

Q.)

Input

speed in  
Miles per  
hour

Process

$$\text{Miles} = \frac{1.6 \text{ km}}{3600}$$

Output

speed in  
Kilometers  
per speed

Start

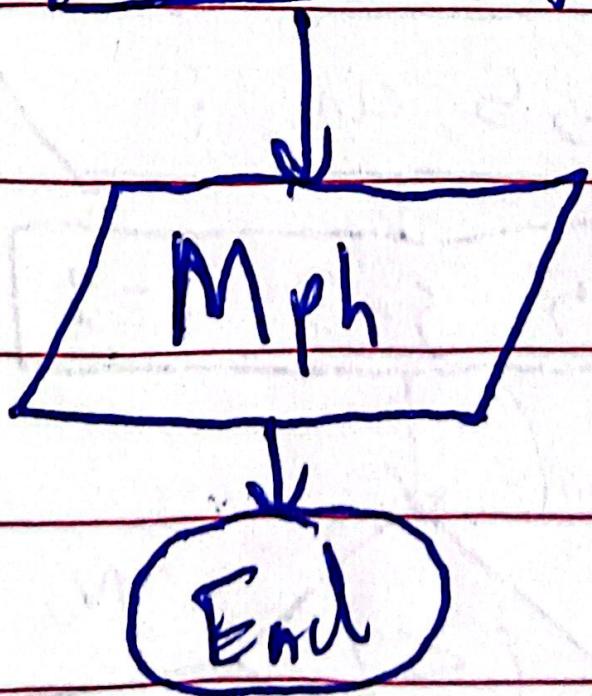
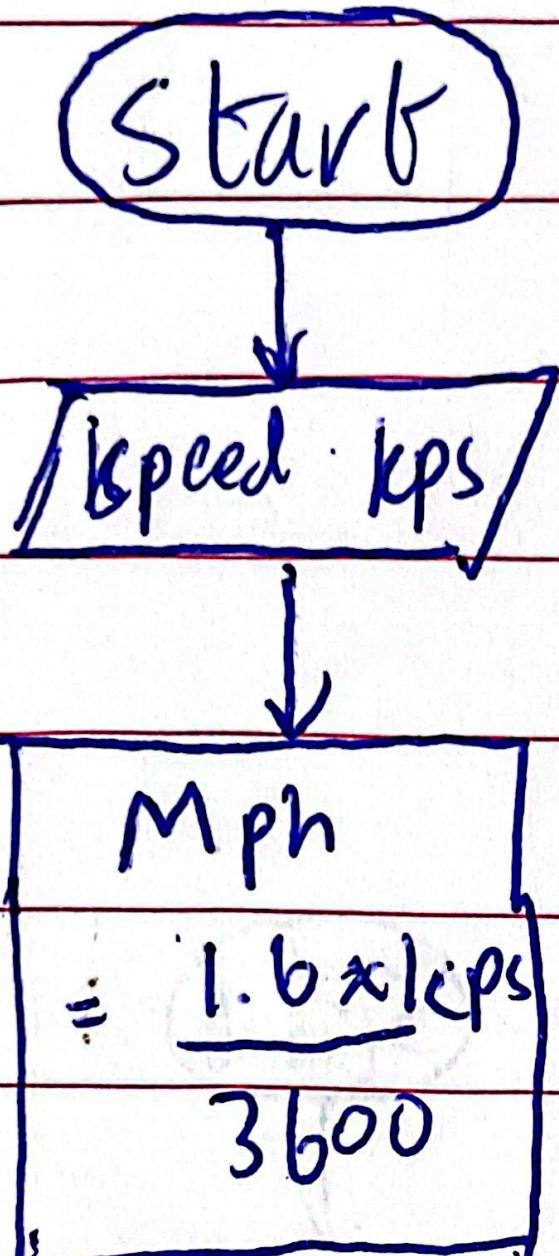
~~I<sub>input</sub>~~

Input m-speed;

~~m-speed~~

$$k\text{-speed} = (m\text{-speed} * 3600) / 1.6$$

Print " k-speed "



Q2)	Input	Process	Output
2.	Numbers greater than zero	Divide number by 2  if remainder = 0, then even, else odd	Even or odd

day / date:

Q2) Start

Input Number;

if (Number > 0)

    if (Number % 2 = 0)

        Print "Even"

