1.Average of 10 numbers.

```
#include <iostream>
using namespace std;
// average of 10 numbers
int main()
{
   int num;
   int sum=0;
   for( int i=1;i<=10;i++)
   {
      cout<<"Enter any 10 numbers:"<<endl;
      cin>>num;
      sum+=num;
   }
   float average=sum/10.0;
   cout<<"average of 10 numbers"<<average<<endl;
}
```

2. Factorial of a number.

```
 #include <iostream>
using namespace std;
int main()
{
   int n = 5; // Number of rows
   for (int i = 1; i <= n; i++) {
      for (int j = 1; j <= i; j++) {
         cout << "* ";
      }
      cout << endl;
   }
   return 0;
}
```

3. Right angled pattern

```
#include <iostream>
using namespace std;
int main()
 {
   int n = 5;
   for (int i = 1; i <= n; i++) {
      for (int j = 1; j <= i; j++) {
         cout << "* ";
      }
      cout << endl;
   }
   return 0;
}
```

4. Inverted right angled triangle.

```
#include <iostream>
using namespace std;
int main()
 {
   int n = 5;
   for (int i = n; i >= 1; i--) {
      for (int j = 1; j <= i; j++) {
         cout << "* ";
      }
      cout << endl;
   }
   return 0;
}
```

5. left pattern

```
#include <iostream>
using namespace std;
int main()
{
   int n = 5;
   for (int i = 1; i <= n; i++)
   {
         for (int j = i; j < n; j++) {
         cout << "  ";
      }
      for (int j = 1; j <= i; j++) {
         cout << "* ";
      }
      cout << endl;
   }
   return 0;
}
```

6. Inverted left pattern

```
#include <iostream>
using namespace std;
int main() {
   int n = 5;
   for (int i = n; i >= 1; i--) {
      for (int j = n; j > i; j--) {
         cout << "  ";
      }
      for (int j = 1; j <= i; j++) {
         cout << "* ";
      }
      cout << endl;
   }
```

```
    return 0;
}
```

7. pyramid

```
#include <iostream>
using namespace std;
int main()
 {
    int n = 5;
    for (int i = 1; i <= n; i++)
 {
        for (int j = i; j < n; j++)
{
            cout << "  ";
        }
        for (int j = 1; j <= (2 * i - 1); j++)
 {
            cout << "* ";
        }
        cout << endl;
    }
    return 0;
}
```

8. Inverted Pyramid

```
#include <iostream>
using namespace std;
int main()
{
    int n = 5;
    for (int i = n; i >= 1; i--) {
        // Print leading spaces
        for (int j = n; j > i; j--) {
            cout << "  ";
        }
        for (int j = 1; j <= (2 * i - 1); j++)
{
```

```
            cout << "* ";
        }
        cout << endl;
    }
    return 0;
}
```

9. Full pyramid

```
#include <iostream>
using namespace std;
int main() {
    int n = 5;
    for (int i = 1; i <= n; i++)
    {
        for (int j = i; j < n; j++)
 {
            cout << "  ";
        }
            for (int j = 1; j <= (2 * i - 1); j++)
{
            cout << "* ";
        }
        cout << endl;
    }
    for (int i = n - 1; i >= 1; i--)
 {
            for (int j = n; j > i; j--)
{
            cout << "  ";
        }
                for (int j = 1; j <= (2 * i - 1); j++)
{
            cout << "* ";
        }
        cout << endl;
    }
```

```
    return 0;
}
```

10. Number pyramid

```
#include <iostream>
using namespace std;
int main()
 {
    int n = 4;
    for (int i = 1; i <= n; i++)
{
        for (int j = 1; j <= i; j++)
{
            cout << i << " ";
        }
        cout << endl;
    }
    return 0;
}
```

12. income

```
 #include <iostream>

using namespace std;

int main()
{
    float income, tax=0;
    int age;

    cout << "Enter the age of the person: ";
    cin >> age;
    cout << "Enter the income: ";
    cin >> income;

    if (age <= 60)
    {
```

```
        if (income <= 250000) {
            tax = 0.0;
        } else if (income <= 500000) {
            tax = 0.05 * (income - 250000);
        } else if (income <= 1000000) {
            tax = 0.05 * 250000 + 0.10 * (income - 500000);
        } else if (income <= 3000000) {
            tax = 0.05 * 250000 + 0.10 * 500000 + 0.20 * (income - 1000000);
        } else {
            tax = 0.05 * 250000 + 0.10 * 500000 + 0.20 * 2000000 + 0.30 * (income - 3000000);
        }
    }
    else {
        if (income <= 300000) {
            tax = 0.0;
        }
        else if (income <= 500000) {
            tax = 0.05 * (income - 300000);
        }
        else if (income <= 2000000)
        {
            tax = 0.05 * 200000 + 0.10 * (income - 500000);
        }
        else
        {
            tax = 0.05 * 200000 + 0.10 * 1500000 + 0.20 * (income - 2000000);
        }
    }

    cout << "The income tax is: " << tax << endl;
}
```