Problem Set # 2

Purpose: Introduction to operators and order of precedence.

Problem 1: Write your first program saying “Hello World”. Now change the program to print your name and roll number instead.

Problem 2: Dry run the following lines as well. Each statement is performed independently and not connected with previous.

a = 2, b = 20, c =10, d =5

```
1. e = (a + b) * c / d;
cout << "Value of (a + b) * c / d is :" << e << endl ;
2. e = ((a + b) * c) / d;
cout << "Value of ((a + b) * c) / d is :" << e << endl ;
3. e = (a + b) * (c / d);
cout << "Value of (a + b) * (c / d) is :" << e << endl ;
4. e = a + (b * c) / d;
cout << "Value of a + (b * c) / d is :" << e << endl ;
5. e = a + (b - c) / d * c + a; // 20 + (150/5)
cout << "Value of a + (b - c) / d * c + a is :" << e << endl ;
6. cout << "Value of c++ and ++c is: “ << c++ << ++c;
7. cout << "Value of ++c + a++ is: “ << ++c + a++;
8. cout << "Value of d++ % c++ is: “ << d++ % c++;
9. cout << "Value of c++ << ++c << ++c << c++ is: “ << c++ << ++c << ++c << c++;
10. if ((c = (d==9 || c==4)))
 cout<<<< "Value of c is: “c;
```

Problem 3: What will following program print on screen?

```
#include<iostream>

using namespace std;



void main()

{

        int x = 5;

        int y = 6;

        cout<<"Result = "<< ++x * y<<endl;

        cout<<"x = "<<x<<endl;

}
```

Problem 4: What will following program print on screen?

```
#include<iostream>

using namespace std;


void main()

{

	int x = 5;

	int y = 6;

	cout<<"Result = "<< x++ * y<<endl;

	cout<<"x = "<<x<<endl;

}
```

Problem 5: What will be the output of following program?[1]

```
#include<iostream>

using namespace std;


void main()

{

	int x = 5;

	int y = 6;

	cout<<"Result = "<< ++(x+y)<<endl;

	cout<<"x = "<<x<<endl;

}
```

Problem 6: What will be the output of following program?

```
#include<iostream>

using namespace std;
```

[1]Attempting to use the increment or decrement operator on an expression other than a simple variable name is a syntax error.

```
void main()
{
	int x = 30 / 5 * 4 + 3 * 6 / 2;
	cout<<"x = "<<x<<endl;
}
```

Problem 7: What will be the output of following program?

```
#include<iostream>
using namespace std;

void main()
{
	int x = 3 * 6 / 2 + 30 / 6 * 2;
	cout<<"x = "<<x<<endl;
}
```

Problem 8: What will be the output of following program?

```
#include<iostream>
using namespace std;

void main()
{
	int x = 5;
	cout<<"Result 1 = "<<(x == 5)<<endl;
	cout<<"Result 2 = "<<(x > 10)<<endl;
	cout<<"Result 3 = "<<(x < 10)<<endl;
	cout<<"Result 4 = "<<(x <= 5)<<endl;
```

```
}
```

Problem 9: What will be the output of following program?

```
#include<iostream>

using namespace std;


void main()

{


        int x = 5;

        bool isValid = true;


        cout<<"Result 1 = "<<((x == 5) && !isValid)<<endl;

        cout<<"Result 2 = "<<((x < 10) && isValid )<<endl;


        cout<<"Result 3 = "<<(((x == 5) && !isValid) || ((x < 10) && isValid ))<<endl;

        cout<<"Result 4 = "<<(((x != 5) || !isValid) && ((x == 5 ) && isValid ))<<endl;


}
```

Problem 10: What will be the output of following program?[2]

```
#include<iostream>

using namespace std;


void main()

{
```

[2] Using operator == for assignment and = for equality are logic errors.

```
        int x = 5;



        cout<<"Comparison Result = "<<(x == 6)<<endl;

        cout<<"x = "<<x<<endl;

        cout<<"Comparison Result = "<<(x = 6)<<endl;

        cout<<"x = "<<x<<endl;

}
```

Problem 11: What is wrong with following program and how can you fix it?

```
#include<iostream>

using namespace std;


void main()

{


        int x = 5;

        int y = 6;

        int average = (x + y) / 2;

        cout<<"Average = " <<average<<endl;

}
```

Problem 12: Write a program that asks user to input two characters and checks if both characters are equal.Following is the syntax to declare a character:

```
char ch1;
```

Give ‘a’ and ‘A’ as two characters. Are these characters equal?