Assignment 1

Q1:- Check the given no. is even or odd.

Ans.

```
        ( Start )
            |
            v
        / Input: n /
            |
            v
False   < n ; rem >   True
  <------  2  = 0  ------>
  |                        |
  v                        v
/ Odd /                / Even /
  |                        |
  +------> ( End ) <-------+
```
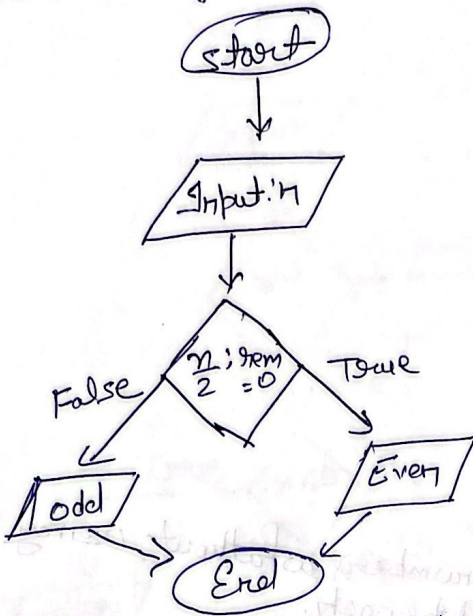
Q2:- Write a Java program to find factorial of a given no.

```
            ( Start )
                |
                v
        / Read numb. /
                |
                v
        | fact = 1   |
        | i = 1      |
                |
                v
        < i <= num >  ---------> False
                |                    |
                v True               |
        | fact = fact × i |          |
                |                    |
                v                    |
        | i = i + 1 |                |
                                     |
/ Displ. fact /   ( ... ) <---------+
     |
     v
  ( end )
```
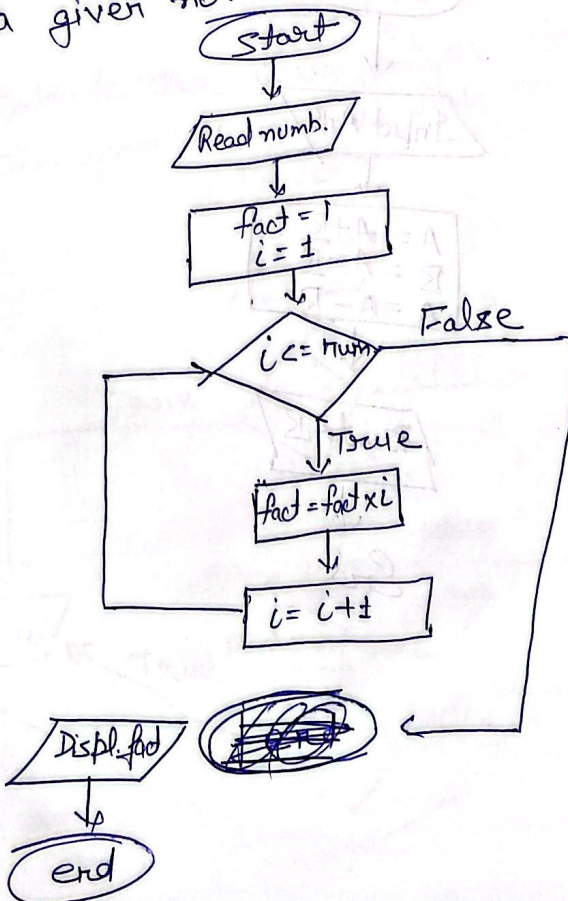
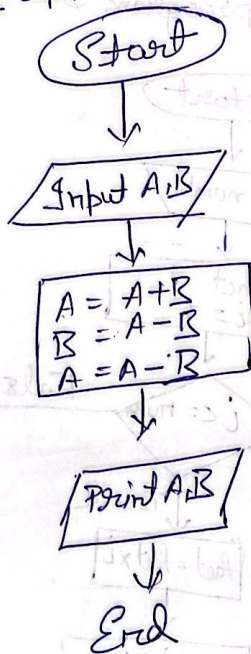**Q.3:-** Find factorial of a number using recursion.

