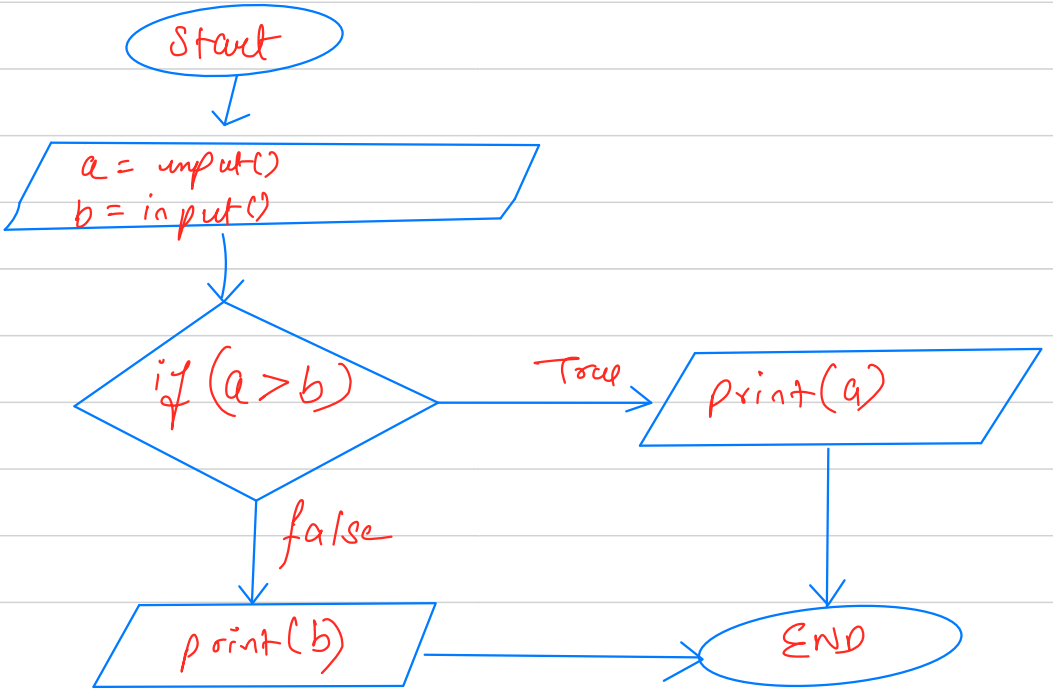
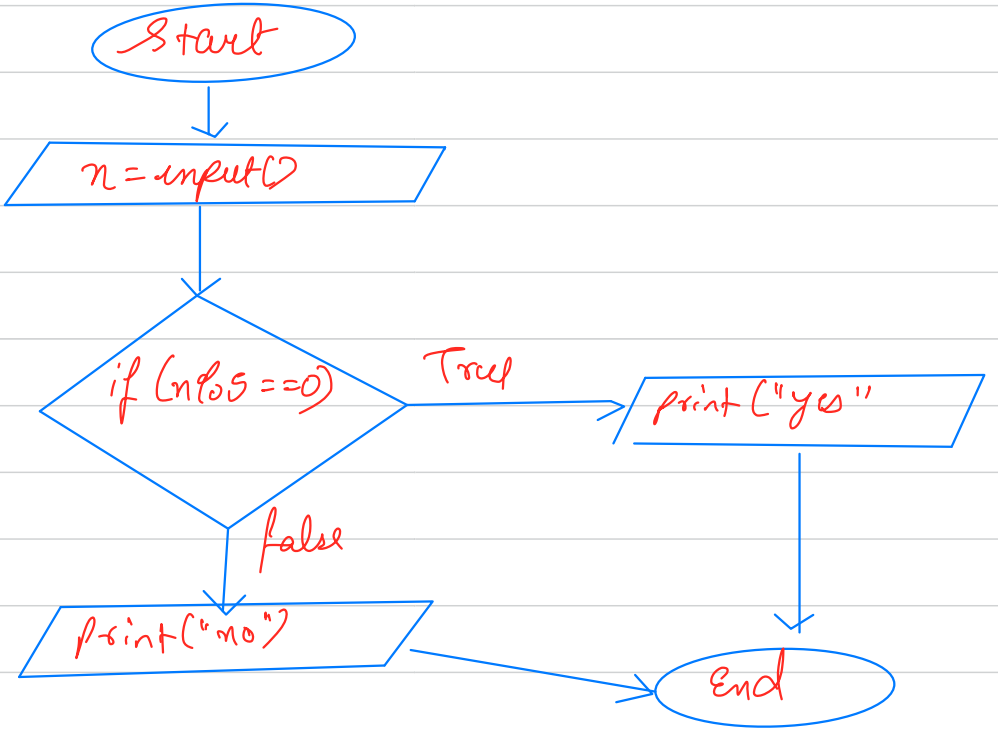
Agenda → Problem solving around conditionals
Puzzle
Logical operators

