

## Question 1a

```
input
Enter an integer n: 10
Sum from 1 to 10 using for loop is: 55
Sum from 1 to 10 using while loop is: 55

input
Enter an integer n: 1000
Sum from 1 to 1000 using for loop is: 500500
Sum from 1 to 1000 using while loop is: 500500

input
Enter an integer n: 100
Sum from 1 to 100 using for loop is: 5050
Sum from 1 to 100 using while loop is: 5050

input
Enter an integer n: 12345
Sum from 1 to 12345 using for loop is: 76205685
Sum from 1 to 12345 using while loop is: 76205685
```

## Question 1b

```
input
Enter an integer n: 100
Sum from 1 to 100 using sum function is: 5050

input
Enter an integer n: 10
Sum from 1 to 10 using sum function is: 55

input
Enter an integer n: 1000
Sum from 1 to 1000 using sum function is: 500500

input
Enter an integer n: 12345
Sum from 1 to 12345 using sum function is: 76205685
```

# Question 1c

```
Enter an integer n: 10
Sum from 1 to 10 is: 55
Calculating sum backwards:
Sum of 10 + 10 + ... + 1 is 10 in iteration 1
Sum of 10 + 9 + ... + 1 is 19 in iteration 2
Sum of 10 + 8 + ... + 1 is 27 in iteration 3
Sum of 10 + 7 + ... + 1 is 34 in iteration 4
Sum of 10 + 6 + ... + 1 is 40 in iteration 5
Sum of 10 + 5 + ... + 1 is 45 in iteration 6
Sum of 10 + 4 + ... + 1 is 49 in iteration 7
Sum of 10 + 3 + ... + 1 is 52 in iteration 8
Sum of 10 + 2 + ... + 1 is 54 in iteration 9
Sum of 10 + 1 + ... + 1 is 55 in iteration 10
```

input

```
Enter an integer n: 20
Sum from 1 to 20 is: 210
Calculating sum backwards:
Sum of 20 + 20 + ... + 1 is 20 in iteration 1
Sum of 20 + 19 + ... + 1 is 39 in iteration 2
Sum of 20 + 18 + ... + 1 is 57 in iteration 3
Sum of 20 + 17 + ... + 1 is 74 in iteration 4
Sum of 20 + 16 + ... + 1 is 90 in iteration 5
Sum of 20 + 15 + ... + 1 is 105 in iteration 6
Sum of 20 + 14 + ... + 1 is 119 in iteration 7
Sum of 20 + 13 + ... + 1 is 132 in iteration 8
Sum of 20 + 12 + ... + 1 is 144 in iteration 9
Sum of 20 + 11 + ... + 1 is 155 in iteration 10
Sum of 20 + 10 + ... + 1 is 165 in iteration 11
Sum of 20 + 9 + ... + 1 is 174 in iteration 12
Sum of 20 + 8 + ... + 1 is 182 in iteration 13
Sum of 20 + 7 + ... + 1 is 189 in iteration 14
Sum of 20 + 6 + ... + 1 is 195 in iteration 15
Sum of 20 + 5 + ... + 1 is 200 in iteration 16
Sum of 20 + 4 + ... + 1 is 204 in iteration 17
Sum of 20 + 3 + ... + 1 is 207 in iteration 18
Sum of 20 + 2 + ... + 1 is 209 in iteration 19
Sum of 20 + 1 + ... + 1 is 210 in iteration 20
```