Ans

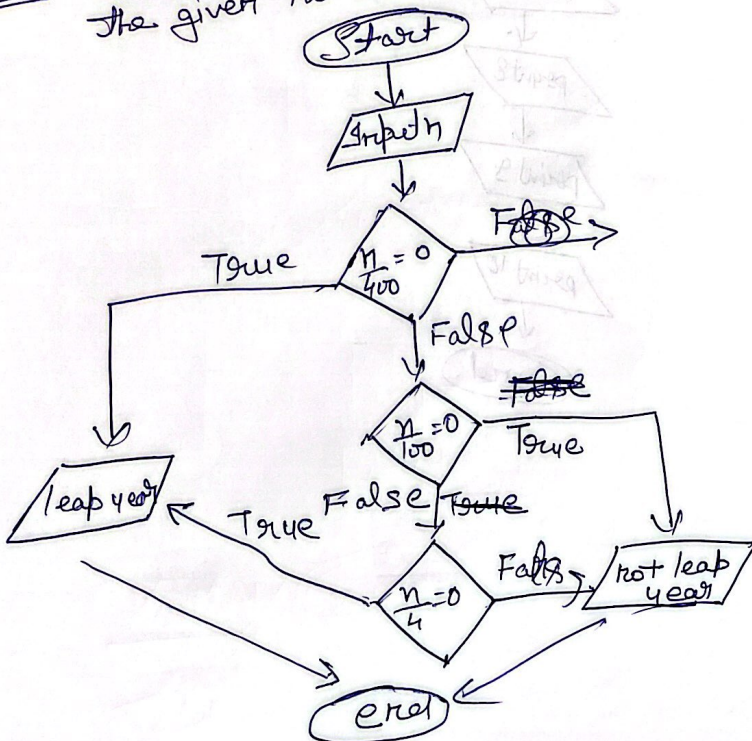**Q-4:-** Swap two numbers without using third variable approach.

Ans:-

```
        ( Start )
            |
            v
      / Input A,B /
            |
            v
      | A = A+B |
      | B = A-B |
      | A = A-B |
            |
            v
      / Print A,B /
            |
            v
          End
```

Q5:- How to check whether the given no. is positive or negative in Java.

Ans:-

```
          ( Start )
              |
              v
         / Input n /
              |
              v
           < n>0 >  ---- True ----> / positive /
              |
            False
              |
              v
  True ---- < n<0 >
   |           |
   v         False
/ Negative /    |
   |            v
   |         / zero /
   |            |
   +----------> ( End )
```
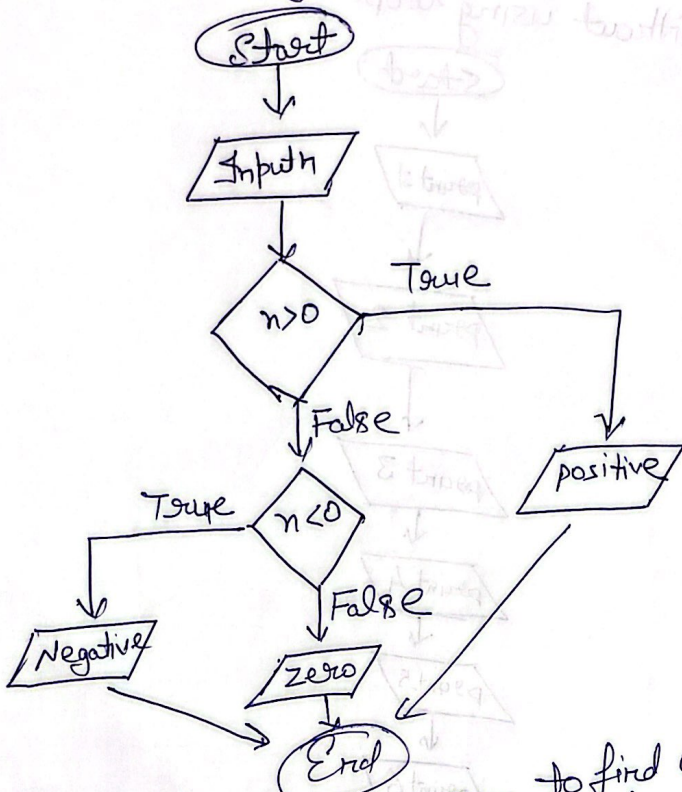
Q6:- Write the Java program to find wether the given no. is leap year or not.

```
              ( Start )
                  |
                  v
             / Input n /
                  |
                  v
   True ----- < n = 0 > ---- False
    |           400
    v            |
 / leap year /  False
    |            |
    |            v
    |      < n = 0 > ---- True
    |         100            |
    |          |             |
    |        False           |
    |          |             v
    |   True  <  n = 0 > ---- False ---> / not leap year /
    |          |    4
    |        False
    |          |
    +--------> ( end ) <------
```

Q-7 Write Java program without using loop.