Q⇒ Draw a flowchart to take 2 numbers as input and print max of the 2 numbers.

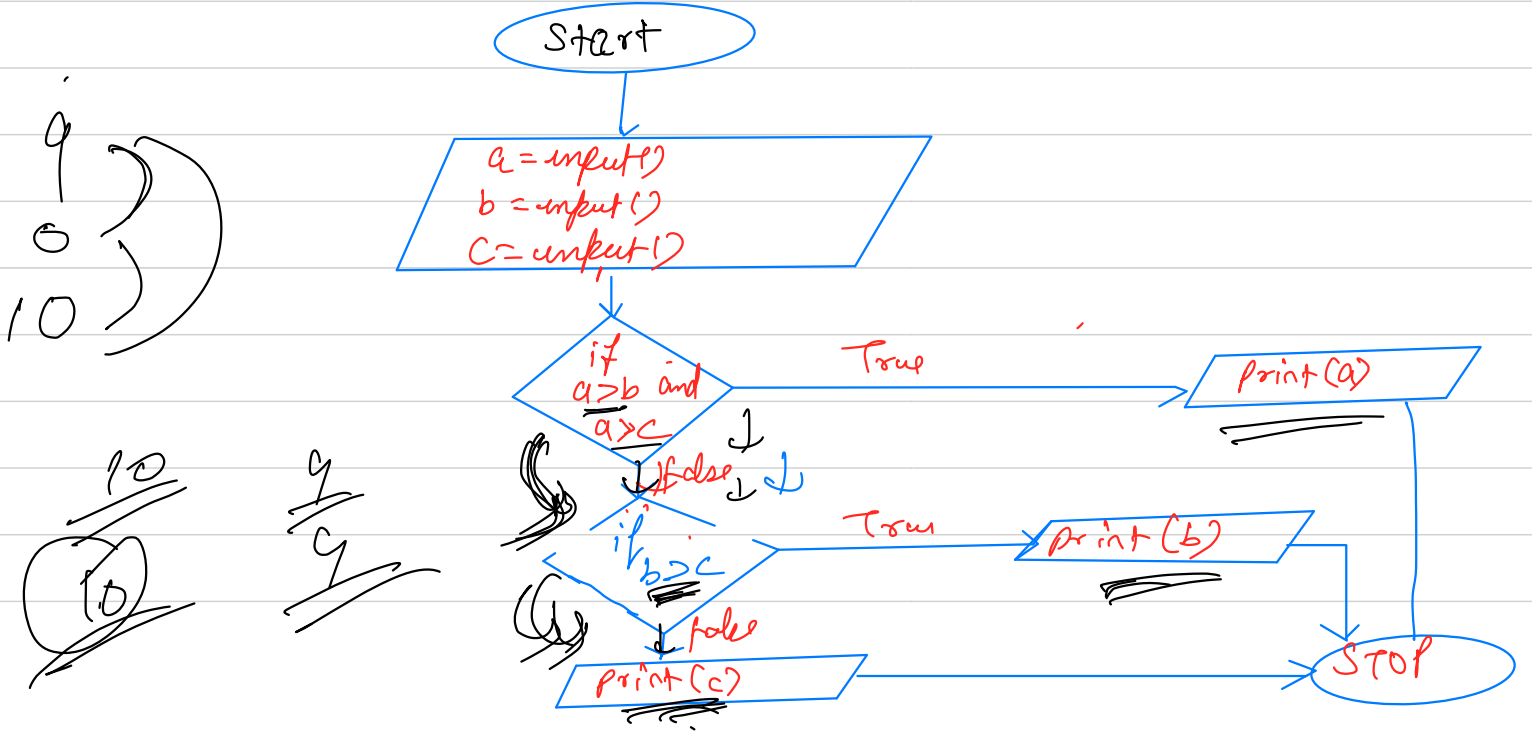
a = 16 a = 15 a = 14
b = 15 b = 15 b = 15



Q ⇒ Draw a flowchart to check if a no. is divisible by 5.



