1- Draw a flow chart to add two numbers entred by user

```
    ( Start )
        |
   /  none   /
   /  ntwo  /
        |
  [ R = none + ntwo ]
        |
      [ R ]
        |
   ( Fhish )
```
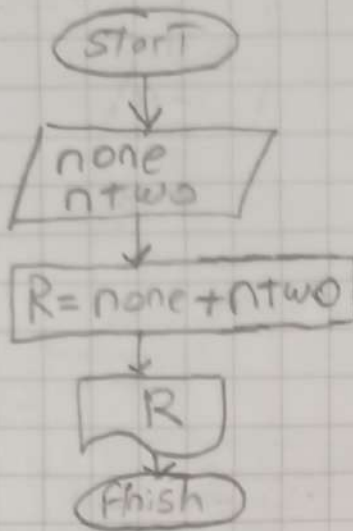
2- Calculate the area of a circle with given Radius

```
    ( Start )
        |
    /  Rad  /
        |
 [ Area = Rad * Rad * π ]
        |
    [ Area ]
        |
   ( finish )
```
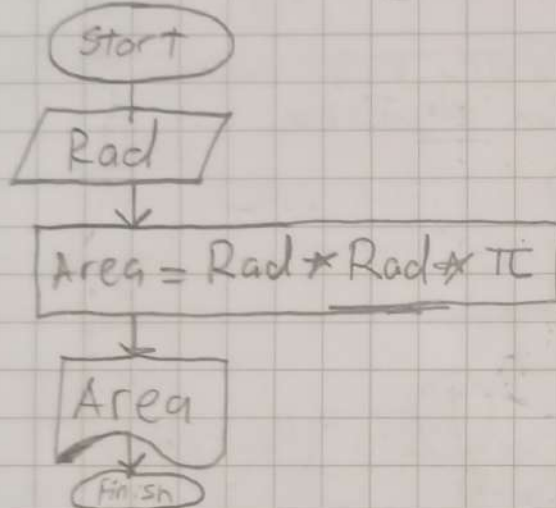
3- Determine and Output whether Number N is even or odd

```
    ( Start )
        |
     [  N  ]
        |
   [ X = N %2 ]
        |
   F  < X!=0 >  T → [ "N" is odd number ]
   |                      |
[ "N" is even number ]    |
        |_____|
             |
         ( finish )
```
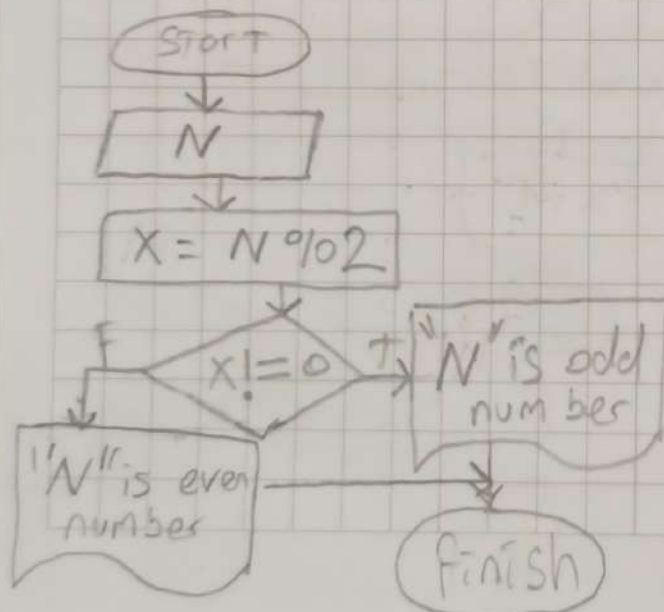
4- Determine Whether a temperature is Below or Above the freezing Point.

```
      ( Start )
          |
      / Temp /
          |
   < temp<0 || Temp==0 >  T → [ Temp" is Below the freezing Point ]
          | F                        |
  [ Temp' is Above the Freeing Point ]    |
          |_____|
                    |
                ( Finish )
```
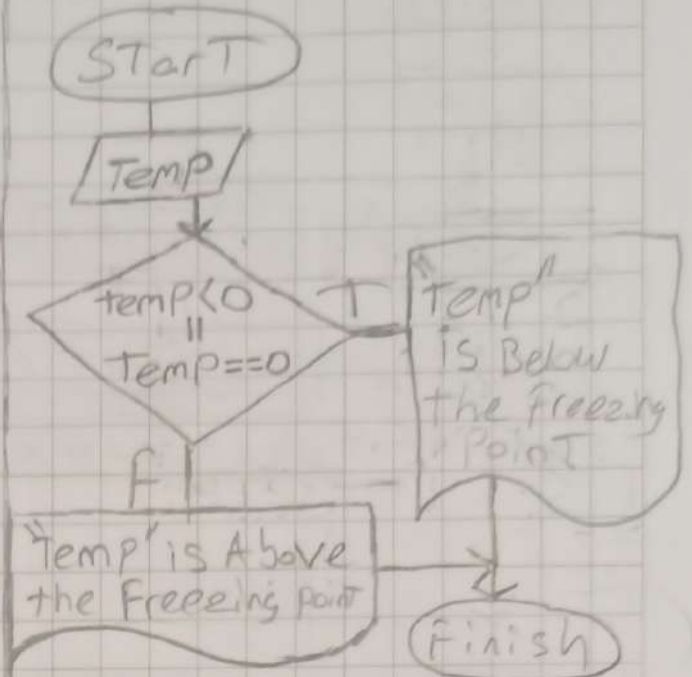
5- Convert Temperature from Fahrenheit (°F) to Celsius (°C)

```
    ( Start )
        |
     /  F  /
        |
  [ C = 5/9 * (F-32) ]
        |
     [ C ] → ( finish )
```
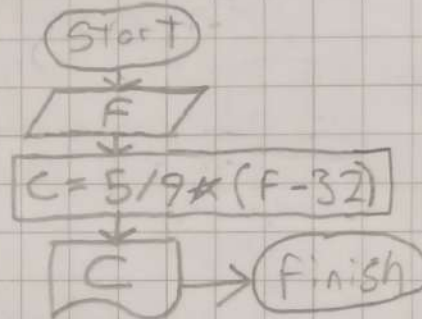
6- Draw a Flow chart to convert the length in Feet to centi meter

```
    ( Start )
        |
     /  F  /
        |
  [ CM = F * 30,48 ]
        |
     [ CM ]
        |
   ( finish )
```
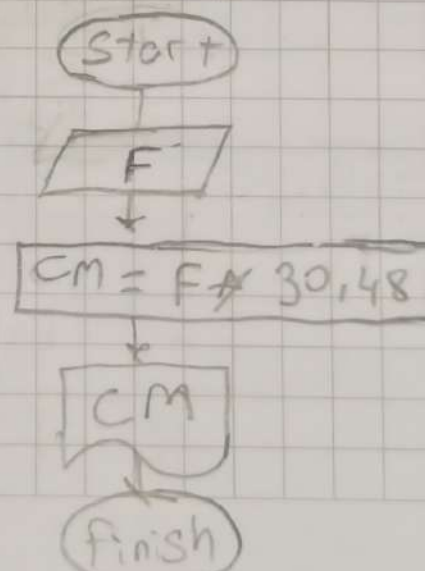
7- Draw a Flowchart to Print the Square of all numbers from 1 to 10