Ans:-

```
Start
  ↓
print 1
  ↓
print 2
  ↓
print 3
  ↓
print 4
  ↓
print 5
  ↓
print 6
  ↓
print 7
  ↓
print 8
  ↓
print 9
  ↓
print 10
  ↓
end
```
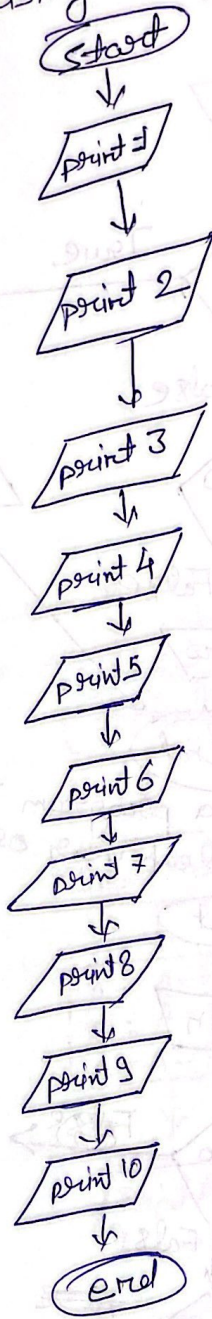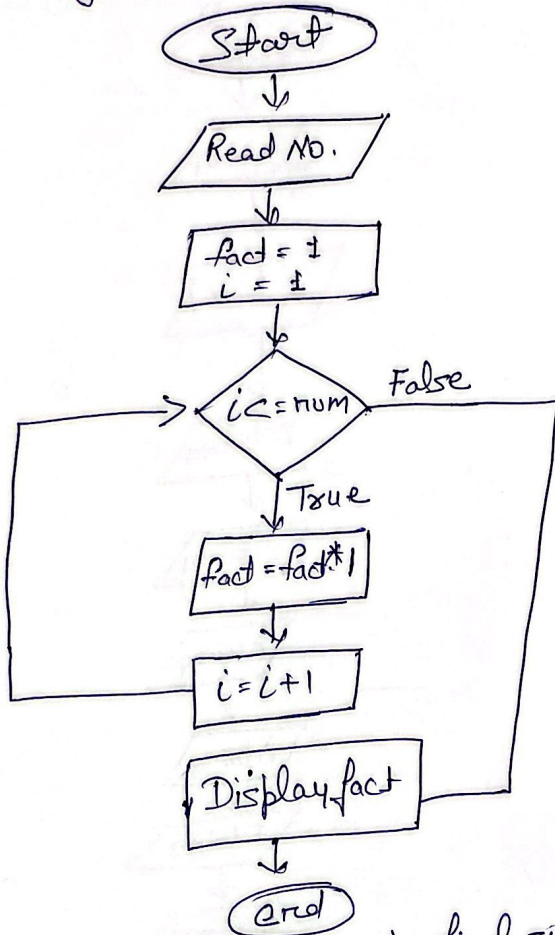
Q8:- Write Java Program to print digits of a given Number.