Q⇒ Draw a flowchart to calculate maximum of 3 numbers, given by a user.



Logical Operators

logical operators ← ! same?2 != → relational value

no

operator	Usage	Example
and (&&)	'and' is used when both conditions have to be fulfelled	6>5 and 10<=11 → True 4>3 and 2>10 → false 1>10 and 4==4 → false
Or (||)	'or' is used when at least one condition is to be fulfelled	6>5 or 10>11 → True 4==6 or 3>=10 → false
not (!)	'not' is used when we want the opposite condition to be true	not 5<3 → True not 10==10 → false !(6>3) → false

pipes ← not

A	B	o/p
0	0	0
0	1	0
1	0	0
1	1	1

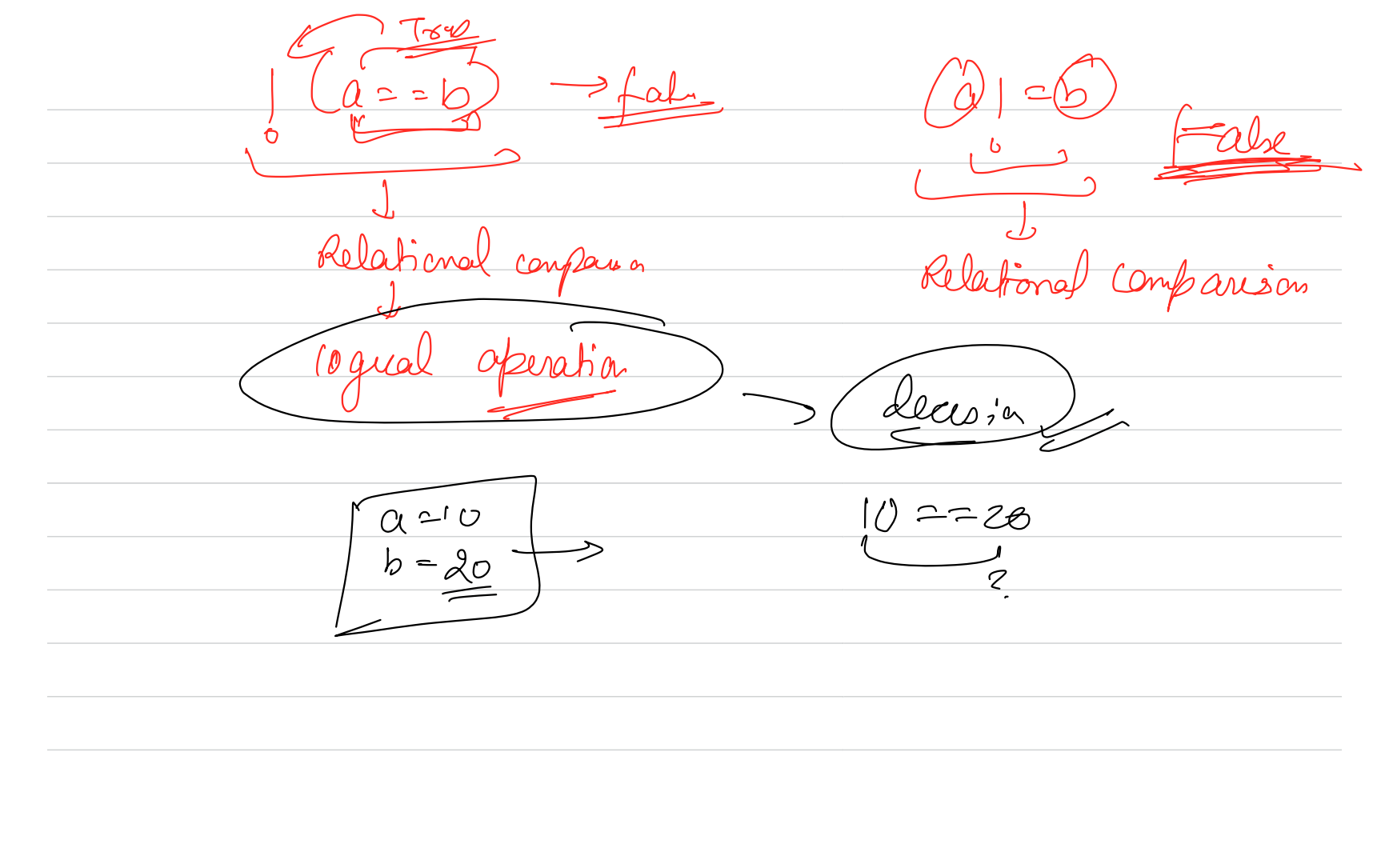
and

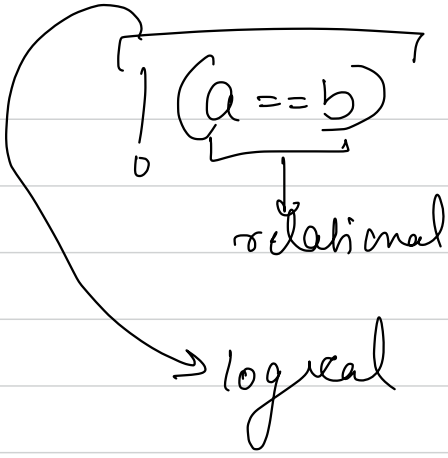
A	B	o/p
0	0	0
0	1	1
1	0	1
1	1	1

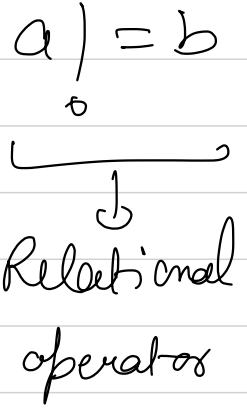
or

A	o/p
0	1
1	0

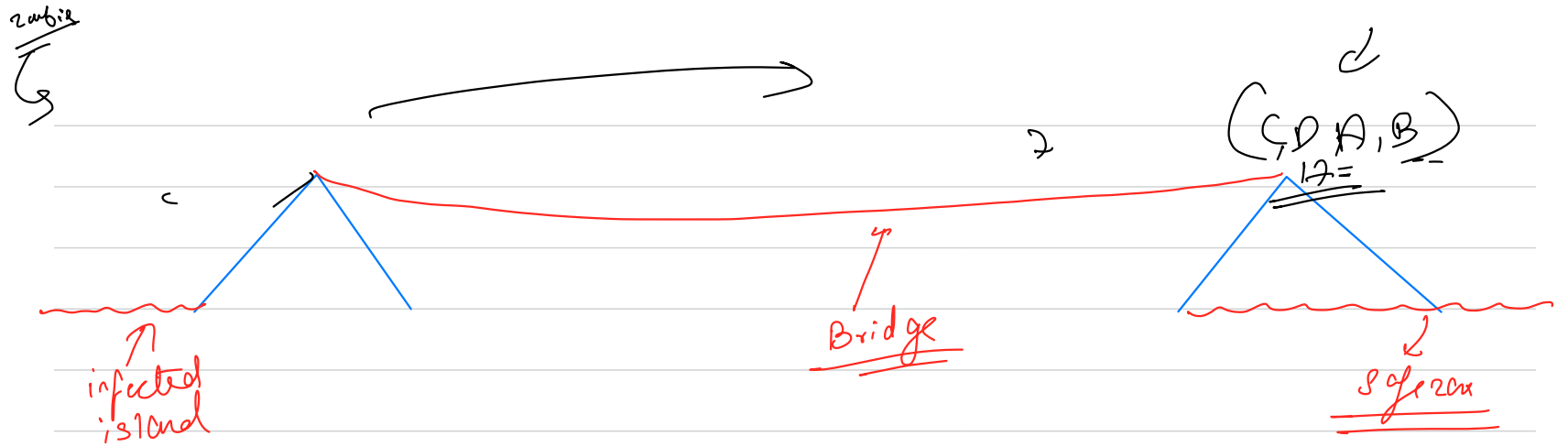
not


True
!(a==b)
false
a!=b
false
Relational comparison
Relational comparison
logical operation
decision
a=10
b=20
10==20
?