Start
C = 1
R = C * C
R
C != 11 → F → finish
C != 11 → T → C++
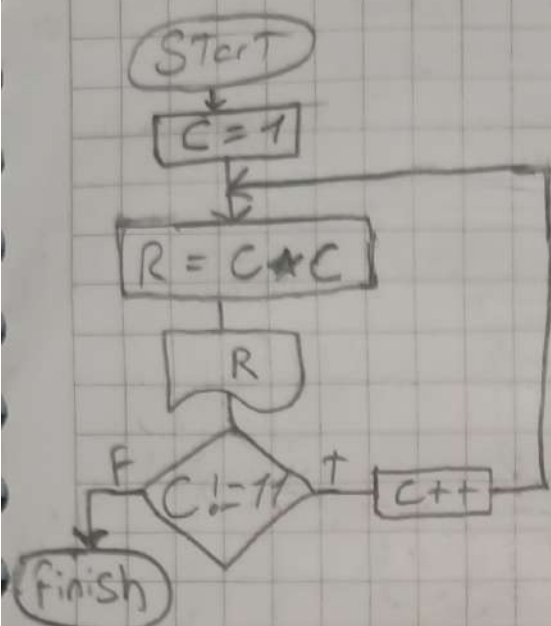
8- Draw a Flowchart To Print the sum of numbers From LOW to HIGH. Test with LOW = 3 and HIGH = 9

Start
low, high
low > high
X = low
low = high
high = x
f
Z = low
low = low + Z + 1
Z != high → T → Z++
Z != high → F
low → Print

9- draw a Flowchart to print all numbers between low and High that are divisible by Number

