

10- Consider the following recursive function.

```
int recFunc(int num)
{
if (num >= 10)
    return 10;
else
    return num * recFunc(num + 1);
}
```

What is the output of the following statement?

```
cout << recFunc(8) << endl;
```

a. 4

b. 8

c. 72

d. 720

Question 2: Find the output of the following programs:

<pre>int n = 4, k = 2; cout << ++n+k<< endl; cout << n << endl; cout <<--k+n++ << endl; cout << k << endl;</pre>	
<pre>int n = -2; while (n < 1) cout << ++n << endl; cout << n << endl;</pre>	
<pre>int i = 5, j = 6, k = 7, n = 3; cout << i + j * k - k % n << endl; cout << i / n << endl;</pre>	
<pre>int found = 0, count = 5; if (!found count == 0) { cout << "true" << endl; count--3; } else { cout<<"false"<<endl; count+=3; } cout << "count = " << count << endl;</pre>	
<pre>const int LENGTH = 12; char message[LENGTH]="hello world"; for(int i=0;i<LENGTH;i+=3) cout << message[i] << endl;</pre>	
<pre>int fun2(int b,int c) { int y=b%c+1; return y; } int fun(int a, int b = 1, int c =2) { int x; x=fun2(b,c); x+=a; return x; } int main() { cout << fun(12,5); return 0; }</pre>	
<pre>int mod(int x,int y) { return (x%y); } int main() { for(int i=0;i<10;i+=3) cout<<i<<"\t"<<mod(i,5)<<endl; return 0; }</pre>	

<pre>int x = 10, y = 40; if (x >= 10) if (y < 40) { x--; y++; } else { x++; y--; } else y+=5; cout << x << " " << y << endl;</pre>	
<pre>int x=10; switch(x%7) { case 1: case 2: cout<<x%4<<endl; break; case 3: cout<<x%5<<endl; case 4: cout<<x%6<<endl; break; case 5: case 6: cout<<x%7<<endl; }</pre>	
<pre>int d = 3; do { cout<<--d<<endl; }while (d>=0);</pre>	

Question 3: Find error(s) in the following codes

Code	Correction
<pre>int A[5]={3,5,6,4,1} for(int i=0;i<=5;i--) { A[i]+=5; }</pre>	
<pre>if(2<x<10) cout<<x%2<<endl; Else cout<<x%3<<endl;</pre>	
<pre>int x; while(x<7); { cout<<power(x,3)<<endl; x++; }</pre>	
<pre>int A[2][3]={{1,2,3,4},{4,1,2,3}}; for(int i=0;i<3;i++) for(int j=0;j<2;j++) cout<<A[i][j];</pre>	
<pre>int fun(int x) { x=(x*5+3)/x; } void main() { cout<<fun(5,4); }</pre>	

Question 4: Perform the following tasks assume all variables are probably declared and initialized.

<p><u>Rewrite the following using do while statments</u></p> <pre>int sum=0; for (int x = 1; x <= 5 ; x++) { sum += x*x; }</pre>	
<p><u>Rewrite the following using if else statements</u></p> <pre>switch(a) { case 3: case 7: cout<<"statement 1"<<endl; break; case 5: cout<<"statement 2"<<endl; break; default: cout<<"statement 3"<<endl; }</pre>	

Question 5: Write a c++ function that called search which will accepts the following parameter

- 1- An array of integer elements
- 2- An integer value that represent tne number of elements in the array
- 3- An integer value called key.
- 4- An integer value called sub

The function should find every element in the array that is equal to key and replace it with sub. The function will return an integer value that represent the number of values that had replaced if non it should return 0.

Question 6: Write a program that perform the following:

- 1- define a 2 dimension array of 5 rows and 6 columns.
- 2- Then the program should input the elements of the array from the keyboard.
- 3- Then the program should search the array to find the elements that are multiple of 7 and divide each element on 3 and store it back in its location.
- 4- Then the program should display the result array on the screen.