

1) Write a program that displays the value of the following sum:

$$S = \sum_{i=1}^n \frac{x^i}{i!}$$

```
{ int k, i, j, n, x;
  float s = 0; double p, f;
  cout << "Enter the value of n:";
  cin >> n;
  cout << "Enter the value of x:";
  cin >> x;
  for (i=1; i<=n; i++)
  { f = 1.0;
    p = 1.0;
    for (j=1; j<=i; j++)
      f = f * j;

    for (k=1; k<=i; k++)
      p = p * x;

    s = s + p/f;
  }
  cout << "S = " << s;
}
```

2)

```
{ int n, i;
```

```
while (1)
```

```
{ cout << "Enter an integer:";
```

```
cin >> n;
```

```
if (n <= 0)
```

```
break;
```

```
cout << "The divisors of " << n << " are:";
```

```
for (i=1; i <= n; i++)
```

```
{ if (n % i == 0)
```

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

```
}
```

```
cout << endl;
```

```
}
```

```
}
```

3) Write a program that displays all the prime numbers less than  $N$ , where  $N$  is an integer number entered by the user

```
{ int i, j, N;  
  int c;  
  cout << "Enter N: ";  
  cin >> N;  
  for ( i=1; i<N; i++)  
  { c=0;  
    for ( j=2; j<i; j++)  
    { if ( i%j==0 )  
      c++; }  
    if ( c==0 )  
      cout << i << " ";  
  }  
}
```