Start
low, High
N
low > high → T → X = low, low = high, high = x
low > high → f
R = low % N
R == 0 → T → R
low != high → T → low++
low != high → F
Finish
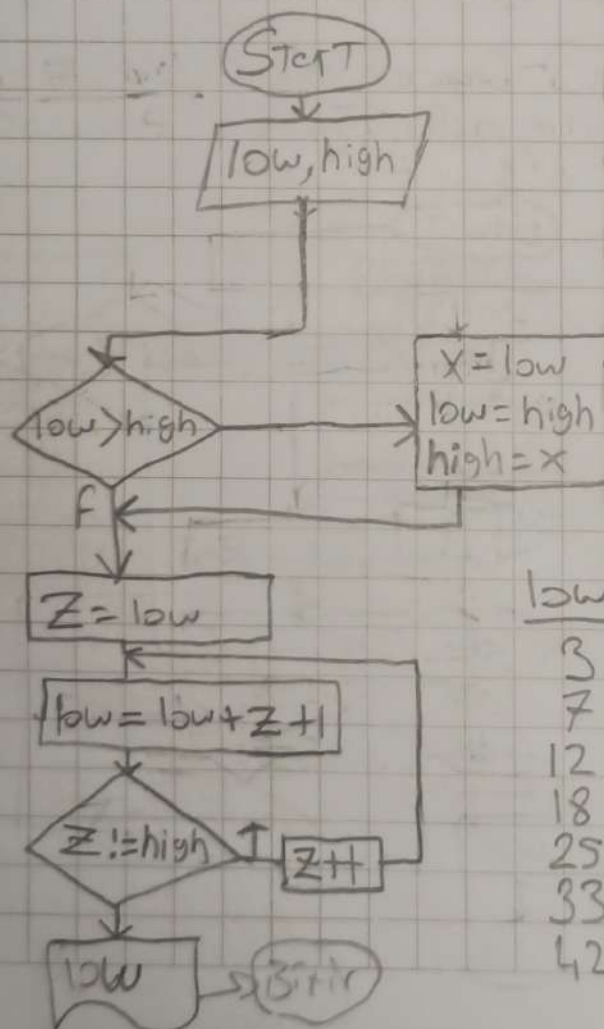
low	Z	high
3	3	9
7	4	9
12	5	9
18	6	9
25	7	9
33	8	9
42	9	9
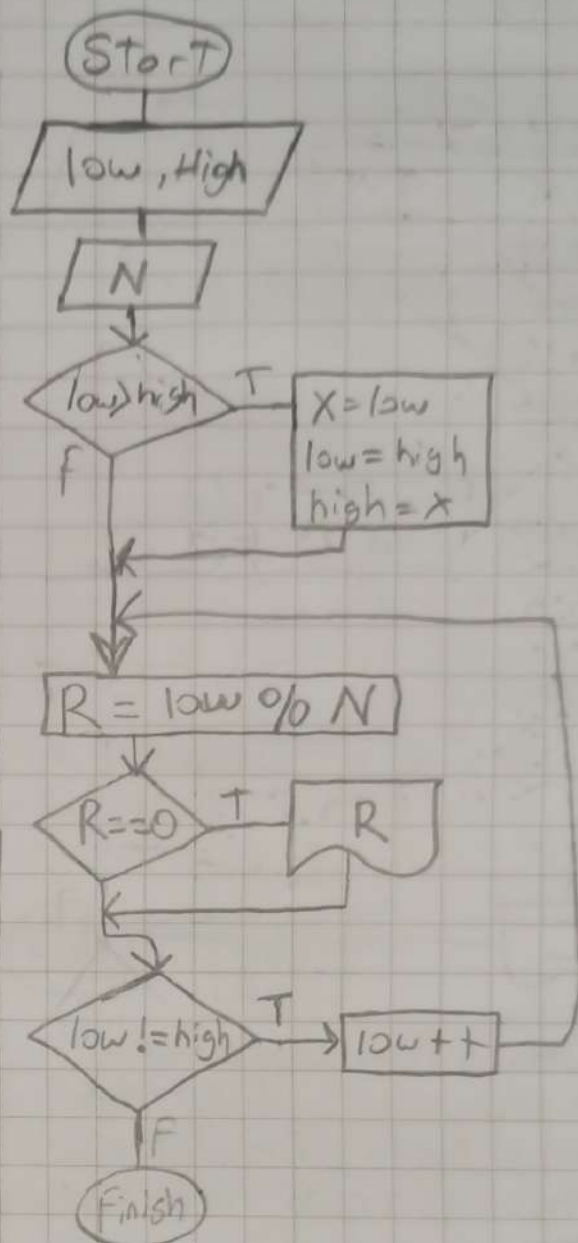
10- Draw a flowchart To find largest of Three numbers A, B and C

Start

A, B, C

A>B && A>C → T → A

B>C && B>A → T → B

A==B → T → A

C

Finish
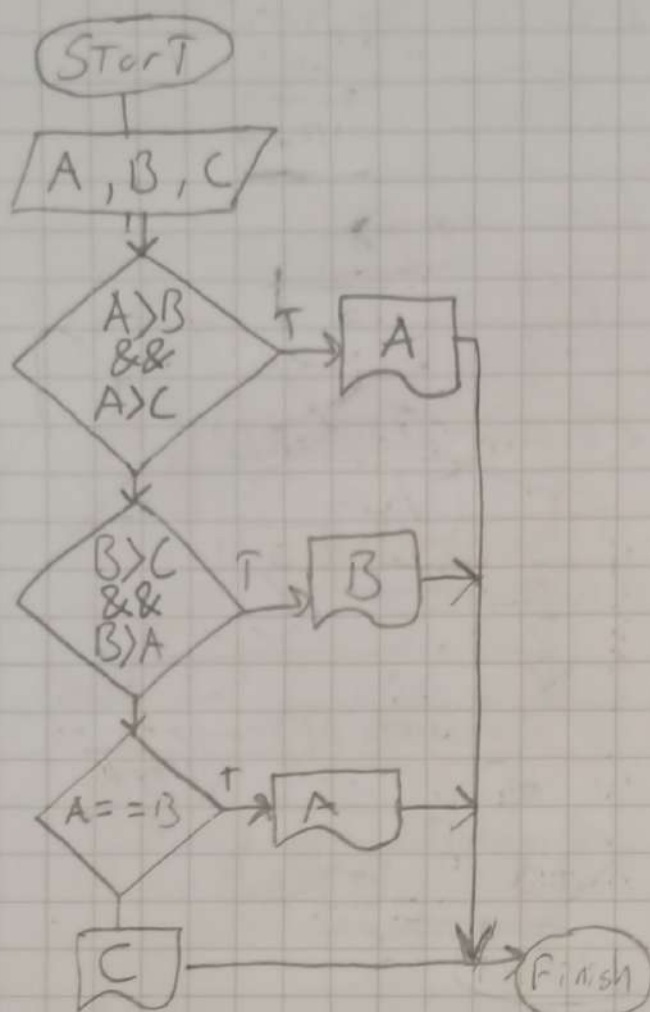
11- Draw a Flowchart for a program that reads 10 numbers from user and prints out their sum, and their product