    else

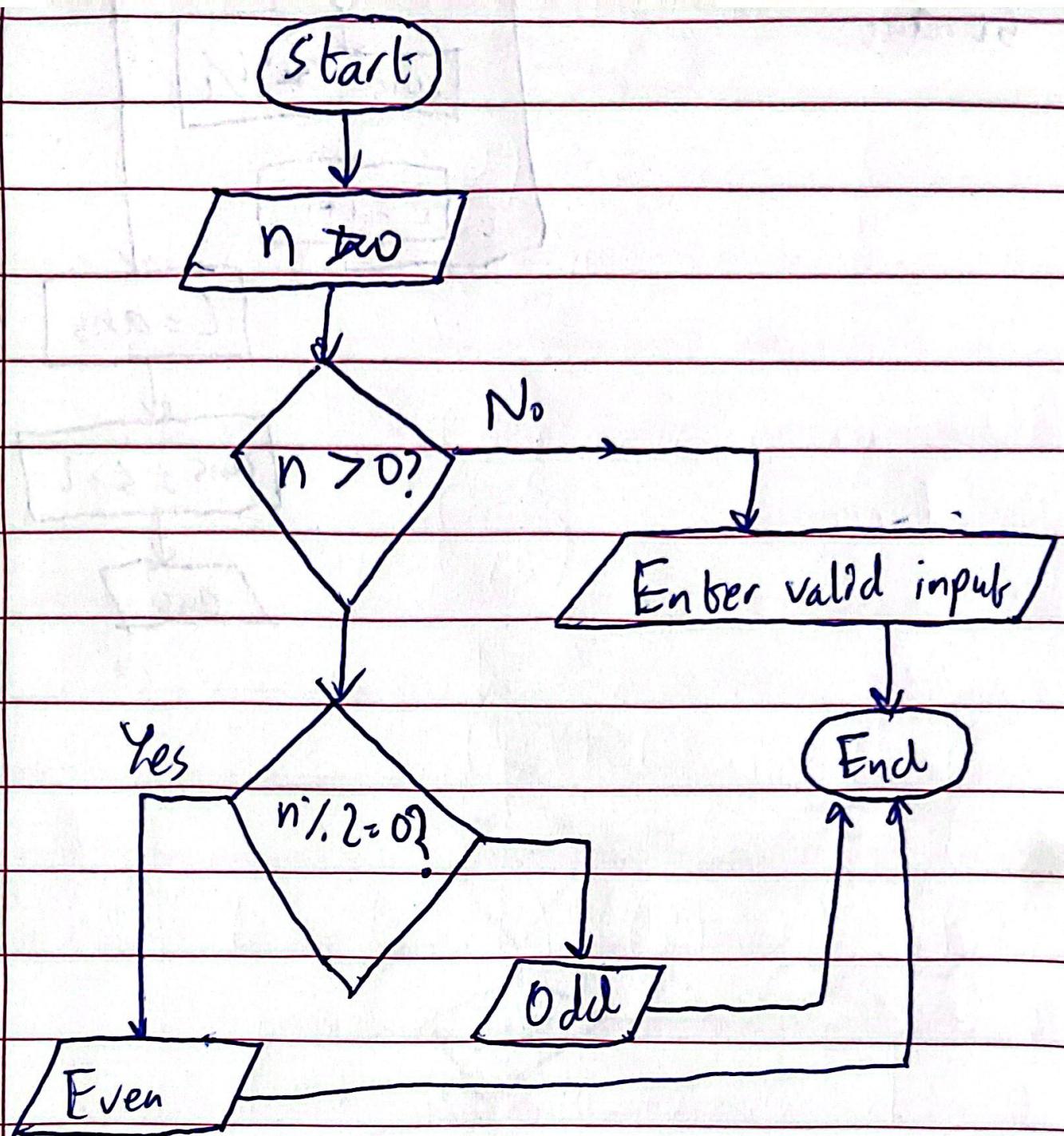
        Print "Odd"

else

    Print "Enter Positive number greater than zero"

End

Q2)



Q3)	Input	Process	Output
	Boys age	if age is	
	Boys age	greater than	
	Girls age	18, then marriage is allowed	

Start

Input Boys\_age, Girls\_age;

if (Boys\_age  $\geq 18$ )

Print "Marriage Permissible"

else

Print "Not Permissible"

if (Girls\_age  $\geq 18$ )

Print "Marriage Permissible"

else if (Girls\_age  $\geq 16 \text{ & } Girls\_age < 18$ )

