Date:

Q Create pseudocode to subtract 2 numbers without using the - operator.

```
START

// Input/output
INPUT A
INPUT B
// Processing Steps
Comp B = NOT B + 1
ANS = A + Comp B

PRINT ANS

END.
```

Q. Develop a pseudocode for a basic calculator that performs multiplication and division. The pseudocode should prompt the users for 2 numbers and an operator, the display the result of the operation.

```
START

INPUT Num1
INPUT Num2
INPUT Operator
```

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```
IF Operator == *
  Product = Num1 * Num2
  PRINT PRODUCT
ELSE IF Operator == /
      IF Num2 == 0
       PRINT "Division is not possible"
       RETURN
ELSE Quotient = Num1 / Num2
PRINT Quotient

END.
```

2 Write pseudocode to find the smallest no. among 3 given variables. Implement a decision making structure to compare the variables.

```
START

INPUT Num1
INPUT Num2
INPUT Num3

IF Num1 > Num2
    IF Num1 > Num3
    PRINT "Num1 is the greatest number"
```

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ELSE IF Num2 > Num3
    PRINT "Num2 is the greatest number"
ELSE
    PRINT "Number 3 is the greatest number"

END.

Q Develop an algorithm that takes 2 numbers as input and finds the Greatest Common Divisor (GCD) of the 2 numbers using the Euclidean algorithm.

1. Ask user to enter a non-negative number "a"
2. Ask user to enter a non-negative number "b"
3. If b > a, switch their values.
4. While b ≠ 0, do following
   i) Remainder = a % b
   ii) Assign the value of b to a
   a = b
   iii) Assign remainder to b
   b = remainder.
5. Check if b = 0. If not, go back to step 4.
6. Display a as GCD.

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Q Write an algorithm whether a number is a prime number. The algorithm should iterate through possible divisors and determine if the number has any divisors other than 1 and itself.

1. Ask user to enter a number "num"
2. If num $\leq$ 1 ; display "not prime"
3. If num = 2, display "prime"
4. If num % 2 == 0, then display "not prime"
5. For i to $\sqrt{num}$
   If num % i == 0, display "not prime"
6. If not, display "prime"