



**Prepared By:**

Name	CMS ID	Class
Muhammad Asim Shah	470574	ME-15 "C"

1. Write a program in C++ to find LCM of any two numbers using HCF.

**Input:**

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int a, b, c;
```

```
    cout << "Enter the first number: ";
```

```
    cin >> a;
```

```
    cout << "Enter the second number: ";
```

```
    cin >> b;
```



```
c = (a > b) ? a: b;

while (true) {

    if (c % a == 0 && c % b == 0) {

        cout << "LCM of " << a << " and " << b << " is " << c << endl;

        break;

    }

    c++;

}

return 0;

}
```

## Output

```
9
10
11     cout << "Enter the first number: ";
12     cin >> a;
13
14
15
16     cout << "Enter the second number: ";
17     cin >> b;
18
19     c = (a > b) ? a: b;
20
21     while (true) {
22         if (c % a == 0 && c % b == 0) {
23             cout << "LCM of this is " << a << " and " << b << " is " << c << endl;
24             break;
25         }
26         c++;
27     }
28
29
30
input
Enter the second number: 88
LCM of this is 56 and 88 is 616
...Program finished with exit code 0
Press ENTER to exit console.
Press ENTER to exit console.
```



2. Write a program in C++ to find out the sum of an Arithmetic progression series.

### **Input**

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
    int x;
```

```
    double y;
```

```
    double d;
```

```
    cout << "Enter the number of terms to be place in the series: ";
```

```
    cin >> x;
```

```
    cout << "Enter the first term of the series i.e (a): ";
```

```
    cin >> y;
```

```
    cout << "Enter the common difference of the series i.e (d): ";
```

```
    cin >> d;
```



```
double sum = (x / 2.0) * (2 * y + (x - 1) * d);
```

```
cout << "Sum of the arithmetic progression series is given by: " << sum << endl;
```

```
return 0;
```

```
}
```

## Output

```
7 double d;  
8  
9 cout << "Enter the number of terms to be place in the series: ";  
10 cin >> x;  
11  
12 cout << "Enter the first term of the series i.e (a): ";  
13 cin >> y;  
14  
15 cout << "Enter the common difference of the series i.e (d): ";  
16 cin >> d;  
17  
18  
19 double sum = (x / 2.0) * (2 * y + (x - 1) * d);  
20  
21 cout << "Sum of the arithmetic progression series is given by: " << sum << endl;  
22  
23 return 0;  
24 }  
25
```

input

```
Enter the number of terms to be place in the series: 10  
Enter the first term of the series i.e (a): 6  
Enter the common difference of the series i.e (d): 5  
Sum of the arithmetic progression series is given by: 285  
...Program finished with exit code 0  
Press ENTER to exit console.
```

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3. Write a program in C++ to create a diamond.

```
cout << " ";
```



```
}  
  
for (int k = 1; k <= 2 * i - 1; k++) {  
  
    cout << "*";  
  
}  
  
cout << endl;  
  
}  
  
return 0;  
  
}
```

### Output:

```
9- for (int j = n; j > i; j--) {  
10-     cout << " ";  
11- }  
12- for (int k = 1; k <= 2 * i - 1; k++) {  
13-     cout << "*";  
14- }  
15-     cout << endl;  
16- }  
17- for (int i = n - 1; i >= 1; i--) {  
18-     for (int j = n; j > i; j--) {  
19-         cout << " ";  
20-     }  
21-     for (int k = 1; k <= 2 * i - 1; k++) {  
22-         cout << "*";  
23-     }  
24-     cout << endl;  
25- }  
26- return 0;  
  
input  
Enter number of rows of the half of a diamond: 4  
*  
***  
*****  
*****  
***  
*  
  
Program finished with exit code 0
```

4. Write a program in C++ to convert a decimal number to binary number.

### Input

```
#include <iostream>
```

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```
using namespace std;
```

```
int main() {
```

```
    int dnumber;
```

```
    cout << "Enter a decimal number: ";
```

```
    cin >> dnumber;
```

```
    if (dnumber < 0) {
```

```
        cout << "Negative numbers are not supported in this program." << endl;
```

```
        return 1;
```

```
    }
```

```
    int bnumber = 0;
```

```
    int base = 1;
```

```
    while (dnumber > 0) {
```

```
        int remainder = dnumber % 2;
```

```
        bnumber = bnumber + remainder * base;
```

```
        dnumber = dnumber / 2;
```

```
        base = base * 10;
```

```
    }
```

```
    cout << "Binary representation: " << bnumber << endl;
```

```
    return 0;
```



}

## Output:

```
9-  if (decimalNumber < 0) {
10-      cout << "Negative numbers are not supported in this program." << endl;
11-      return 1;
12-  }
13-
14-  int binaryNumber = 0;
15-  int base = 1;
16-
17-  while (decimalNumber > 0) {
18-      int remainder = decimalNumber % 2;
19-      binaryNumber = binaryNumber + remainder * base;
20-      decimalNumber = decimalNumber / 2;
21-      base = base * 10;
22-  }
23-
24-  cout << "Binary representation: " << binaryNumber << endl;
25-
26-  return 0;
27- }
28- }
```

input

Enter a decimal number: 210  
Binary representation: 11010010

...Program finished with exit code 0  
Press ENTER to exit console.

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