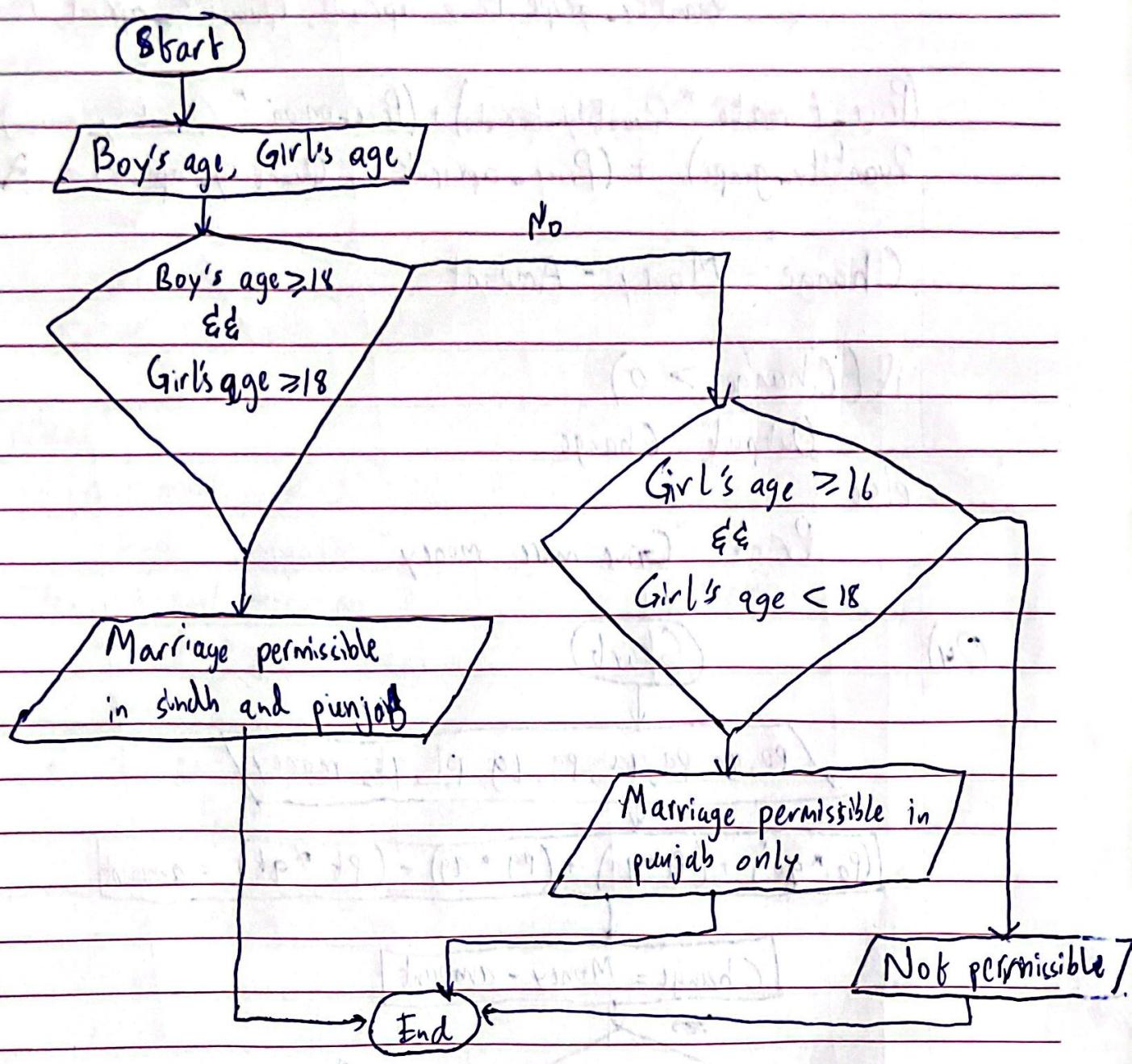
Print "Marriage Permissible in punjab"

else

Print "Not Permissible"

End

Q)



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day / date:

Input	Process	Output
<ul style="list-style-type: none"><li>- Age of boy</li><li>- Age of Girl</li></ul>	<ul style="list-style-type: none"><li>- If both are above 18 then Marriage is permissible in both</li><li>- If boy is above 18 and girl is above 16, then marriage is permissible in punjab not sindh</li><li>- If <del>below</del> both are below 18</li></ul>	<ul style="list-style-type: none"><li>- Legal or illegal to marry</li></ul>

Q4	Input	Process	Output
	- Prices of vegetables - Money - Quantity of vegetables	- Prices of vegetables + Quantity of vegetables - Money - Total - Check for change and check if money < total if yes give Invalid Transaction not possible output	- Change or <del>check if money is and money</del> Transaction not possible

Q4 Start

Input Price\_tomato, Quantity\_tomato, Price\_onion, Quantity\_onion, Price\_grape, Quantity\_grape, Price\_apricot, Quantity\_apricot, Money

$$(Price\_tomato * Quantity\_tomato) + (Price\_onion * Quantity\_onion) + (Price\_grape * Quantity\_grape) + (Price\_apricot * Quantity\_apricot) = Amount$$

$$Change = Money - Amount$$

$$\text{If } (Change > 0)$$

Output Change

else

Print "Give more money"

Q4)

Start

$p_0, q_0, p_a, q_a, p_g, q_g, p_b, q_b, \text{money}$

$$(p_0 * q_0) + (p_a * q_a) + (p_g * q_g) + (p_b * q_b) = amount$$

$$Change = Money - amount$$

Change > 0

Yes

Give Change

No

Give more money

End



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Q5	Input	Process	Output
- Wheat		- If soil moisture < 30%	- Irrigation and
- Corn		and time > 24,	no irrigation
- Rice		Irrigation, for wheat	
- Soil moisture		- If soil moisture < 46%.	
- Time in hours		, irrigation, no for corn	
		- If soil moisture < 25%.	
		and time > 24, irrigation	
		, for rice	
		- if soil Else no	
		irrigation	

Q5 Start

Input Wheat, Corn, Rice, Soil\_moisture, Timehours

Enter the crop type

Enter the soil moisture level

Enter rainfall in hours

if (Wheat)

if (soil moisture < 0.3 & hours > 24)

Print "Irrigation"

Else if (soil moisture > 0.3 & hours < 24)

Print "No Irrigation"

Else if (corn)

+ if (soil moisture < 0.4)

Print "Irrigation"

Else

Print "No Irrigation"

Else if (rice)

if (soil moisture < 0.25 & hours > 24)

