

First determine what each program segment produces, then type the program segment into the computer and check your results.

1. What is the output for each of the following segment of code? Show your memory maps!

```
for (int k = 3; k <= 6; k++)
{
    for (int j = k; j >= 1; j--)
    {
        System.out.print(k + " ");
    }
    System.out.println();
}
```

```
for (int k = 5; k >= 1; k--)
{
    for (int j = k; j >= 1; j--)
    {
        System.out.print(j + " ");
    }
    System.out.println();
}
```

```
for (int k = 2; k <= 6; k++)
{
    for (int j = 5; j <= 10; j++)
    {
        int sum = k + j;
        System.out.print(sum + " ");
    }
    System.out.println();
}
```

```
int sum = 0, a = 7;
while (a < 10)
{
    for (int k = a; k <= 10; k++)
        sum = sum + k;
    a = a + 1;
}
System.out.println(sum);
```

```
int a = 5;
int num = a;
while (num <= 7)
{
    for (int k = a; k <= 7; k++)
        System.out.print(num + " ");
    System.out.println();
    num = num + 1;
} // end of while
```

2. Write a program fragment that uses nested loops to produce the following output.

1	2	3	4	5
2	4	6	8	10
3	6	9	12	15
4	8	12	16	20

3. Write a program fragment that uses nested loops to produce the following output.

```
*****  
****  
***  
**  
*
```