1. **What are the two values of the Boolean data type? How do you write them?**
   * The two values of the Boolean data type are True and False. They are written with an uppercase 'T' and 'F' respectively.
2. **What are the three different types of Boolean operators?**
   * The three different types of Boolean operators are:
     1. **AND** (and)
     2. **OR** (or)
     3. **NOT** (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** (and) Truth Table:

| **A** | **B** | **A and B** |
| --- | --- | --- |
| True | True | True |
| True | False | False |
| False | True | False |
| False | False | False |

* + **OR** (or) Truth Table:

| **A** | **B** | **A or B** |
| --- | --- | --- |
| True | True | True |
| True | False | True |
| False | True | True |
| False | False | False |

* + **NOT** (not) Truth Table:

| **A** | **not A** |
| --- | --- |
| True | False |
| False | True |

1. **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

1. **What are the six comparison operators?**
   * The six comparison operators are:
     1. == (equal to)
     2. != (not equal to)
     3. > (greater than)
     4. < (less than)
     5. >= (greater than or equal to)
     6. <= (less than or equal to)
2. **How do you tell the difference between the equal to and assignment operators? Describe a condition and when you would use one.**
   * The **equal to** operator (==) checks if two values are equal. It is used in comparison statements.
   * The **assignment** operator (=) assigns a value to a variable.
   * Example:

Python

x = 10 # Assignment: assigns the value 10 to variable x

if x == 10: # Comparison: checks if x is equal to 10

print("x is 10")

1. **Identify the three blocks in this code:**

Python

spam = 0

if spam == 10:

print('eggs')

if spam > 5:

print('bacon')

else:

print('ham')

print('spam')

print('spam')

* + The three blocks are:
    1. if spam == 10: block
    2. if spam > 5: block
    3. else: block

1. **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.**

Python

spam = int(input("Enter a value for spam: "))

if spam == 1:

print("Hello")

elif spam == 2:

print("Howdy")

else:

print("Greetings!")

1. **If your program is stuck in an endless loop, what keys will you press?**
   * Press Ctrl + C to interrupt and stop the program.
2. **How can you tell the difference between break and continue?**
   * break exits the current loop entirely.
   * continue skipping the rest of the current loop iteration and move to the next iteration.
3. **In a for loop, what is the difference between range(10), range(0, 10), and range(0, 10, 1)?**
   * range(10) generates numbers from 0 to 9.
   * range(0, 10) also generates numbers from 0 to 9, explicitly starting from 0.
   * range(0, 10, 1) generates numbers from 0 to 9 with a step of 1, explicitly specifying the step.
4. **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.**

Python

# For loop

for i in range(1, 11):

print(i)

# While loop

i = 1

while i <= 10:

print(i)

i += 1

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

Python

import spam

spam.bacon()