Start

C=0

C!=11 → T → N → Sum+=N
C++

Sum

Finish
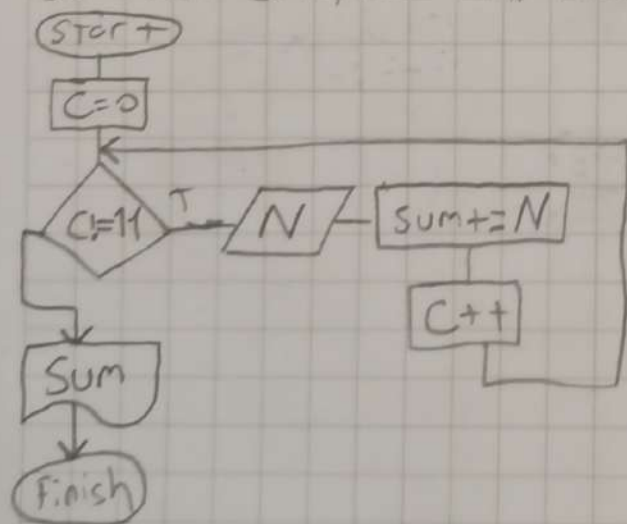
12- Draw a Flowchart to count and print all numbers from low to High by steps by steps (test with low=0 high=100 and step 5

C=0

low, High

STEP

low<=high → T → low
C++
low+=STEP

F

C → end
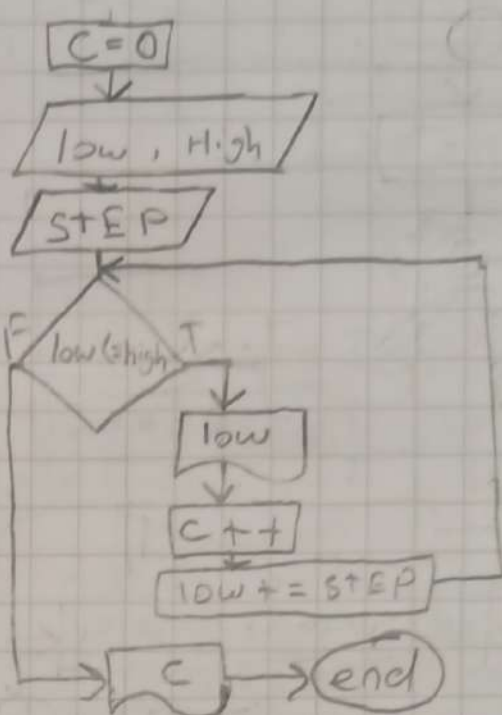
13- Draw a flowchart To print the multiplication Table for 6's

Start

X=1

R=6*X

R

X==10 → X++

F

finish
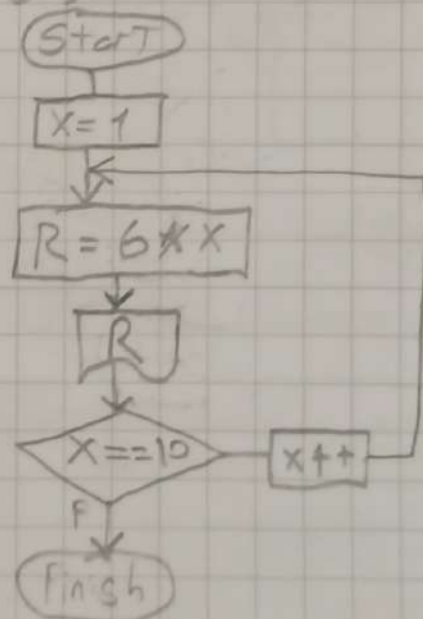
14 - Draw a flowchart for computing factorial N (N!)

```
Start
  ↓
 /N/
  ↓
X = N-1
  ↓
N = N * X
  ↓
X != 1 ── X--
  ↓ (below)
 N ── Finish
```