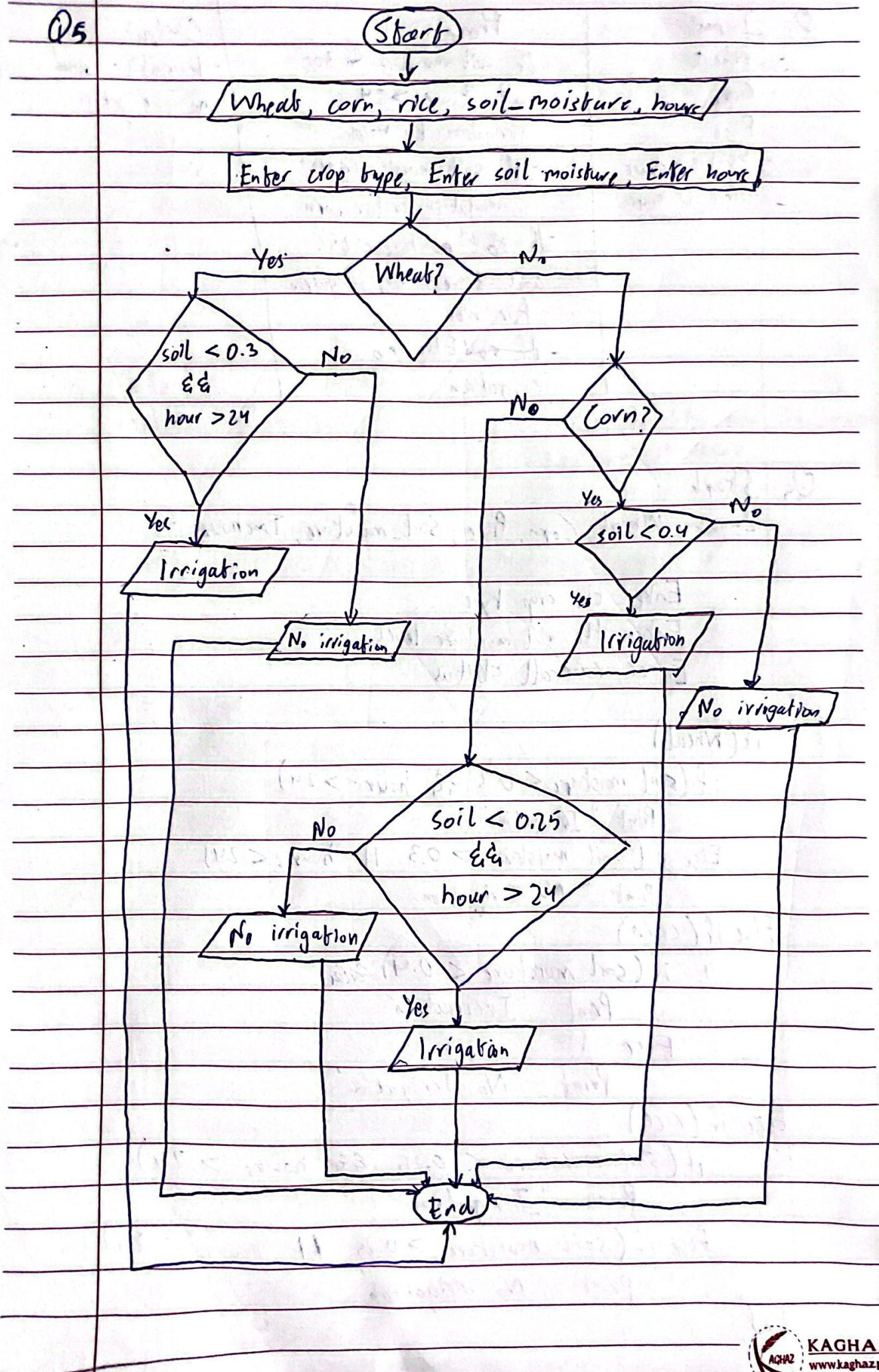
Print "Irrigation"

Else if (soil moisture > 0.25 & hours < 24)

Print "No irrigation"

End

Q5



Q6	Input	Process	Output
- Height	- If Dragon Roller Coaster, height is 48 and age is 10, Eligible.	- Criteria met	
- Age	- Else not eligible	- Criteria not met.	
- Ride	- Else if Sky swing, height is 54, eligible, else not eligible.		
	- Else if Carousel, age is 5, eligible. Else not eligible.		

Q6 Start

Input Height, Age, ~~Ride~~, Dragon, Sky, Carousel

Enter Height

Enter Age

Enter Ride

if (Dragon)

if (Height  $\geq$  48 && Age  $\geq$  10)

Print "You meet the criteria for Dragon"

Else

Print "Sorry, you do not meet the criteria for Dragon"

Else if (Sky-swing)

if (Height  $\geq$  54)

Print "You meet the criteria for sky swing"

Else

Print "Sorry, you do not meet the criteria for sky swing"

Else if (Carousel)

