### Activity 4.1

Analyze the problems given below and identify the input, process and the output.

a). Those who are 18 years or above are "eligible to vote." Those who are below 18 years are "not eligible to vote."

b). In a one day cricket match between two teams, either one team may win or the match will be drawn.

Activity 4.2

Fill in the blanks "a" and "b" related to the decision in the following flow chart, using the Activity 4.1 (a) given above.

Start

Input age

a ....

Age less than 18 years? → "You are not eligible to vote"

b ....

" You are eligible to vote"

End
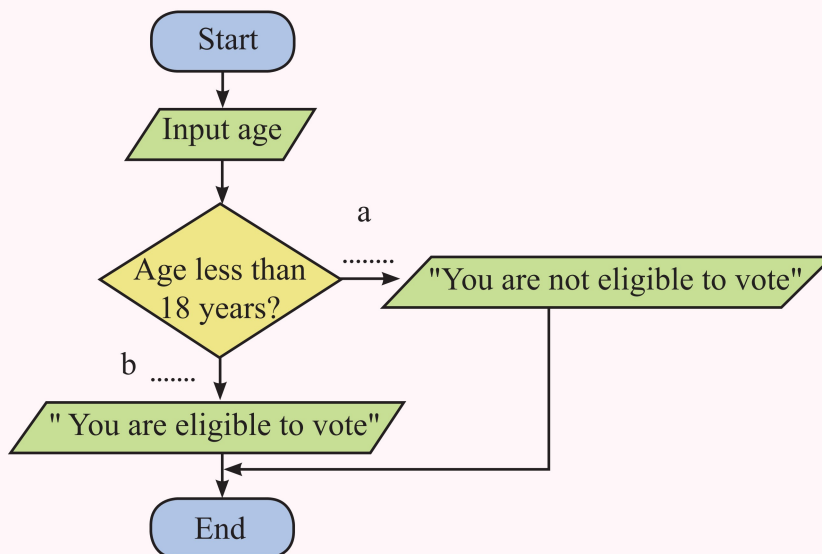
Consider the following statements in relation to the flowchart in 4.2.

   A - Has only the sequence.
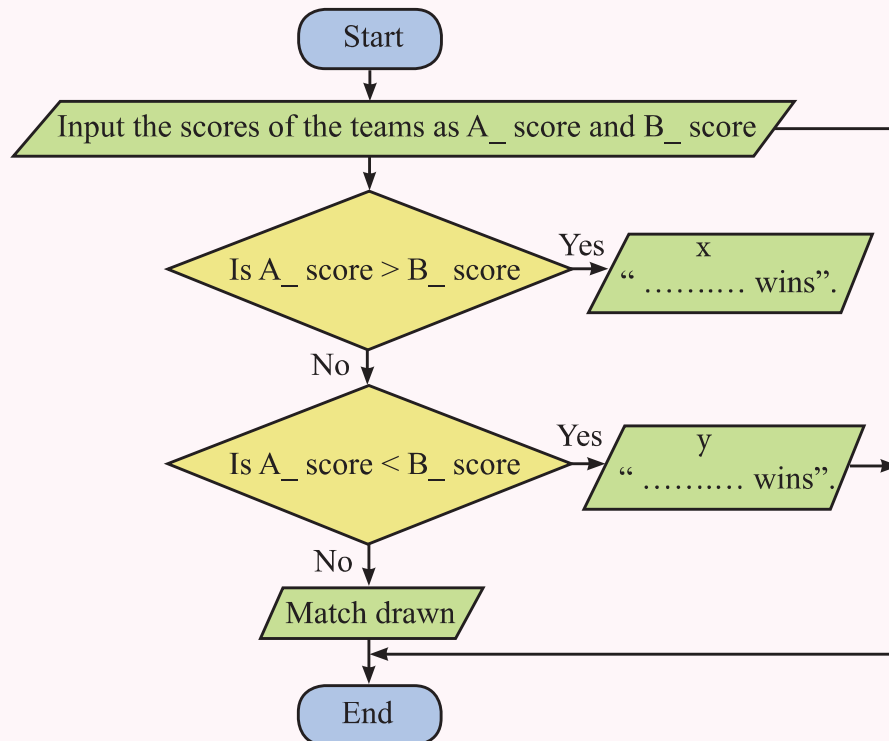   B - Has only the selection.
   C - Has both sequence and selection.

According to the statements above:

  1). Only A is correct   2). Only B is correct   3). Only C is correct
  4). None is correct

Activity 4.3

Fill in the blanks "x" and "y" in the flow chart below with the analysis done in relation to the Activity 4.1 (b).