15 - Draw a flowchart to print all natural numbers reverse (from n to 1)

```
Start
  ↓
 /n/
  ↓
n < 0 || n == 0
  F↓        T→ 0
n == 1
  F         T → 1
  ↓              ↓
  n            end
  ↓
 n--
```
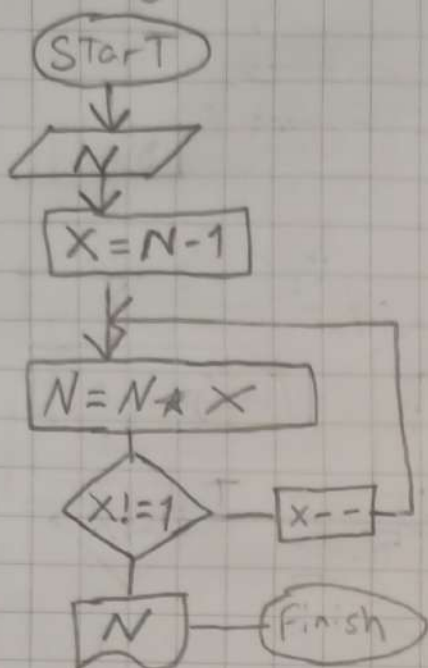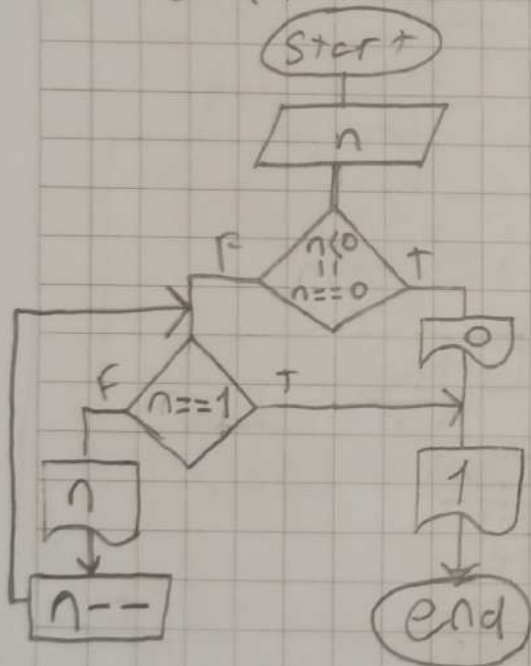
16 - Design an algorithm which Generates even numbers between 1000 and 2000

```
Start
  ↓
N = 1000
  ↓
  N
  ↓
N == 2000 ─T→ end
  ↓
N += 2
```
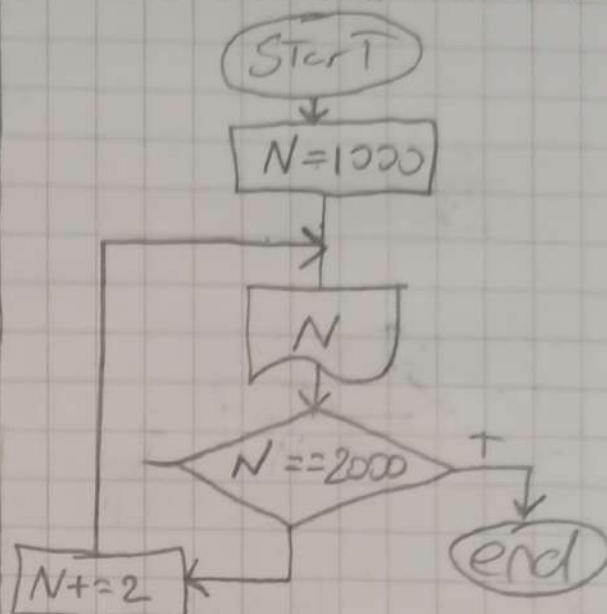
17 - Design an algorithm with a natural number, n, as its input which calculates the following formula and writes the result in the standard output: $S = 1/2 + 1/4 + \cdots + 1/n$

```
Start
  ↓
X = 2
S = 0
  ↓
 /n/
  ↓
S = 1/x + 1/x+2
  ↓
X+2 == n
  f↓        
X += 2      → S
              ↓
             end
```
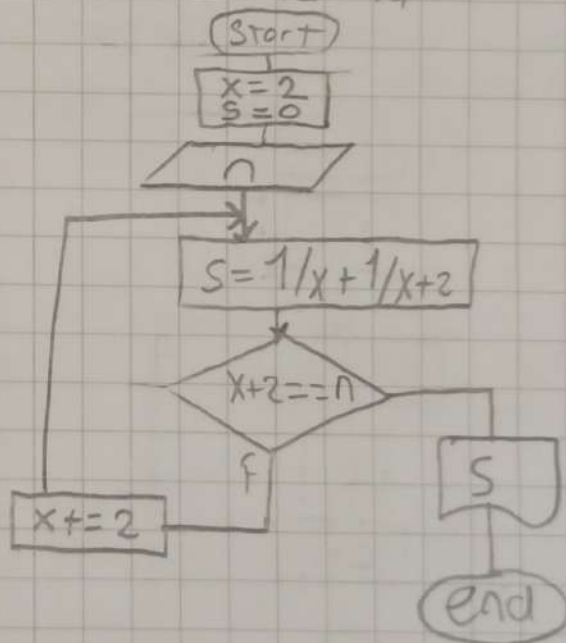
18- Design an Algorithm To convert a decimal number, n, To binary format