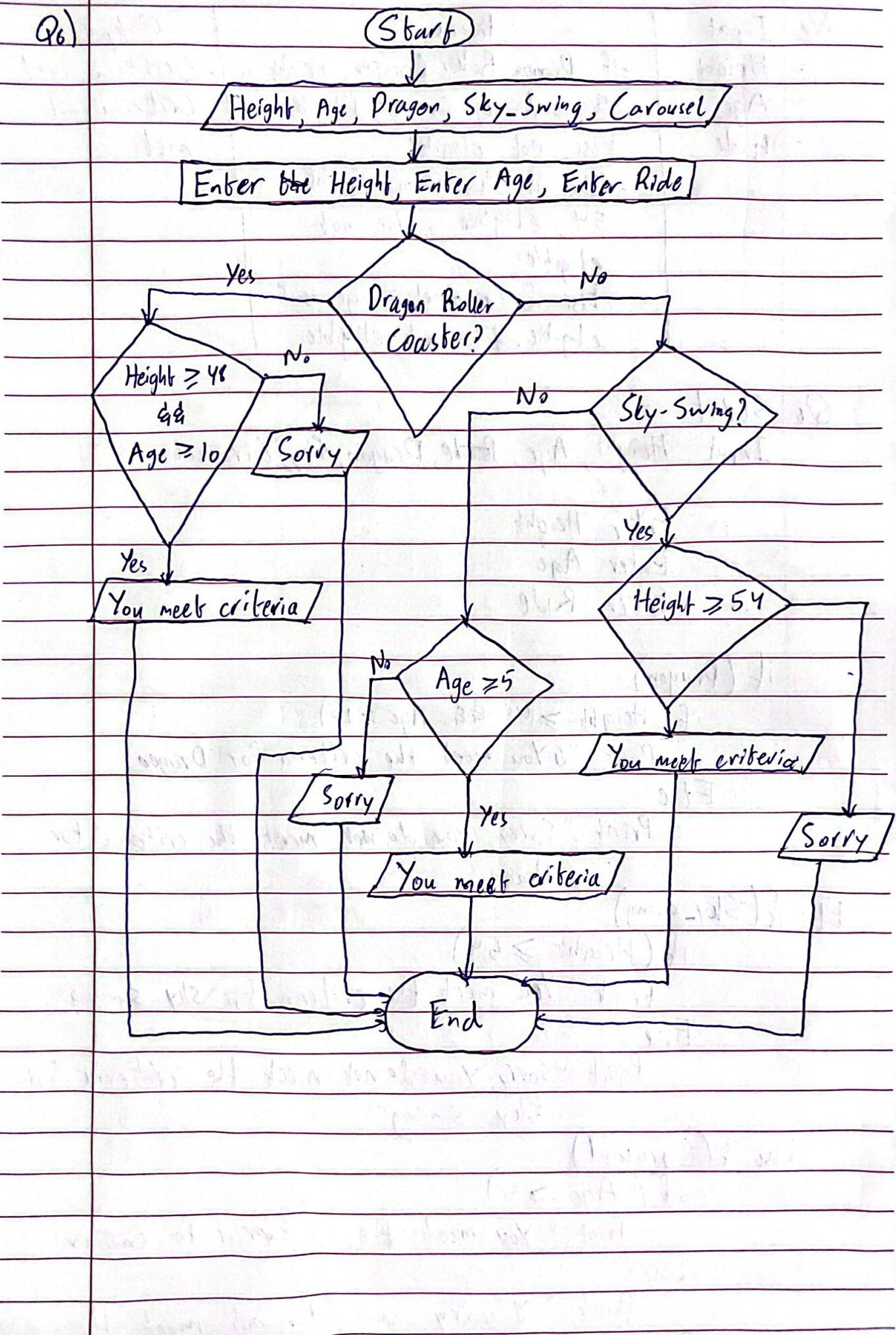
if (Age  $\geq$  5)

Print "You meet the criteria for Carousel"

Else

Print "Sorry, you do not meet the criteria for Carousel"

Q6)



Q7)

Input	Process	Output
- Number given with 7 digits, and - Number should only include 1s and 0s	Use $n \% 10$ and $n / 10$ to find out which floor the user is on	- Floor on which the user is.

Q7) Sketch

Input number  $n$ ;

//  $n$  has 7 digits which consists of 1s and 0s

if ( $n = 0$ )

Print "User is on floor 0"

Else if ( $n \% 10 = 0$  &&  $n \leq 100000$ )

Print "User is on floor 1"

Else if ( $n \% 10 = 1$  &&  $n \leq 1101101$ )

Print "User is on floor 2"

Else if ( $n \% 10 = 1$  &&  $n \leq 1111001$ )

Print "User is on floor 3"

Else if ( $n \% 10 = 11$  &&  $n \leq 110011$ )

Print "User is on floor 4"

Else if ( $n \% 10 = 11$  &&  $n \leq 1011011$ )

Print "User is on floor 5"

Else if ( $n \% 10 = 1111$ ) ~~etc~~

Print "User is on floor 6"

Else if ( $n \% 10 = 0$  &&  $n \in 1110000$ )

Print "User is on floor 7"

Else if ( $n \% 10 = 111111$ )

Print "User is on floor 8"