Ans:-
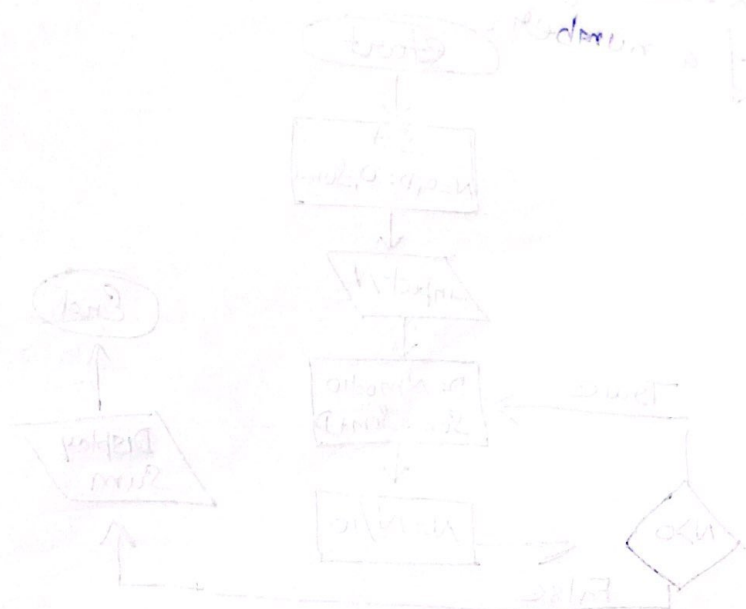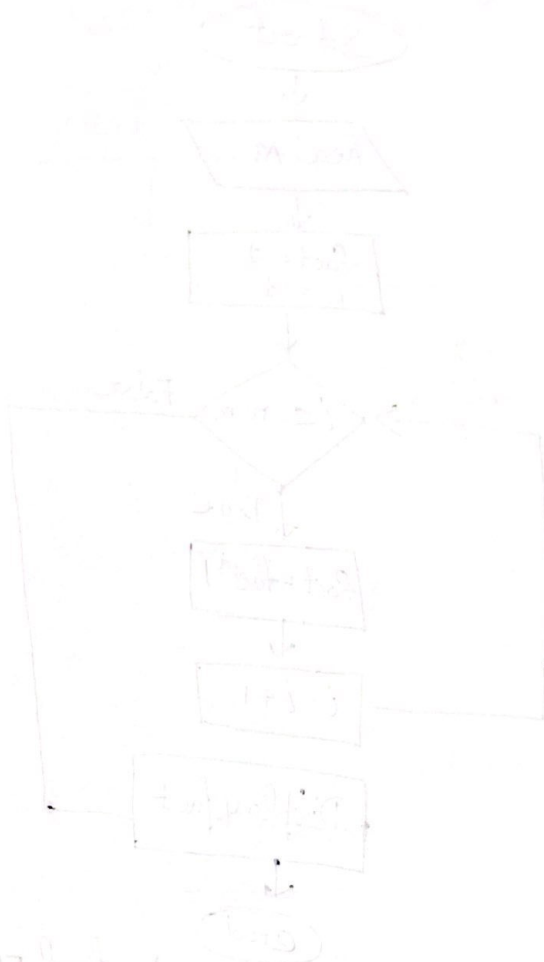
Q9 :- Write a Java program to print all the factors of the Give number.

A₄

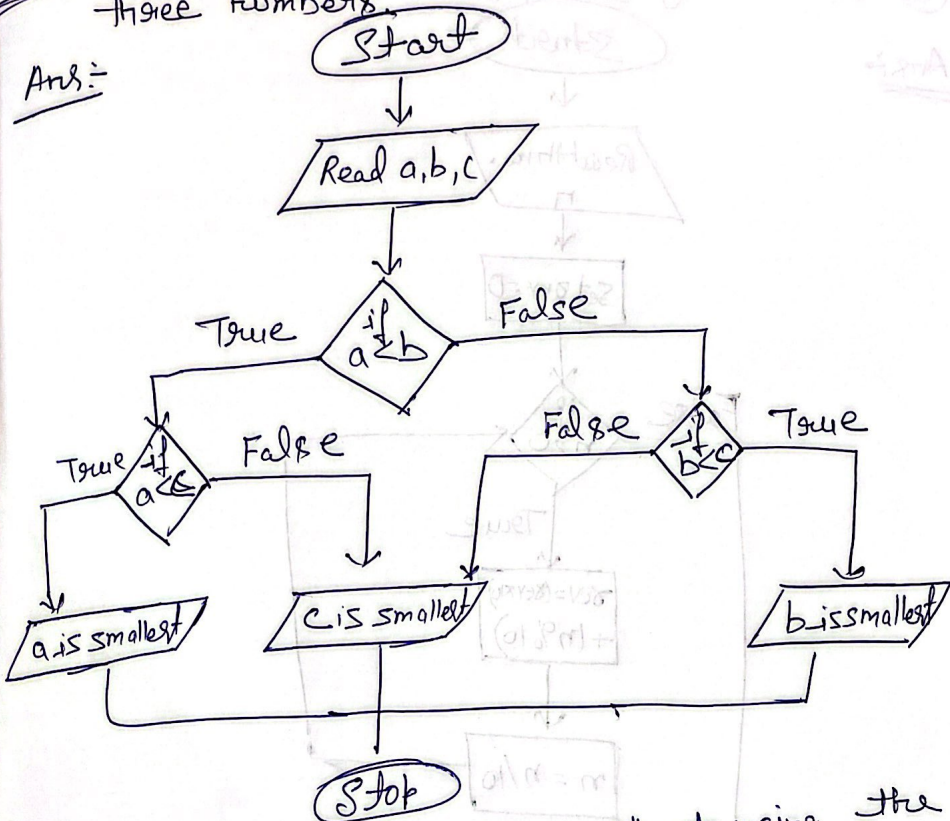Start
↓
Read NO.
↓
fact = 1
i = 1
↓
i<=num — False
↓ True
fact = fact*1
↓
i = i+1
↓
Display fact
↓
End

