1.Write a c++ program to check a leap year.

```
= #include<iostream>

using namespace std;

int main()
{
    int year;
    cout << "Enter a year: ";
    cin >> year;

    if((year % 4 == 0 && year % 100 != 0) || (year % 400 == 0))
    {
        cout << year << " is a leap year." << endl;
    }
    else
    {
        cout << year << " is not a leap year." << endl;
    }

    return 0;
}
```

Output:-

```
Enter a year 2024
The year is a leap year.
```

2.Write a C++ program to reverse number.

```
= #include<iostream>

using namespace std;
int main()
{
   int n,reverse=0;
   cout <<"enter the reverse number";
   cin>>n;
   while(n!=0)
   {
      reverse=reverse*10+n%10;
      n=n/10;
   }
   cout<<"reversed number "<<reverse;
    return 0;
}
```

Output:-

```
Enter the reverse number 121
Reversed number 121
```

3.Write a C++ program to find Harshad number between 1 to 1000.

```
= #include<iostream>

using namespace std;
int main()
{
  for (int i=1;i<=1000;i++)
  {
     int sum=0,var=i;
     while(var>0)
     {
        sum=sum+var%10;
        var=var/10;
     }
     if(i%sum==0)
     {
        cout<<i<<" ";
     }
  }
  cout<<endl;
  return 0;
}
```

Output:-

1 2 3 4 5 6 7 8 9 10 12 18 20…etc.

4.Write a C++ program to convert a binary sequence to its corresponding decimal number.

```
= #include <iostream>
#include <math.h>
using namespace std;
int main()
{
   int n,i=0,sum=0;
   cout<<"enter the binary number";
   cin>>n;
   while(n>0)
   {
      sum=sum+(n%10)*pow(2,i);
      n=n/10;
      i++;
   }
   cout<<sum;
   return 0;
}
```

Output:-

Enter the binary number 10

2.