End

0. 0000000

1. 0110000

2. 1101101

3. 1111001

4. 0110011

5. 1011011

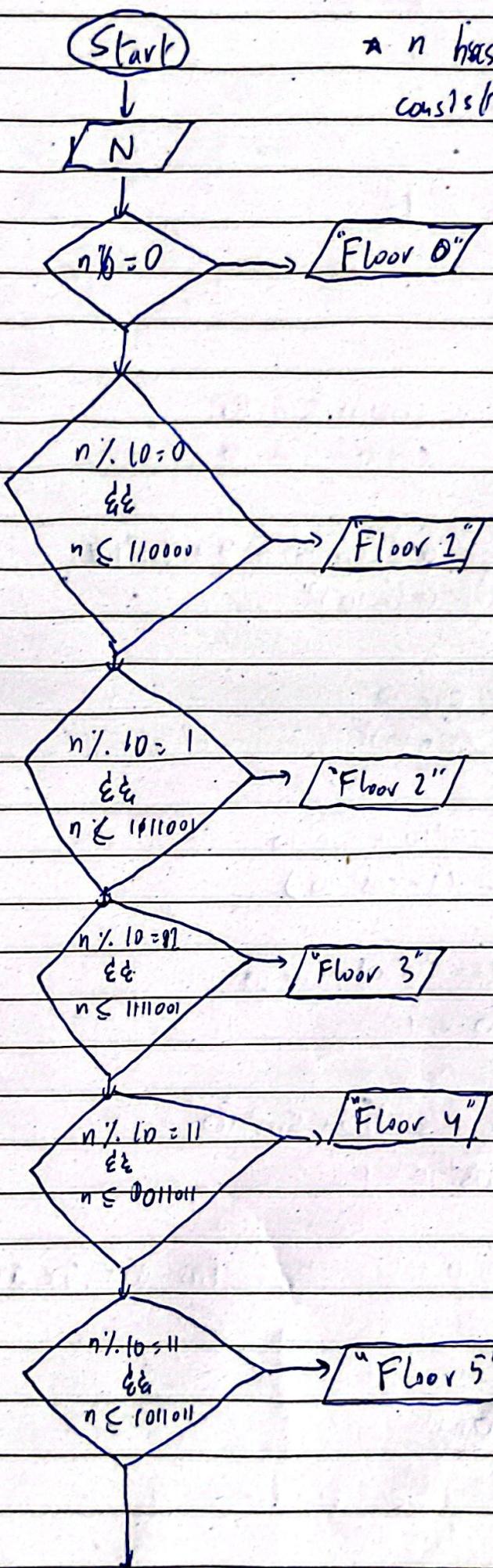
6. 1011111

7. 1110000

8. 1111111



(Q7)



\*  $n$  has ? digits and  
consisting of 1s and 0s.



(Q8) Input	Process	Output
- Number n	* Separate digits using MOD and storing them in a different variable. Then add digits one by one divide n by 10 and repeat the loop process using a loop.	Sum of digits

(Q8) Start

Input N.

Sum = 0

while ( $n \neq 0$ )

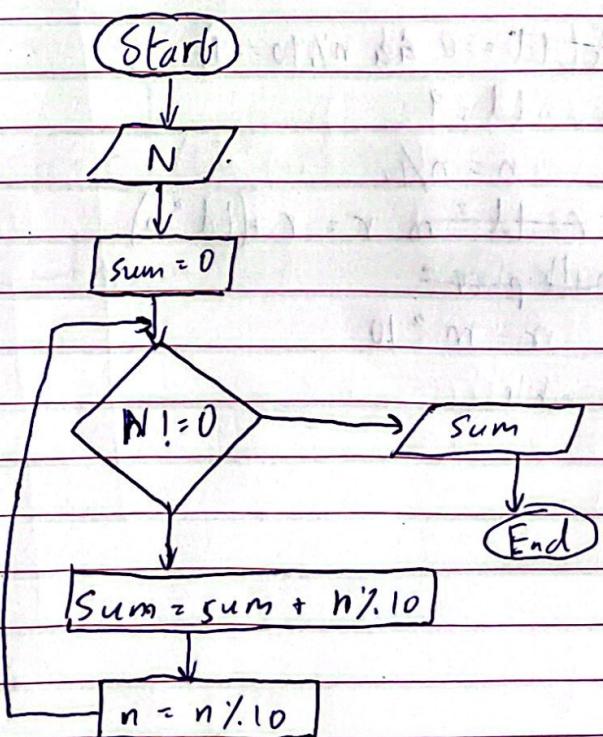
    sum = sum +  $n \% 10$

~~n = n / 10~~

End while

Print "Sum"

(Q8)



(S)urk

Ques	Input	Process	Output
Q9	Number n	<p>By using MOD we can remove 90 by 9. We can check every digit by using loop. Furthermore multiplication can be used with 9 to join the number back together after removing 90</p>	Number instead of 90