Q10 Write a Java program to find sum of digits of a number.

Start
↓
Set
N=0, D=0, Sum=0
↓
input N
↓
True → D = N mod 10
Sum = Sum+D
↓
N = N/10
N>0
False

Display
Sum
↑
End
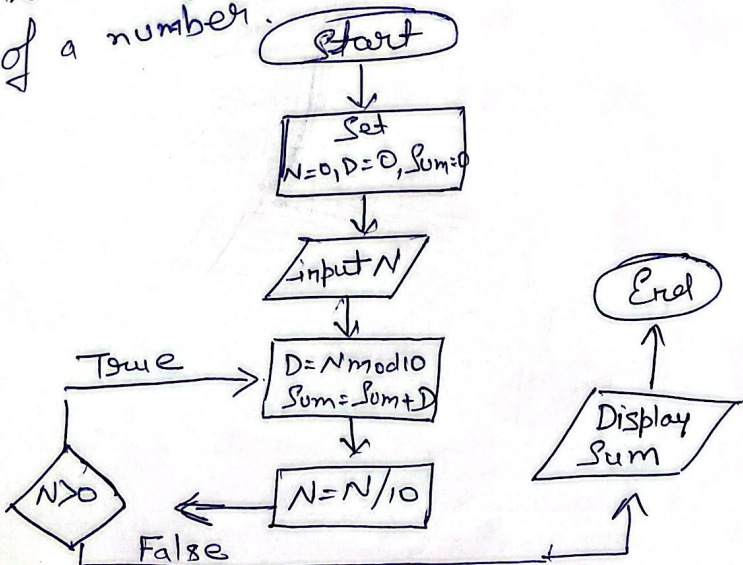
Q11 :- Write Java program to find smallest of three numbers.