Start

n

$Q_1 = 1$

$Q_1 > 0$ F / T

F → end

T → $Q_1 = n/2$

$R_1 = n\%2$

$n = Q_1$

R_1

We Have To Reverse "R_1" number
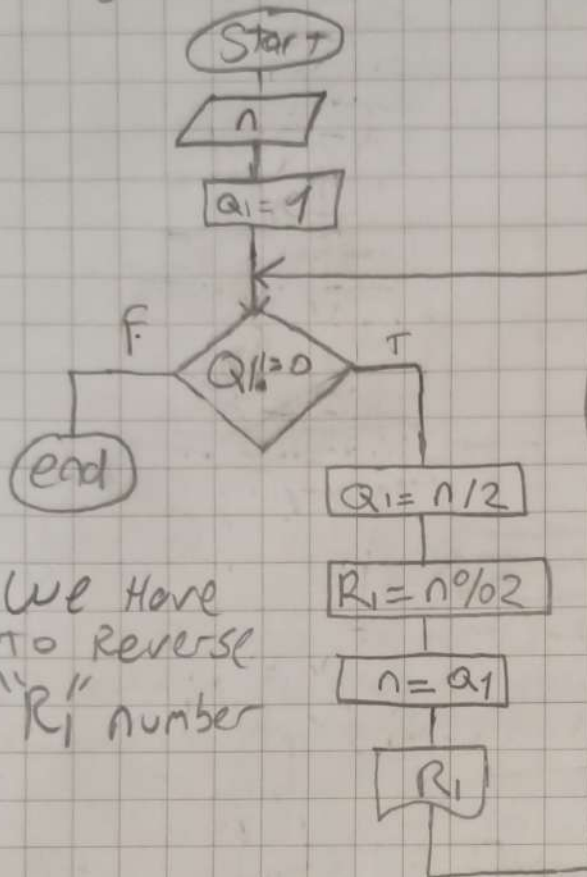
19- Draw a Flowchart to print multiplication Table of any number

Start

$C = 1$

n

$R = n * C$

R

$C++$

$C < 11$ F

F → end
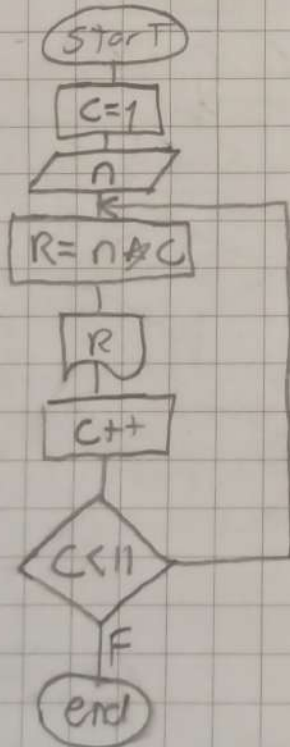
20- Draw a Flowchart to count number of digits in a number

Start

n

$C = 1$

$X = 10$

$n/x > 0$ F / T

F → C → end

T → $C++$

$X *= 10$
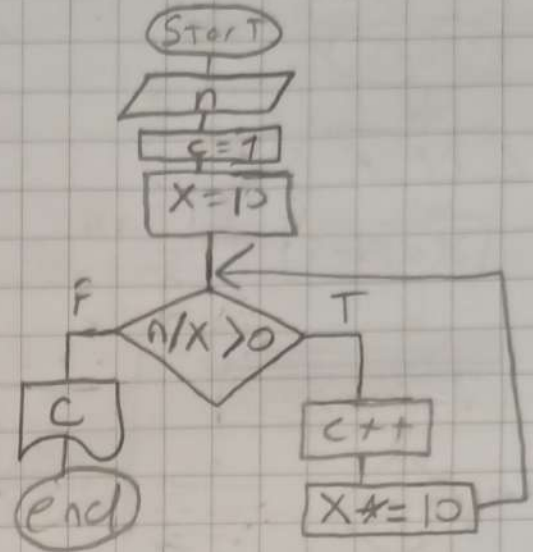
21- Draw a flowchart To Find First and last digit of a number

