}
```

Input	Output (4 marks each)
2	2
4	16
-1	1
10 0	100

3. The following program outputs a positive value of the sum of user input (x and y). Some code contains syntax errors. Write the correct codes in the right column. (Hints: Each line contains **at most** one error. Marks will be deduced for incorrect attempts). (18 marks)

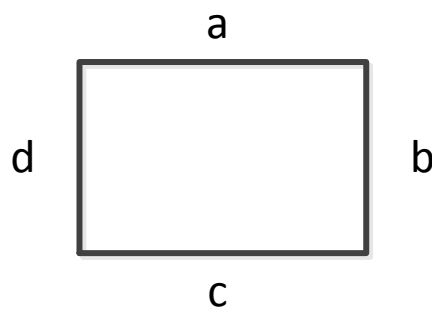|	Program Code	Correct code:
10	`include <iostream>`	`#` (2 marks)
20	`using namespace std`	`;` (2 marks)
30	`void Main(){`	`main` (2 marks)
40	`    int x,y;`	
50	`    double z;`	
60	`    cin << x << y;`	`>> x >> y` (2 marks)
70	`    z=x+y;`	
80	`    if (z>0);`	`if (z>0)` (2 marks)
90	`        cout >> z;`	`<<` (2 marks)
100	`    else`	
110	`        cout >>-z;`	`<<` (2 marks)
120		`}` (4 marks)
130		
140		

4. Write a program to read the sides (a, b, c and d) of a rectangle and output the type of rectangle. All inputs are greater than zero and the position of a, b, c and d are shown in the following figure. (14 marks)

The possible outputs are:
    (1) "**Square**": all sides are equal.
    (2) "**Rectangle**": opposite sides are equal to each other.
    (3) "**Irregular**": all other sides combination

Criteria:
    (1) Inputs are stored in local variable a, b, c and d.
    (2) Only two conditional tests, i.e. two if…else… statements, are allowed.

Sample Input:	Same Output
1 2 3 4	Irregular
3 2 3 2	Rectangle
4 4 4 4	Square
5 7 5 2	Irregular

Answer:

```cpp
#include <iostream>
using namespace std;
void main(){
    int a,b,c,d;
    cin >>a >> b >> c >>d;
    if (a==c && b==d){
        if (b==c)
            cout << "Square";
        else
            cout << "Rectangle";
    }else
        cout << "Irregular";
}


(Marks are given in 2-mark intervals, according to the
severity of bugs/syntax errors, if any.)
```

-End-