Ans :-

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         ↓
                 ╱────────────────╲
                ╱   Read a, b, c    ╲
               ╱────────────────────╲
                         ↓
          True        ◇ if      False
        ┌────────────  a < b  ────────────┐
        ↓              ◇                   ↓
   True ◇ if  False              False ◇ if  True
   ┌──  a < c ──┐              ┌──  b < c ──┐
   ↓            ↓              ↓            ↓
╱──────────╲ ╱──────────╲  ╱──────────╲ ╱───────────╲
│a is smallest│ │c is smaller│          │b is smallest│
╲──────────╱ ╲──────────╱              ╲───────────╱
        └──────┬───────────────────────────┘
               ↓
          ┌─────────┐
          │  Stop   │
          └─────────┘
```

Q12 :- How to add two numbers without using the arithmatic operators in Java?

Ans .-

(17) Write a Java program

Ans:-

Start
↓
Read th no.
↓
Set rev = 0
↓
if n > 0 ← (False on left)
→ True
↓
rev = (rev × 10) + (n % 10)
↓
n = n / 10
↓
Print reverse no. stored in rev
↓
End
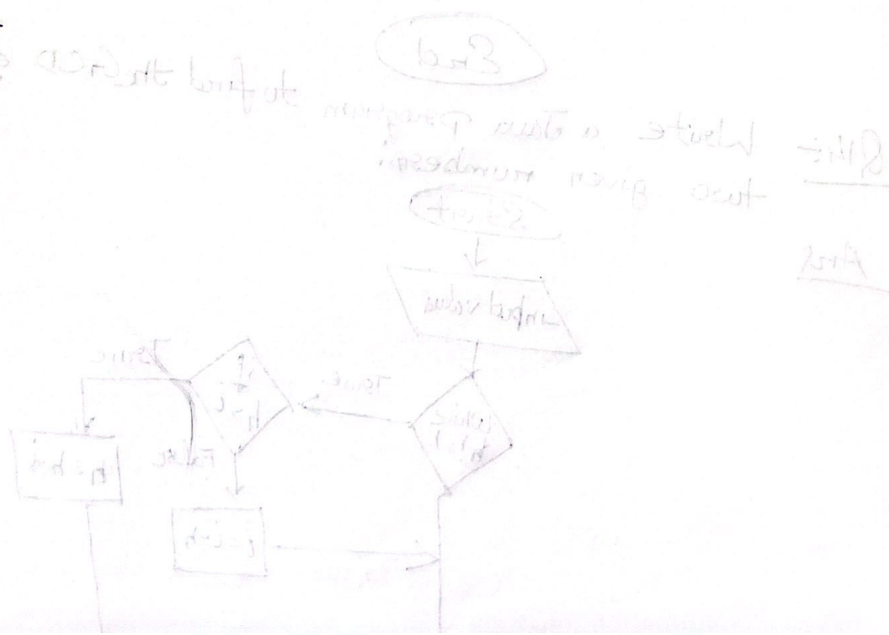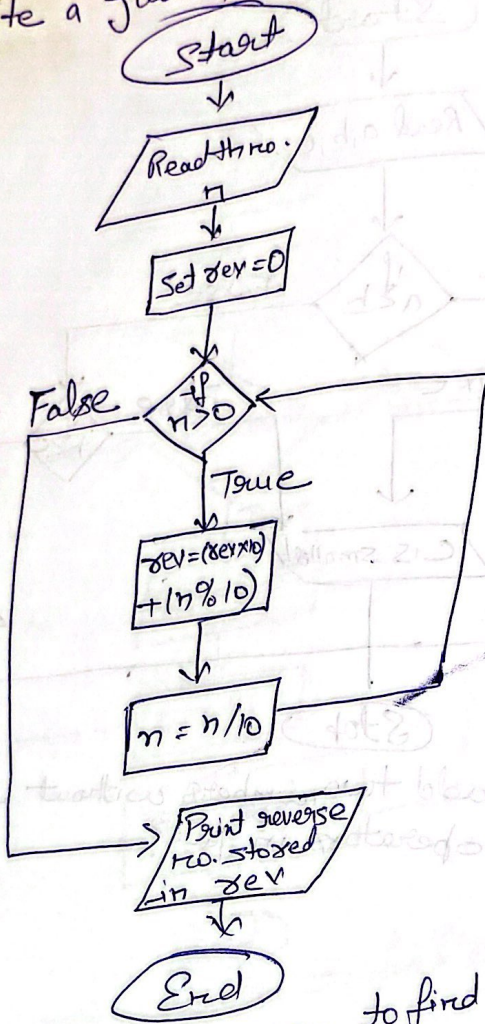
Q14:- Write a Java program to find the GCD of two given numbers.

Ans

Start
↓
input value
↓
While h != i → True → if: h > i → True → h = h - i
↓ (False)
i = i - h
↓
Display
↓
End
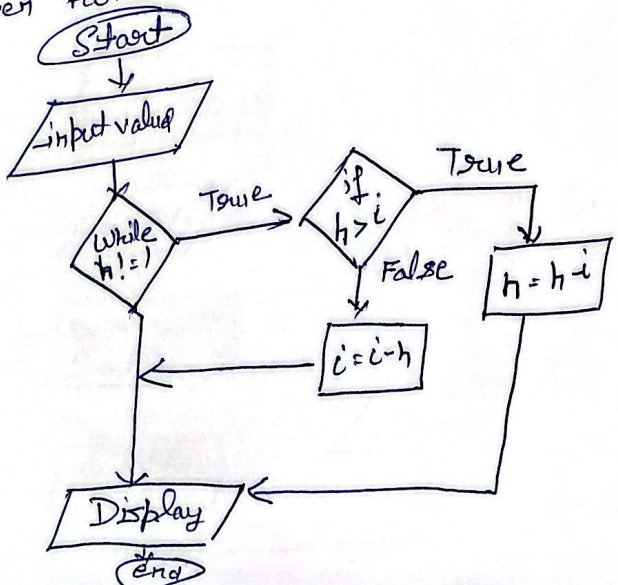
Q15 :- Write a Java program to find LCM of Two given numbers.

Ans :-