write Algorithms and Flowcharts.

Assignment - 1

I] a) Find the Average of three Numbers a, b, and C.
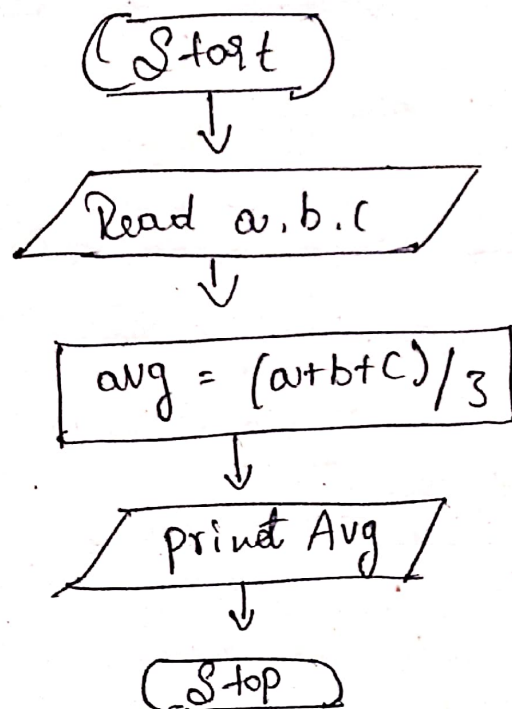
Algorithm

Step 1 :- Start.

Step 2 :- Read three Input for calculating the average (a, b, c) & take another variable (avg).

Step 3 :- take a average of three Numbers as like.
$$avg \leftarrow (a+b+c)/3;$$

Step 4 :- print the average

Step 5 :- END.

Flowchart

Start

↓

Read a, b, c

↓

$avg = (a+b+c)/3$

↓

print Avg

↓

Stop

1 b) Find the Area of a rectangle whose length and breadth are given.

Algorithm :-

Step 1 : Start.
Step 2 : Read Length and Breadth.
Step 3 : Area ← length * breadth.
Step 4 : print Area.
Step 5 : Stop.

Flowchart :-

```
        ( Start )
            ↓
   / Read length &  /
   /   Breadth     /
            ↓
  | Area = length * Breadth |
            ↓
   / print Area /
            ↓
        ( Stop )
```
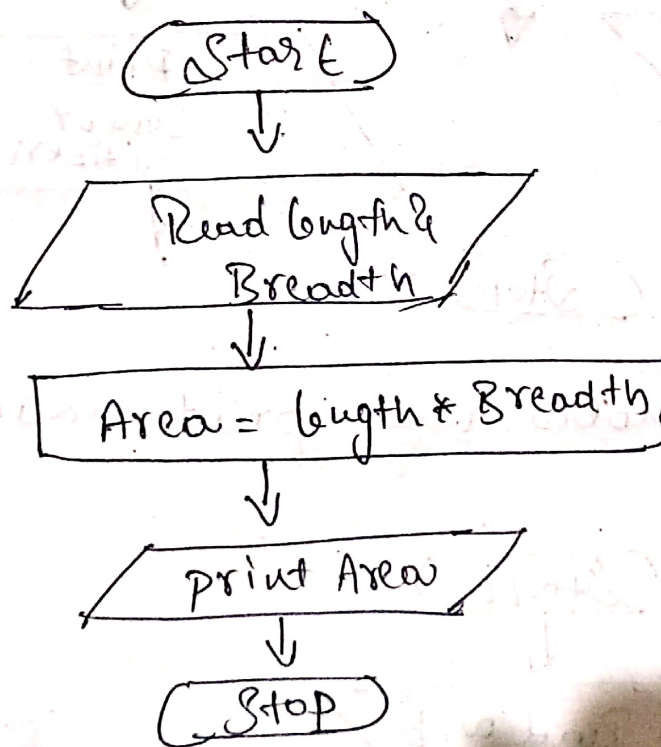
2] Draw the flowcharts for the following:

(a) Read age of a person. if age less than 60 then print "Not a senior citizen" otherwise print "Senior citizen"

```
        ( Start )
           |
           v
    / Read the Age /
           |
           v
                         False
  True  < if age < 60 >--------+
   |           |               |
   |           v               |
   v                           v
/ print          /     / print       /
/ Not a Senior   /     / Senior      /
/ Citizen        /     / Citizen     /
   |                           |
   +------> ( Stop ) <---------+
```
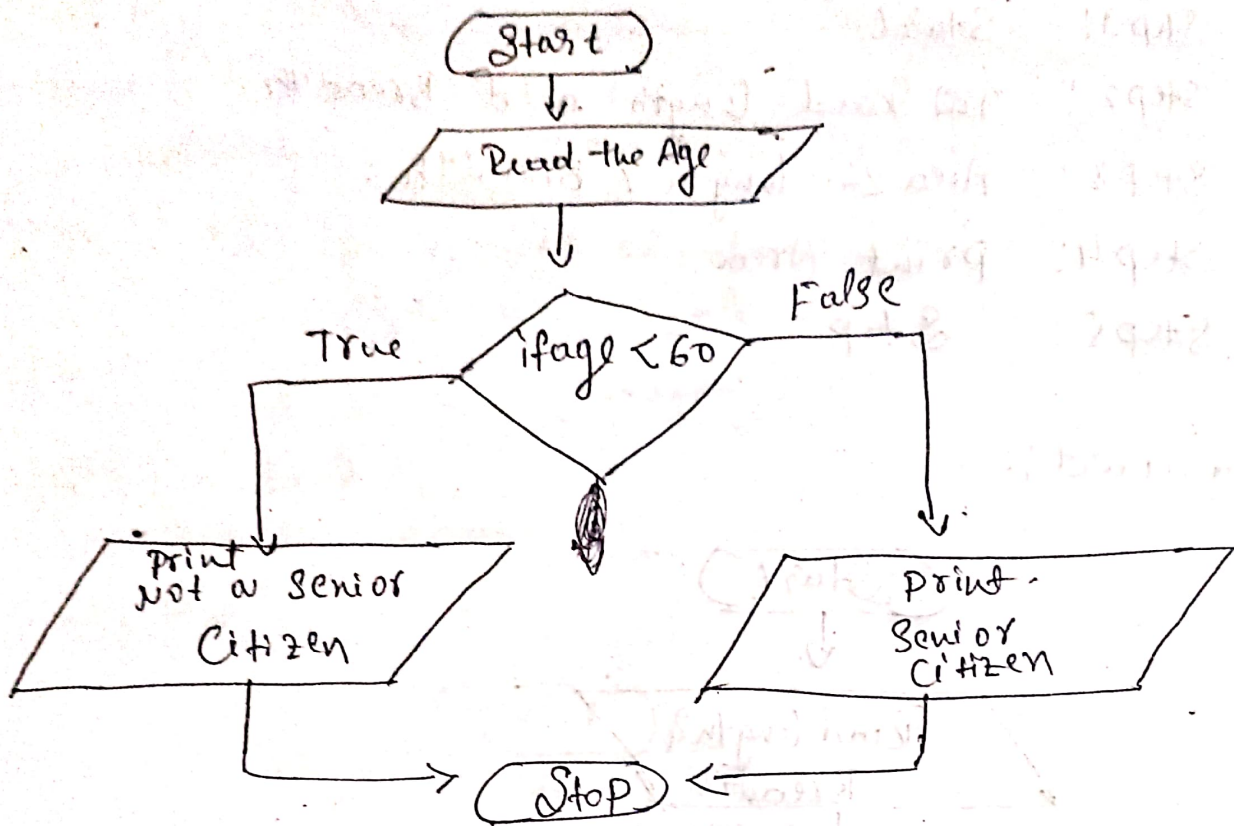
(b) Read two Numbers and print maximum of 2 Numbers.

```
        ( Start )
           |
           v
      / Read a, b /
           |
           v
  True           False
   +---< if a > b >---+
   |                  |
   v                  v
/ Print a /      / Print b /
   |                  |
   +---> ( Stop ) <---+
```
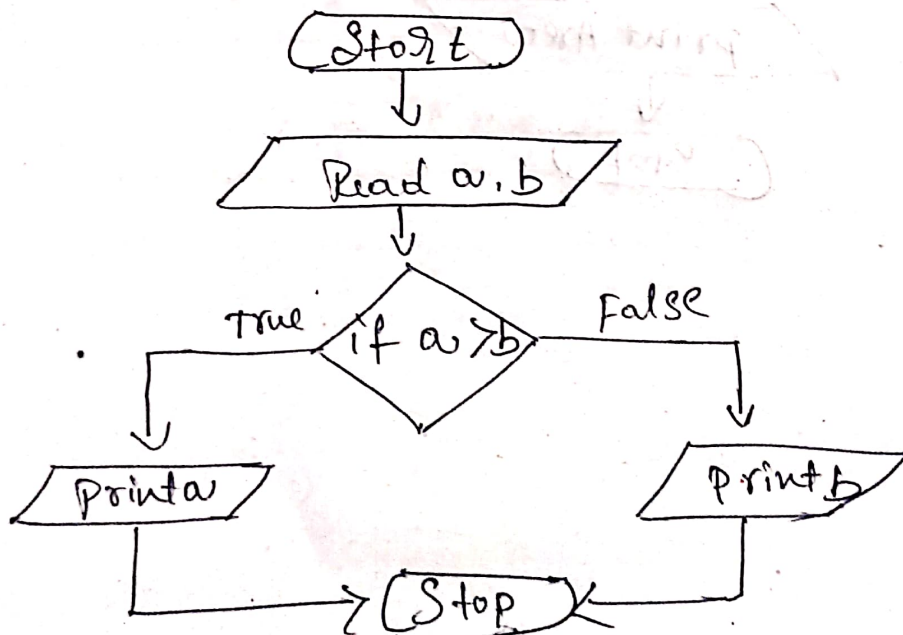
(c) Read three Numbers and print Smallest Among 3 Numbers.

```
        ┌─────────┐
        │  Start  │
        └─────────┘
             │
             ▼
    ╱─────────────────╲