!(a==b)
relational
logical


a!=b
Relational
operators

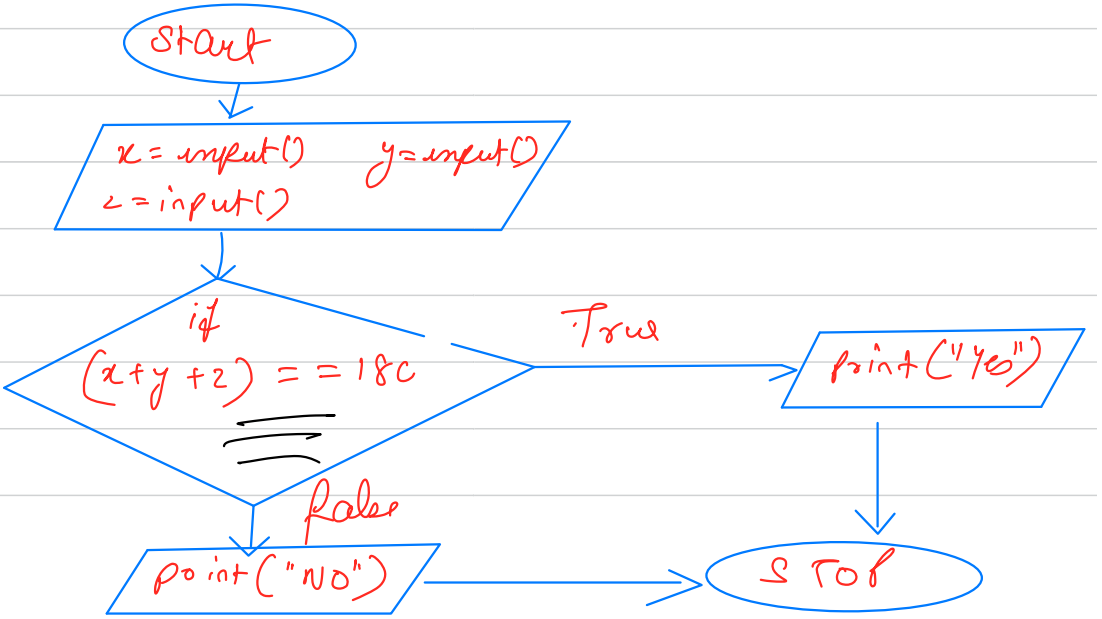
A person is stuck on an island along with 3 more people. Let's name all of them as **A, B, C, D**. The island is attacked by some zombies and you need to escape from the island to a safe zone via a Bridge. All 4 of you are standing at one side of the bridge and need to cross it. The zombies will reach at you in **17 Minutes** and you have to escape the island in this time. Now all four of you run at a different speed. The person A crosses the bridge one way in **1 minute** person B can cross the bridge one way in **2 minutes**, similarly person C can cross the bridge one way in **5 minutes** and person D can cross the bridge one way in **10 minutes**. Now there is one more constraint, the bridge can handle only **2 persons** at **one time**, and you have **1 lamp** which you need always to travel on the bridge (like whoever is crossing the bridge needs the lamp light always so if two people are crossing they both need the lamp light so they need to stick together and then cross.). Now you need to devise a strategy, to escape everyone before the zombies arrive.