Start

n

$X = 10$

$L = n/x$

$L > 0$ F / T

T → $X *= 10$

F → $L = n\%X$

$L = n - L$

$L = L/X$

$F = n\%10$

L

F

end
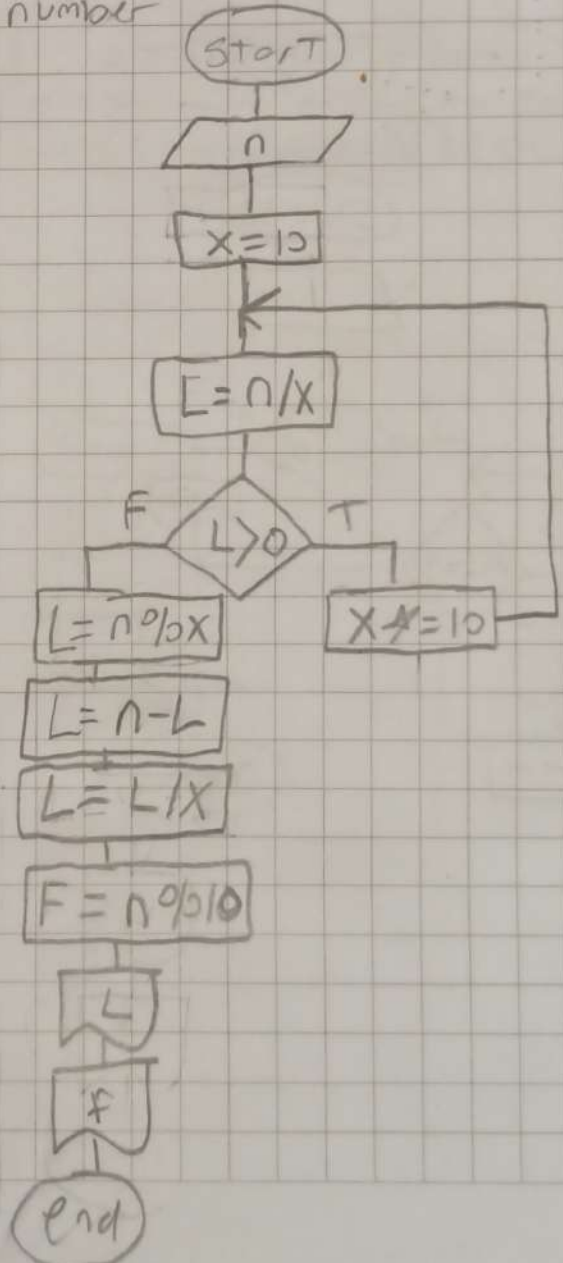
22 - Draw a Flowchart to swap first and last digits of a number

```
        ( Start )
           |
         / n /
           |
        [ C = 1 ]
           |
        [ X = 10 ]
           |
           |<--------------------------+
           v                           |
        [ B = n / X ]                  |
           |                           |
      F  / B > 0 \  T                  |
    +-----<       >------+             |
    |      \     /       |             |
    |                 [ X *= 10 ]      |
    |                    |             |
    |                 [ C++ ]----------+
    v
[ Z = n % X ]
    |
[ L = n - Z ]
    |
[ L = L / X ]
    |
[ F = n % 10 ]
    |
[ R = F * X ]
    |
[ R = R + Z ]
    |
[ R = R - F ]
    |
[ R = R + L ]
    |
  / R /
    |
 ( end )
```
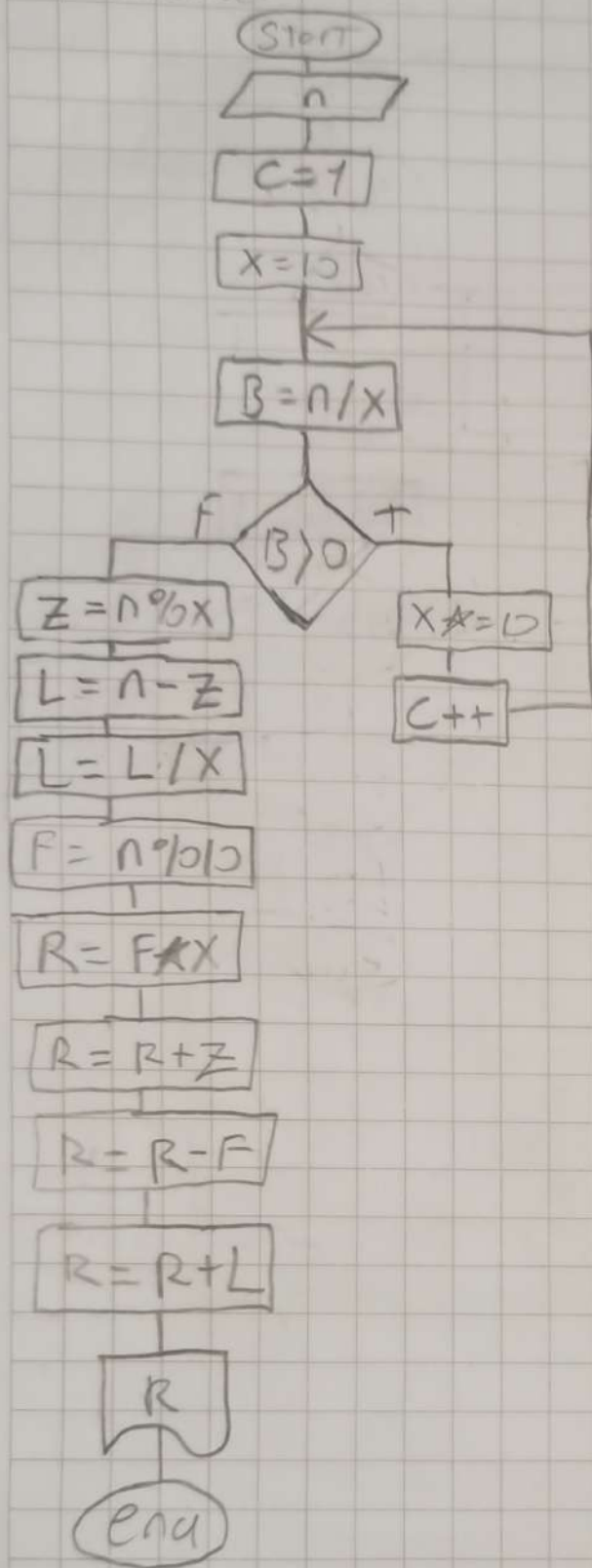
23 - Draw a Flowchart to check whether a number is palindrome or not

```
        ( Start )
           |
         / N /
           |
        [ a = 0 ]
           |
           |<----------------[ a++ ]
           v                     |
      / N >= 1 \  T           [ N = N / 10 ]
     <          >----------------+
      \        /