   ╱ Read the Numbers  ╲
   ╲    A, B, C        ╱
    ╲─────────────────╱
             │
             ▼
      ╱───────────╲
  NO ╱     if      ╲  Yes
◄───╱     A<B       ╲───►
    ╲              ╱
     ╲───────────╱
   │                            │
   ▼                            ▼
 ╱──────╲                    ╱──────╲
╱   if   ╲  NO         NO   ╱   if   ╲
╲  B<C    ╲────►    ◄───────╲  A<C    ╲
 ╲──────╱                    ╲──────╱
   │ yes        │               │ yes
   ▼            ▼               ▼
╱──────────╲ ╱──────────╲ ╱──────────╲
│ Print 'B' is│ print 'C' is│ Print 'A' is│
│ Smallest    │ Smallest    │ Smallest    │
│ Number      │ Number      │ Number      │
╱──────────╱ ╱──────────╱ ╱──────────╱
     │           │            │
     └───────►   ▼   ◄────────┘
             ┌─────────┐
             │  Stop   │
             └─────────┘
```
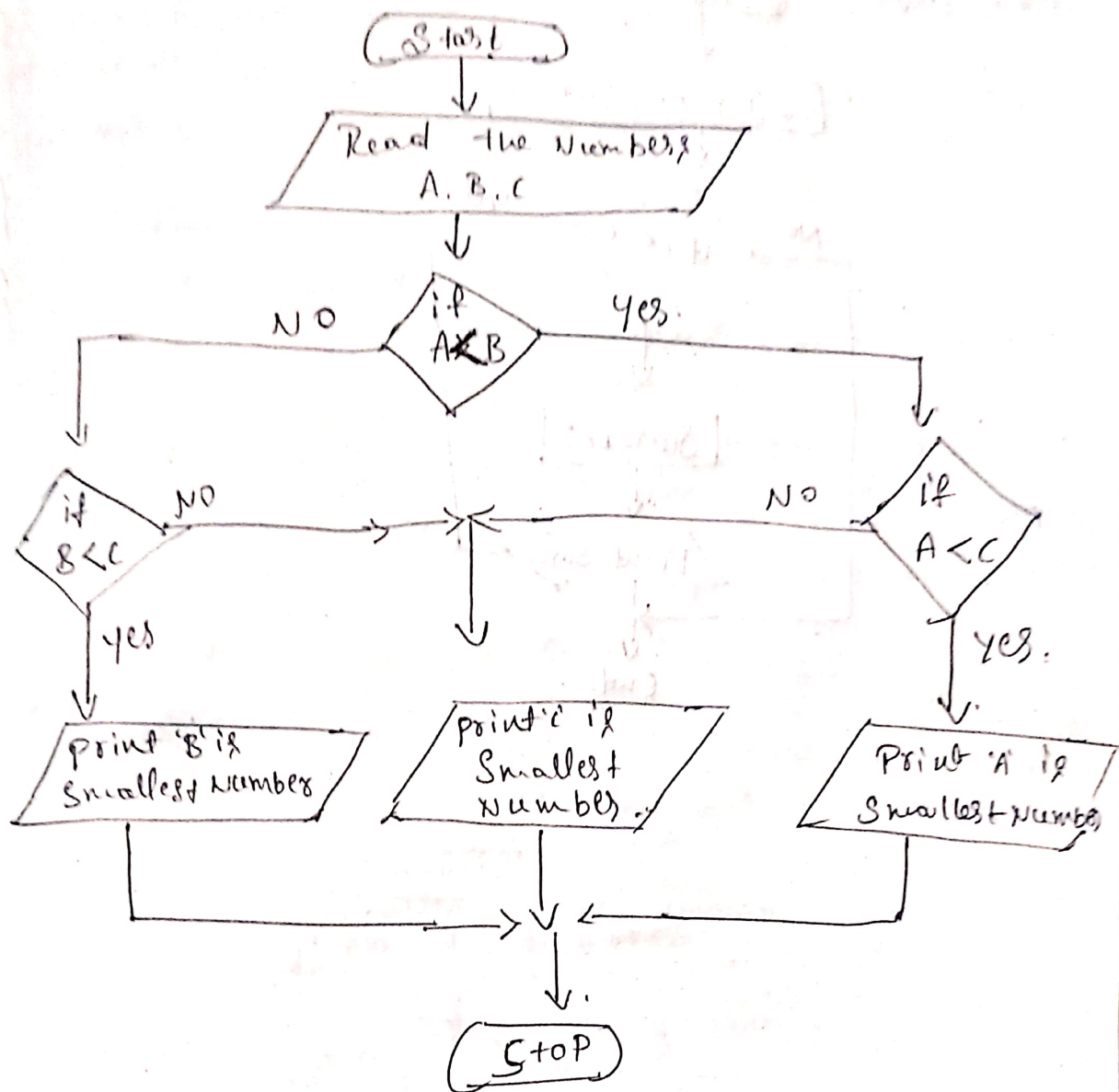
(d) Read ou numbers in inches and convert it into meters

```
        ┌─────────┐
        │  Start  │
        └─────────┘
             │
             ▼
    ╱───────────────╲
   ╱  Read inches    ╱
    ╱───────────────╱
             │
             ▼
   ┌──────────────────────────────┐
   │ meters ← inches * 0.0254      │
   └──────────────────────────────┘
             │
             ▼
    ╱───────────────╲
   ╱  Print meters   ╱
    ╱───────────────╱
             │
             ▼
        ┌─────────┐
        │  Stop   │
        └─────────┘
```

(e) Print 2, 4, 6, 8, 10.

```
                    ┌─────────┐
                    │  Start  │
                    └────┬────┘
                         ↓
            ┌──────────────────────────┐
            │  I/P int i, Sum = 0       │
            └──────────┬───────────────┘
                       ↓
                  ╱─────────╲           Yes
       No        ╱ if i <= 5 ╲──────────────┐
      ┌─────────⟨             ⟩             │
      │          ╲           ╱              ↓
      │           ╲─────────╱
      │               ↓
      │         ┌──────────────┐
      │         │  Sum = i * 2 │
      │         └──────┬───────┘
      │                ↓
      │         ╱────────────────╲
      └────────▶│   Print Sum     │
                ╲────────┬────────╱
                         ↓
                       End.
```