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.

```
my_string = input("Enter a string: ")
my_integer = int(input("Enter an integer: "))
my_float = float(input("Enter a float: "))
my_boolean = input("Enter a boolean (True/False):
").strip().capitalize() == "True"

print("Uppercase String:", my_string.upper())  # Convert string to
uppercase and print it

if my_integer % 2 == 0: # Check if the integer is even
    print(f"The number {my_integer} is Even")
else:
    print(f"The number {my_integer} is Odd")

# Multiply float by 2 and print the result
print("Doubled float:", my_float * 2)
```

```
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).

```
# Accepting two numbers as input
num1 = float(input("Enter the first number: "))
num2 = float(input("Enter the second number: "))

# Performing arithmetic operations
print("Addition:", num1 + num2)
print("Subtraction:", num1 - num2)
print("Multiplication:", num1 * num2)
print("Division:", num1 / num2)
print("Modulus:", num1 % num2)
```

```python
print("Floor Division:", num1 // num2)  # Floor division rounds down
to the nearest whole number

# Using comparison operators
print("First number is greater than second:", num1 > num2)
print("First number is equal to second:", num1 == num2)

# Using logical operators
condition1 = num1 > num2
condition2 = num2 < 10
print("Both conditions are true:", condition1 and condition2)
```

```
Addition: 13.0
Subtraction: 7.0
Multiplication: 30.0
Division: 3.3333333333333335
Modulus: 1.0
Floor Division: 3.0
First number is greater than second: True
First number is equal to second: 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.

```python
# Accepting a list of integers from the user
user_input = input("Enter a list of numbers separated by spaces: ")
num_list = list(map(int, user_input.split()))  # Convert input to a
list of integers

# Looping through the list
for num in num_list:
    if num == 12:
        print(f"Skipping {num}")
        continue  # Skip only 12

    if num == 20:
        print("Breaking at 20")
        break  # Stop the loop when encountering 20

    print(num)  # Print the number if it is not skipped

# Message after the loop ends
print("Loop ended naturally")
```

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