(Q9) Start

Inputs n // r = remaining value, m is used for multiplication

r=0, m=1, ld=0 // ld = last digit

while(n > 0)

ld = n % 10

n = n / 10

if (ld == 0 && n % 10 == 9)

ld = 9

n = n / 10

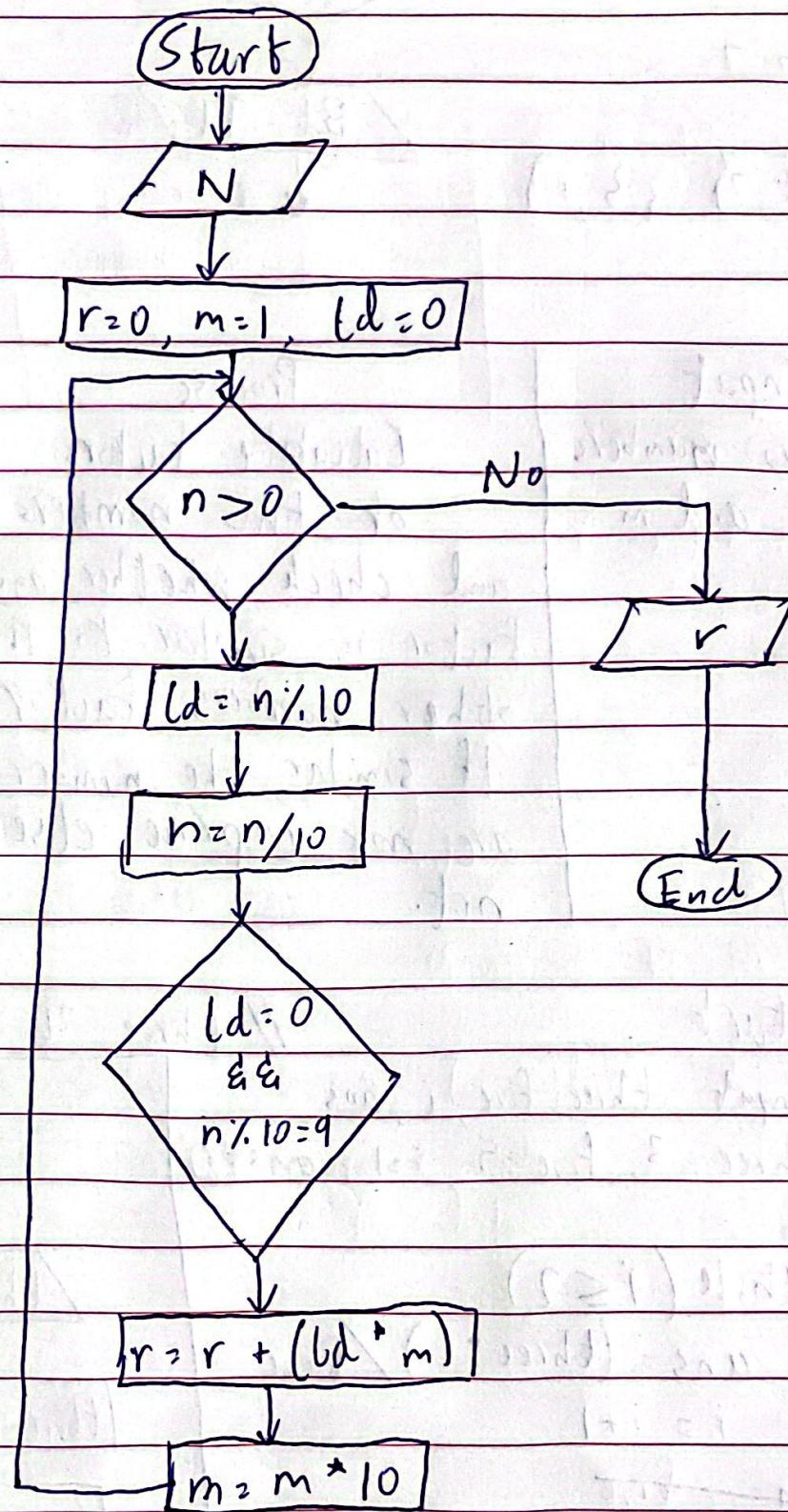
r = ld \* m    r = r + (ld \* m)

multiplier =

m = m \* 10

End while

Q40



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{2, 7} {3, 11}

Start

Bd, Td

Q11	Input	Process	Output
	Two numbers n and m	Calculate factors of two numbers and check whether any factor is similar to the other number's factor. If similar, the numbers are not co-prime, else not.	Coprime or not co-prime

Q11 Start

// L1.ans = 21 Line = 51 ans = output

Q<sub>12</sub>) Start

Input a, b

$i = 2$

if ( $a > b$ )

a is max, && b is min

Else

b is max && a is min

$i = 2$

While ( $i \leq \min$ )

