1. Pseudocode for Finding the Maximum of Three Numbers

START

INPUT Num1, Num2, Num3

IF Num1 >= Num2 AND Num1 >= Num3 THEN

   Max = Num1

ELSE IF Num2 >= Num1 AND Num2 >= Num3 THEN

   Max = Num2

ELSE

   Max = Num3

END IF

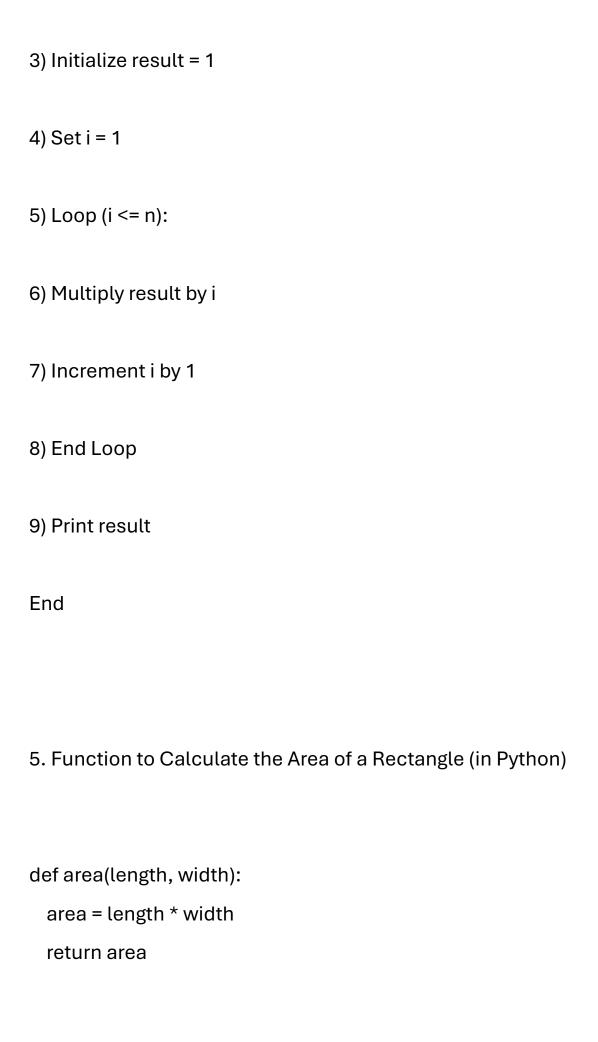PRINT "The maximum number is: ", Max

END

2. Compare and Contrast Two Programming Languages:

Python:

Strengths: Easy to learn, versatile, extensive libraries.

Weaknesses: Slower performance, dynamic typing issues.

Java:

Strengths: Faster performance, strong typing, portability.

Weaknesses: Verbose syntax, steeper learning curve.

3. Compilation vs Interpretation:

Compilation:

* Converts the entire code to machine code before execution.

* Faster execution, early error detection.

Interpretation:

* Translates and executes code line-by-line at runtime.

* Easier debugging, slower execution.

4. Flowchart for Calculating Factorial.

1) Start

2) Input number (n)

3) Initialize result = 1

4) Set i = 1

5) Loop (i <= n):

6) Multiply result by i

7) Increment i by 1

8) End Loop

9) Print result

End

5. Function to Calculate the Area of a Rectangle (in Python)

```python
def area(length, width):
    area = length * width
    return area
```

```python
length = float(input("Enter the length of the rectangle: "))
width = float(input("Enter the width of the rectangle: "))

result = area(length, width)
print(f"The area of the rectangle is: {result}")
```