

1. What are the two values of the Boolean data type? How do you write them?

→ A Boolean is a data type with two possible values: True (1) or False (0).

2. What are the three different types of Boolean operators?

→ Boolean Operators are simple words (AND, OR, NOT or AND NOT).

3. Make a list of each Boolean operator's truth tables (i.e. every possible combination of Boolean values for the operator and what it evaluates to).

AND Operator (and):

Operand 1	Operand 2	Result
True	True	True
True	False	False
False	True	False
False	False	False

OR Operator (or):

Operand 1	Operand 2	Result
True	True	True
True	False	True
False	True	True
False	False	False

NOT Operator (not):

Operand	Result
True	False
False	True

4. What are the values of the following expressions?

(5 > 4) and (3 == 5) → False

not (5 > 4) → False

(5 > 4) or (3 == 5) → True

not ((5 > 4) or (3 == 5)) → False

(True and True) and (True == False) → False

(not False) or (not True) → True

5. What are the six comparison operators?

→

Greater Than	>
Less Than	<
Greater Than Equal	>=
Less Than Equal	<=
Equal	==
Not Equal	!=

6. How do you tell the difference between the equal to and assignment operators? Describe a condition and when you would use one.

→ The = is an assignment operator, while == is called equality operators.

Use: For Assignment k = 6

For check the equality (k==6) # return True

7. Identify the three blocks in this code:

```
spam = 0
```

```
if spam == 10:
```

```
    print('eggs')
```

```
if spam > 5:
```

```
    print('bacon')
```

```
else:
```

```
    print('ham')
```

```
    print('spam')
```

```
    print('spam')
```

→

```
spam = 0
```

```
if spam == 10:
```

```
    print('eggs')
```

```
if spam > 5:
    print('bacon')
else:
    print('ham')
    print('spam')
    print('spam')
```

8. Write code that prints Hello if 1 is stored in spam, prints Howdy if 2 is stored in spam, and prints Greetings! if anything else is stored in spam.

→ spam = 1

```
if spam == 1:
    print('Hello')
if spam == 2:
    print('Howdy')
else:
    print('Greetings!')
```

9. If your programme is stuck in an endless loop, what keys you'll press?

→ You can stop an infinite loop with CTRL + C

10. How can you tell the difference between break and continue?

→ **Break:** A break statement alters the flow of a loop by terminating it once the condition is met.
Continue: The continue statement is used to skip the remaining code inside a loop for the current iteration only

11. In a for loop, what is the difference between range(10), range(0, 10), and range(0, 10, 1)?

→ In a for loop, range(10), range(0, 10), and range(0, 10, 1) are same. They all represent a sequence of numbers starting from 0 and ending at 9 (10 numbers in total).

The range() function in Python can take up to three arguments:

- ➔ **range(stop):** This form of range() takes a single argument specifying the stop value. The sequence generated starts from 0 and ends at stop - 1. So, range(10) will generate numbers from 0 to 9.
- ➔ **range(start, stop):** In this form, range() takes two arguments, specifying the start and stop values. The sequence generated starts from start and ends at stop - 1. So, range(0, 10) will also generate numbers from 0 to 9.
- ➔ **range(start, stop, step):** This form of range() takes three arguments, specifying the start, stop, and step values. The sequence generated starts from start, increments by step at each iteration, and ends before reaching or exceeding stop. By default, the step value is 1. So, range(0, 10, 1) is equivalent to the previous examples and generates numbers from 0 to 9, incrementing by 1 at each step.

12. Write a short program that prints the numbers 1 to 10 using a for loop. Then write an equivalent program that prints the numbers 1 to 10 using a while loop.

➔ **for i in range(11):**

print(i)

➔ **i = 0**

while(i<10):

i += 1

print(i)

13. If you had a function named bacon() inside a module named spam, how would you call it after importing spam?

➔ **import spam**

➔ **spam. bacon()**