Question 1: Variables and Data Types
Problem: Write a Python program that:

1. Accepts a string, an integer, a float, and a boolean from the user.
2. Initializes variables for each type, and prints them out.
3. Convert the string to uppercase and print it.
4. Check if the integer is even or odd and print the result.
5. Multiply the float by 2 and print the result. Example Input:

Enter a string: python

Enter an integer: 25

Enter a float: 3.14

Enter a boolean (True/False): True

Example Output:

Uppercase String: PYTHON

The number 25 is Odd

Doubled float: 6.28

```
# 1. Accepts a string, an integer, a float, and a boolean from the
user.

user_string = input("Enter a string: ")
user_integer = int(input("Enter an integer: "))
user_float = float(input("Enter a float: "))
boolean_input = input("Enter a boolean (True/False):
").strip().lower()

# Convert the boolean input to the correct type
if boolean_input == "true":
    user_boolean = True
elif boolean_input == "false":
    user_boolean = False
else:
    print("Invalid input... Setting default value as False.")
    user_boolean = False

# 2. Initializes variables for each type, and prints them out.
print("String:", user_string)
print("Integer:", user_integer)
print("Float:", user_float)
print("Boolean:", boolean_input)
```

```
String: Python
Integer: 25
```

```
Float: 3.14
Boolean: true

# 3.  Convert the string to uppercase and print it.
uppercase_string = user_string.strip().upper()
print("Uppercase String: ",uppercase_string)

# 4.  Check if the integer is even or odd and print the result.
if user_integer%2 == 0:
    print(f"The number {user_integer} is Even")
else:
    print(f"The number {user_integer} is Odd")

# 5.  Multiply the float by 2 and print the result.
multiply_float = 2 * user_float
print("Doubled float: ", multiply_float)

Uppercase String:  PYTHON
The number 25 is Odd
Doubled float:  6.28
```

Question 2: Operators
Problem: Write a Python program that:

1. Accepts two numbers as input from the user.
2. Performs and prints the result of all the arithmetic operations (addition, subtraction, multiplication, division, modulus, flow division) between these two numbers.
3. Use comparison operators to check if the first number is greater than the second, and if they are equal.
4. Use logical operators to combine two conditions (e.g., the first number is greater than the second, and the second number is less than 10).

Example Input:

Enter the first number: 10

Enter the second number: 3

Example Output:

Addition: 13

Subtraction: 7

Multiplication: 30

Division: 3.3333333333333335

Modulus: 1

Flow Division: 3

First number is greater than second: True

First number is equal to second: False

Both conditions are true: True

```
# 1.  Accepts two numbers as input from the user.
num_1 = int(input("Enter the first number: "))
num_2 = int(input("Enter the second number: "))

# 2.  Performs and prints the result of all the arithmetic operations
(addition, subtraction, multiplication, division, modulus, flow
division) between these two numbers.
print("Addition: ", num_1 + num_2)
print("Subtraction: ", num_1 - num_2)
print("Multiplication: ", num_1 * num_2)
print("Division: ", num_1/num_2)
print("Modulus: ", num_1%num_2)
print("Flow Division: ", num_1//num_2)
```

```
Addition:  13
Subtraction:  7
Multiplication:  30
Division:  3.3333333333333335
Modulus:  1
Flow Division:  3
```

```
# 3.  Use comparison operators to check if the first number is greater
than the second, and if they are equal.
if num_1 >= num_2:
    print("First number is greater than second: True")
else:
    print("First number is greater than second: False")


if num_1 == num_2:
    print("First number is equal to second: True")
else:
    print("First number is equal to second: False")
```

```
First number is greater than second: True
First number is equal to second: False
```

```
#  4.  Use logical operators to combine two conditions (e.g., the
first number is greater than the second, and the second number is less
than 10).
if num_1 > num_2 and num_2 < 10:
    print("Both conditions are true: True")
```

```
else:
    print("Both conditions are true: False")
```

```
Both conditions are true: True
```

Question 3: Loops

Problem: Write a Python program that:

1. Accepts a list of integers from the user.
2. Loops through the list and prints out each number.
3. If a number is greater than 10, skip it using the continue statement.
4. Stop the loop if the number is 20 using the break statement.
5. After the loop ends, print a message that the loop ended naturally.

Example Input:

Enter a list of numbers separated by spaces: 5 10 12 15 20 8

Example Output:

5

10

Skipping 12

15

Breaking at 20

Loop ended naturally

```
# 1.  Accepts a list of integers from the user.
user_list = input("Enter a list of numbers separated by spaces: ")

int_list = list(map(int, user_list.split()))
print(int_list)
```

```
[5, 10, 12, 15, 20, 8]
```

```
# 2.  Loops through the list and prints out each number.
for i in int_list:

    # 4.  Stop the loop if the number is 20 using the break statement.
    if i == 20:
        print(f"Breaking at {i}")
        print("Loop ended naturally")         # 5.  After the loop
ends, print a message that the loop ended naturally.
```

```
        break

    # 3.  If a number is greater than 10, skip it using the continue
statement.
    if i > 10:
        print(f"Skipping {i}")
        continue
    print(i)

# # 5.  After the loop ends, print a message that the loop ended
naturally.
# else:
#     print("Loop ended naturally")


5
10
Skipping 12
Skipping 15
Breaking at 20
Loop ended naturally
```