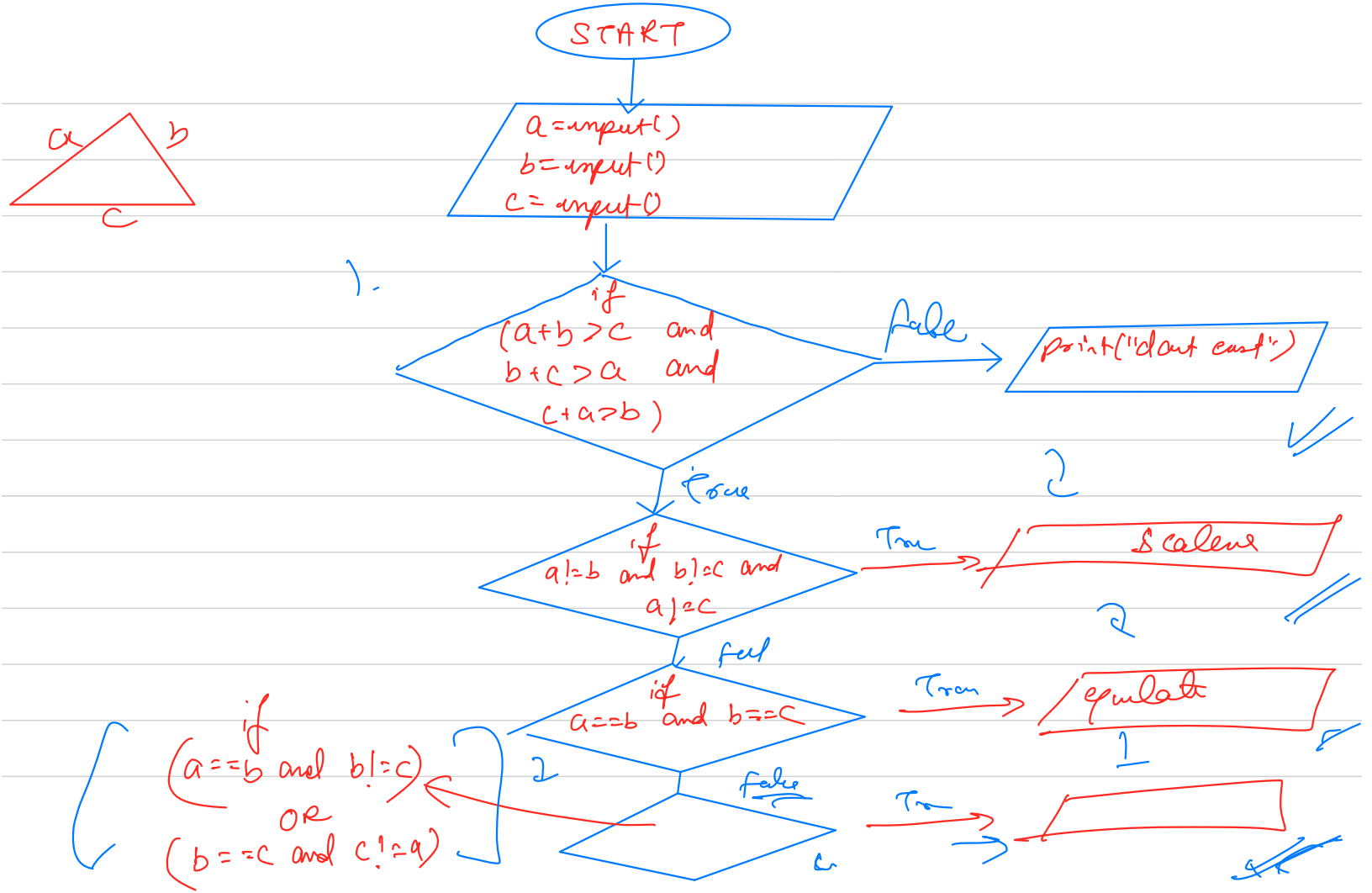
1. A, B goes together (2 min)
2. A comes back with the lamp (1 min)
3. Crew lamp to (D) & they go to safe zone (10 min)
4. B goes back with the lamp (2 min)
5. (AB) goes to gether (2 min)

A → 1 min
B → 2
C → 5
D → 10

Q⇒ Draw a flowchart, which inputs 3 angles of a triangle and check if a triangle is even possible or not with these values.



Q:) Draw a flowchart which takes input of 3 sides of triangle and prints if it is equilateral, isosceles or scalene or doesn't exist


START
a=input()
b=input()
c=input()
a
b
c
if
(a+b>c and
b+c>a and
c+a>b)
false
print("dont exist")
true
if
a!=b and b!=c and
a!=c
true
Scalene
false
if
a==b and b==c
true
equlate
if
(a==b and b!=c)
OR
(b==c and c!=a)
false
true