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# 1. Print numbers from 1 to 5 using a while loop
print("1. Numbers from 1 to 5 using a while loop:")
i = 1
while i <= 5:
    print(i)
    i += 1

print()  # Adding a newline for separation

# 2. Calculate the sum of numbers from 1 to 10 using a while loop
print("2. Sum of numbers from 1 to 10 using a while loop:")
sum_numbers = 0
i = 1
while i <= 10:
    sum_numbers += i
    i += 1
print(f"Sum from 1 to 10 is: {sum_numbers}")

print()  # Adding a newline for separation

# 3. Calculate the factorial of a number using a for loop
print("3. Factorial of a number using a for loop:")

def factorial(n):
    result = 1
    for i in range(1, n + 1):
        result ×= i
    return result

num = 5  # You can change this number to calculate the factorial of a different
number
print(f"The factorial of {num} is: {factorial(num)}")

print()  # Adding a newline for separation

# 4. Count the number of vowels in a string using a for loop
print("4. Count the number of vowels in a string using a for loop:")

def count_vowels(string):
    vowels = "aeiouAEIOU"
    count = 0
    for char in string:
        if char in vowels:
            count += 1
    return count

input_string = "Hello, how are you?"
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vowel_count = count_vowels(input_string)
print(f"The number of vowels in the string '{input_string}' is: {vowel_count}")

print()  # Adding a newline for separation

# 5. Print a pattern using nested loops
print("5. Print a pattern using nested loops:")

for i in range(1, 6):  # Number of rows
    for j in range(1, i + 1):  # Number of stars in each row
        print("*", end=" ")
    print()  # Move to the next line after each row

print()  # Adding a newline for separation

# 6. Generate a multiplication table using nested loops
print("6. Generate a multiplication table using nested loops:")

def multiplication_table(n):
    for i in range(1, 11):  # Looping through 1 to 10 for the multiplication table
        for j in range(1, n + 1):  # Looping through 1 to n to print multiples
            print(f"{j} x {i} = {i * j}", end="\t")
        print()  # Move to the next line after printing one row

multiplication_table(5)  # Change this number for a different multiplication
table (e.g., 5x table)
```