1. Indexing into a Nested List

A **nested list** is a list that contains other lists. The list below contains three smaller lists.

```
numbers = [
    [10, 20, 30],
    [40, 50, 60],
    [70, 80, 90]
]
```

For each part, write what the code prints.

```
print(numbers[0])
```

```

```

Solution:

`[10, 20, 30]`

`numbers[0]` accesses the first smaller list inside `numbers`.

```
print(numbers[2])
```

```

```

Solution:

`[70, 80, 90]`

`numbers[2]` accesses the third smaller list inside `numbers`.

```
print(numbers[1][2])
```

```

```

Solution:

`60`

First, `numbers[1]` accesses the second smaller list:

`[40, 50, 60]`

Then, `[2]` accesses the third value in that list.

```
row = numbers[2]
print(row[0])
```

Solution:

`70`

The variable `row` refers to the third smaller list:

`[70, 80, 90]`

Therefore, `row[0]` accesses the first value in that list.

2. Nested For Loops

A **nested for loop** is a for loop inside another for loop. Read the code below carefully. Write everything that the code prints.

```
for i in range(2):
    for j in range(3):
        print(i, j)
```

Solution:

```
0 0
0 1
0 2
1 0
1 1
1 2
```

The outer loop sets `i` to `0` and then `1`. For each value of `i`, the inner loop runs completely, setting `j` to `0`, `1`, and `2`.

3. Using Nested Loops with a Nested List

The nested list below stores three rows of numbers.

```
scores = [
    [4, 7, 2],
    [8, 1, 5],
    [3, 6, 9]
]
```

Fill in the blanks. Your completed code should use a nested `for` loop to print every number in `scores`.

```
for row in range(____________________):

    for column in range(____________________):

        print(scores[__________________][__________________])
```

Solution:

```
for row in range(3):
```

```
    for column in range(3):

        print(scores[row][column])
```

The completed blanks are:

```
3
3
row
column
```

The outer loop chooses a row. The inner loop chooses a column within that row.

After filling in the blanks, write the output of the completed code.

Solution:

```
4
7
2
8
1
5
3
6
9
```

The program prints the numbers one row at a time, starting with the first row and ending with the third row.