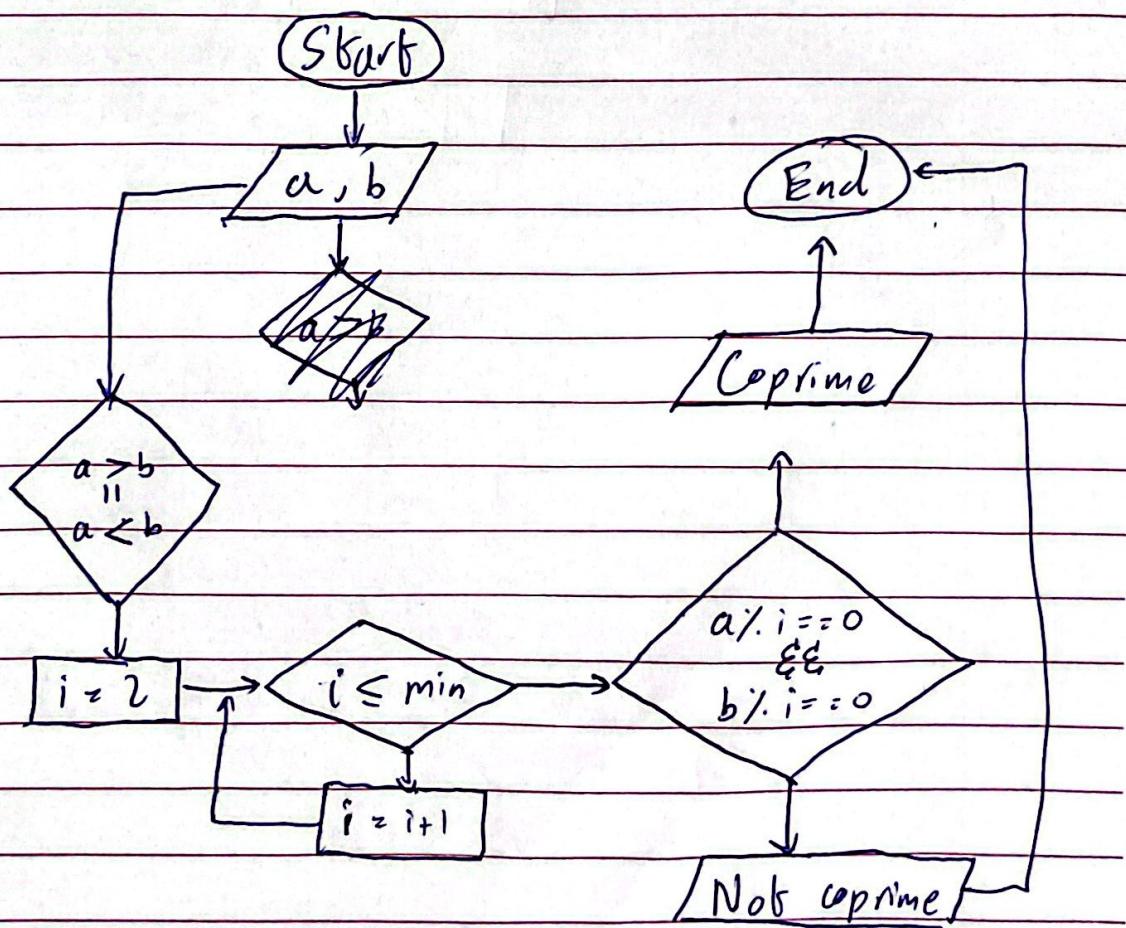
if ( $a \% i == 0$  &&  $b \% i == 0$ )

return 0 // Not coprime

return 1 // Coprime

End

Q<sub>11</sub>



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day / date:

(Q12)	Input	Process	Output
	5L jug 3L jug	<del>Fill</del> Fill the 5L jug until full, so in the end you will be left	4L of water

Start

// three = 3L, five = 5L, ans = output

Input three, five, i, ans

three = 3, five = 5, i = 1, ans = 0

While ( $i \leq 2$ )

$$ans = (three * i) / five$$

$$i = i + 1$$

~~$$ans = five$$~~

$$five = ans$$

$$ans = three + five$$

Print ans

End

Start

three, five

three = 3, five = 5, i = 1, ans = 0

$i \leq 2 ?$

$$ans = (three * i) / five$$

$$i = i + 1$$

$$five = ans$$

$$ans = three + five$$

ans

End



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Q13) Input	Process	Output
M and N Jugs	Using gcd fill the jug according to the requirements.	liters of water

(Q13)  $\text{gcd}(x, y)$   
 While ( $a \neq 0$ )  
 While ( $b \neq 0$ )

$$\text{by } y = y - n$$

water measurements ( $m, n$ )

If  $m$  is smaller

If ( $m > n$ )

$$M = N \text{ & } N = m$$

$$\text{gcd} = \text{gcd}(m, n)$$

Print "Amount of water"  
 if ( $\text{Amount \% gcd} = 0$ )

Print "liters can be measured"

Q9) Input	Process	Output
Date of birth Today's date	Find. Calculate Date of birth and subtract it by Today's date	• Difference

(Q9) Start

Enter Date of Birth.

Input day\_birth, month\_birth, year\_birth

Enter Today's Date

Input day\_current, month\_current, year\_current

if (year % 4 == 0 && year % 100 != 0) || (year % 400 == 0)

    ↳ Leap year

Else

    Not leap year

End

days\_in\_month = [31, 28, 31, 30, 31, 30, 31, 30, 31, 30, 31]

if (leap year)

    day\_in\_month = 29

if (day < 1 || day > day\_in\_month(month - 1))

    Print Invalid day

Else

    Print Valid date

if (day\_age < 0)

    month\_age = month\_age + 1

    days\_in\_month[month\_current - 1] + day\_age

if (month\_age < 0)

    year\_age = year\_age - 1

    month\_age + 12

Print "Age is:", year\_age, "years", "month\_age", "months", "day\_age",  
"day".

End