           |  <----------------[ a-- ]
           v                           |
   [ X = N % 10          ]             |
   [ y = N / 10^(a-1)    ]             |
           |                           |
       / y = x \  T                    |
      <         >------[ a-- ]---------+
       \       /
        F |
          v
   [ N = N - (10^a)^y  ]
   [ N = (N - X) / 10  ]
          |
          v
 ( end )--<-----+----/ N >= 10 \
                      \        /
```
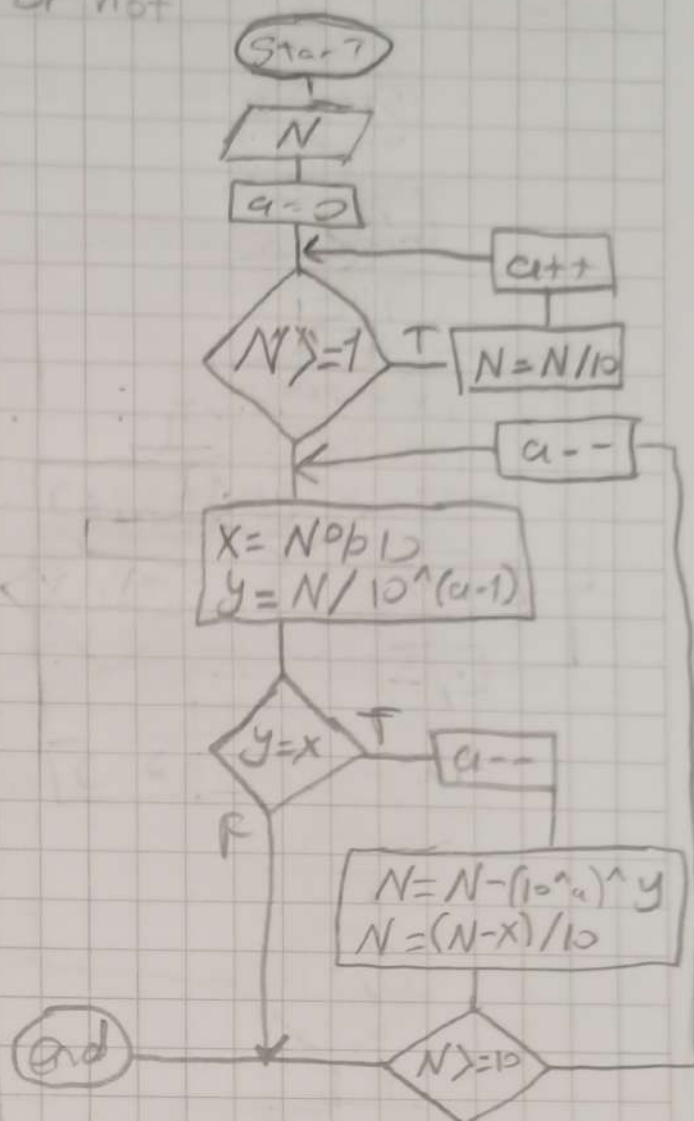
24- Draw a Flowchart to
Find Frequency of each
digit in a given integer

```
        ( Start )
           |
         / N /
           |
         a = 0
           |
       X = N%10
           |
      r = X * (10^a)
           |
          / r /
           |
        N = N-X
        N = N%10
           |
         a++
           |
        < r >= 1? >
           |  F
      r = r * (10^a)
           |
          / r /
           |
        ( end )
```
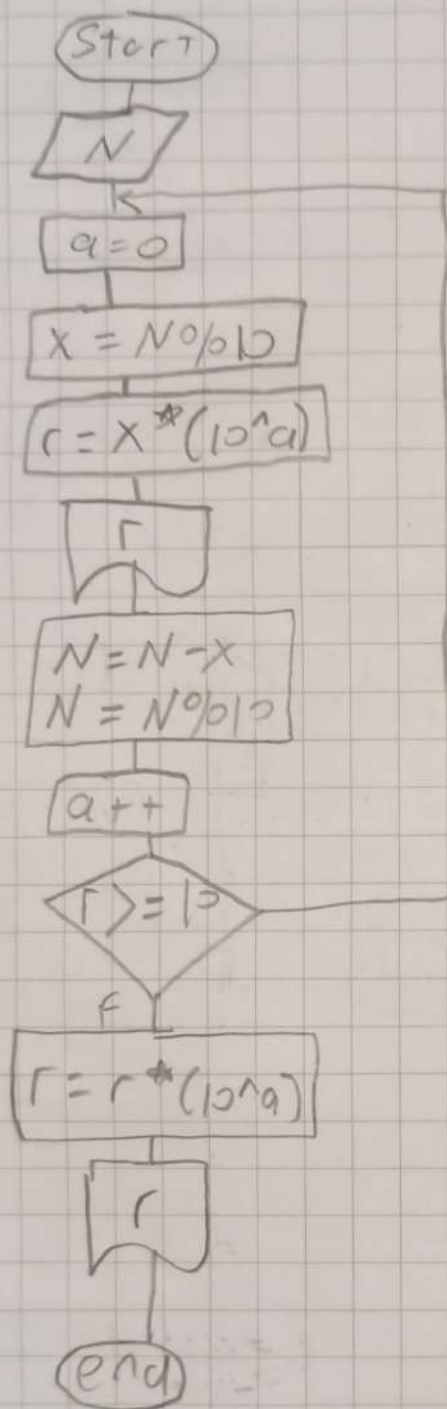
25. Draw a Flowchart To Find
HCF OF two numbers

```
         ( Start )
            |
         / a, b /
            |
    F     < a > b >
  r = a
  a = b       |
  b = r       |
            X = b
            |
       < a%b != a >  → [ b-- ]
            |  F          T
       < x%b != a >
            |  F
          / b /
            |
         ( end )
```