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         ▼
    ╱─────────────────────────────────────────────╲
   ╱ Input the scores of the teams as A_ score and  ╲
   ╲                  B_ score                       ╱
    ╲─────────────────────────────────────────────╱
                         ▼
              ╱───────────────────╲          Yes    ╱───────────────╲
             ╱ Is A_ score > B_ score ╲ ──────────▶ ╱     x          ╲
             ╲                        ╱             ╲ " ......... wins". ╱
              ╲───────────────────╱               ╲───────────────╱
                    │ No
                    ▼
              ╱───────────────────╲          Yes    ╱───────────────╲
             ╱ Is A_ score < B_ score ╲ ──────────▶ ╱     y          ╲
             ╲                        ╱             ╲ " ......... wins". ╱
              ╲───────────────────╱               ╲───────────────╱
                    │ No
                    ▼
         ╱───────────────────╲
        ╱    Match drawn       ╲
         ╲───────────────────╱
                    ▼
              ┌──────────┐
              │   End    │
              └──────────┘
```

When executing the above flowchart number of inputs and outputs are respectively,

   1). 2, 1   2). 3, 1   3). 1, 3   4). 3, 2

Activity 4.4

Find the end result of Scratch expressions given below. A is a variable.

set A to 0   ....

change A by 5   ....

A = A + 10   ....

Activity 4.5

Decide the end result of the following expressions. A is the variable shown in the activity 4.4 and assume that the current value of it is 15.

A < 15 or A = 15   True/ False

A < 15 and A = 15   True/ False

not A < 15   True/ False

A < 15   True/ False

Activity 4.6

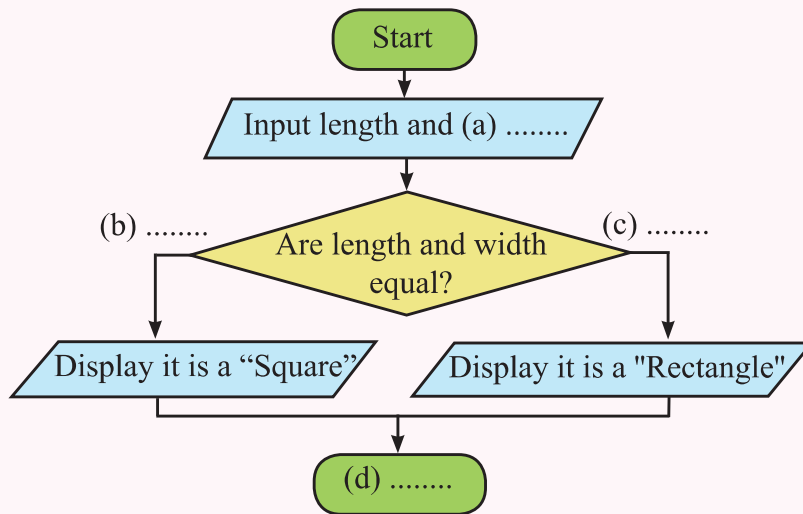a). Create a Scratch program for the flow chart in 4.2

b). Complete the blanks in the flow chart 4.3 and build up a Scratch program.

Complete the blanks "a", "b", "c" and "d" in the flow chart below which determines whether a figure is a square or a rectangle when the length and the width are given.
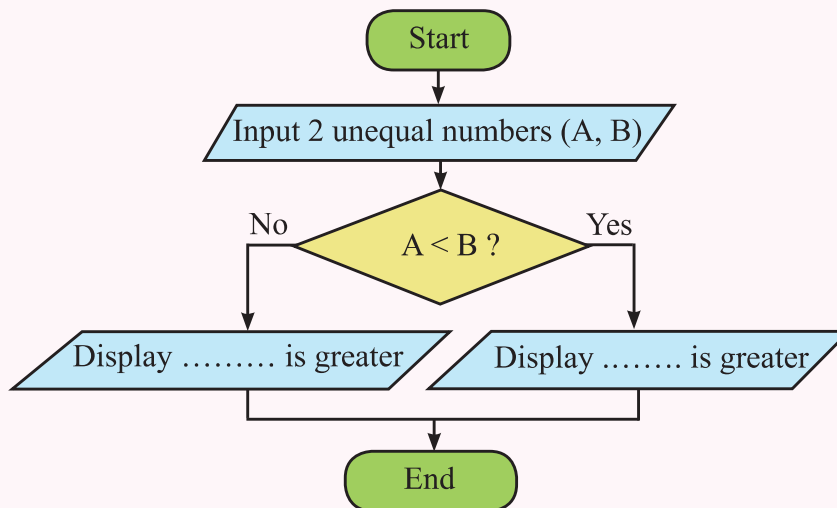
```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │
              ┌──────────▼──────────┐
              │ Input length and (a) ........ │
              └──────────┬──────────┘
                         │
(b) ........      ◇ Are length and width ◇      (c) ........
              ◇       equal?         ◇
                         
   ┌───────────────────┐      ┌───────────────────────┐
   │ Display it is a    │      │ Display it is a         │
   │ "Square"           │      │ "Rectangle"             │
   └─────────┬──────────┘      └────────┬────────────────┘
                         │
                    ┌────▼─────┐
                    │ (d) ...... │
                    └──────────┘
```
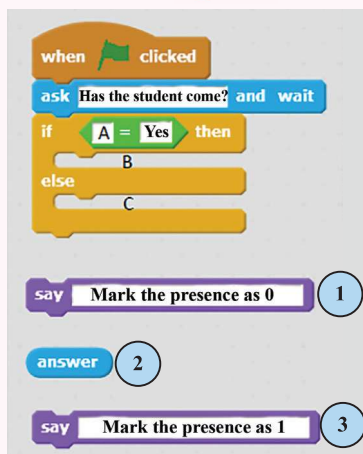
Suitable words for the blanks; (End, width, no, yes)

Fill in the blanks in the flow chart below which determines the grater number out of two given unequal numbers.

```
                    ┌──────────┐
                    │  Start   │
                    └────┬─────┘
                         │
              ┌──────────▼──────────┐
              │ Input 2 unequal numbers (A, B) │
              └──────────┬──────────┘
                         │
   No            ◇   A < B ?   ◇            Yes
                         
   ┌─────────────────────┐      ┌─────────────────────┐
   │ Display ........ is greater │      │ Display ........ is greater │
   └──────────┬──────────┘      └─────────┬───────────┘
                         │
                    ┌────▼─────┐
                    │   End    │
                    └──────────┘
```

In marking the class attendance register, if a student is present, it is marked as "1" and if absent, it is marked as "0". The Scratch program related to this, is given below but not in order. Arrange the steps in the correct order.

Write the number of the instruction block relevant to A, B and C.

A =

B =

C =

List out the smart and mobile devices and their applications further as mentioned in the textbook and some more that you are aware of.