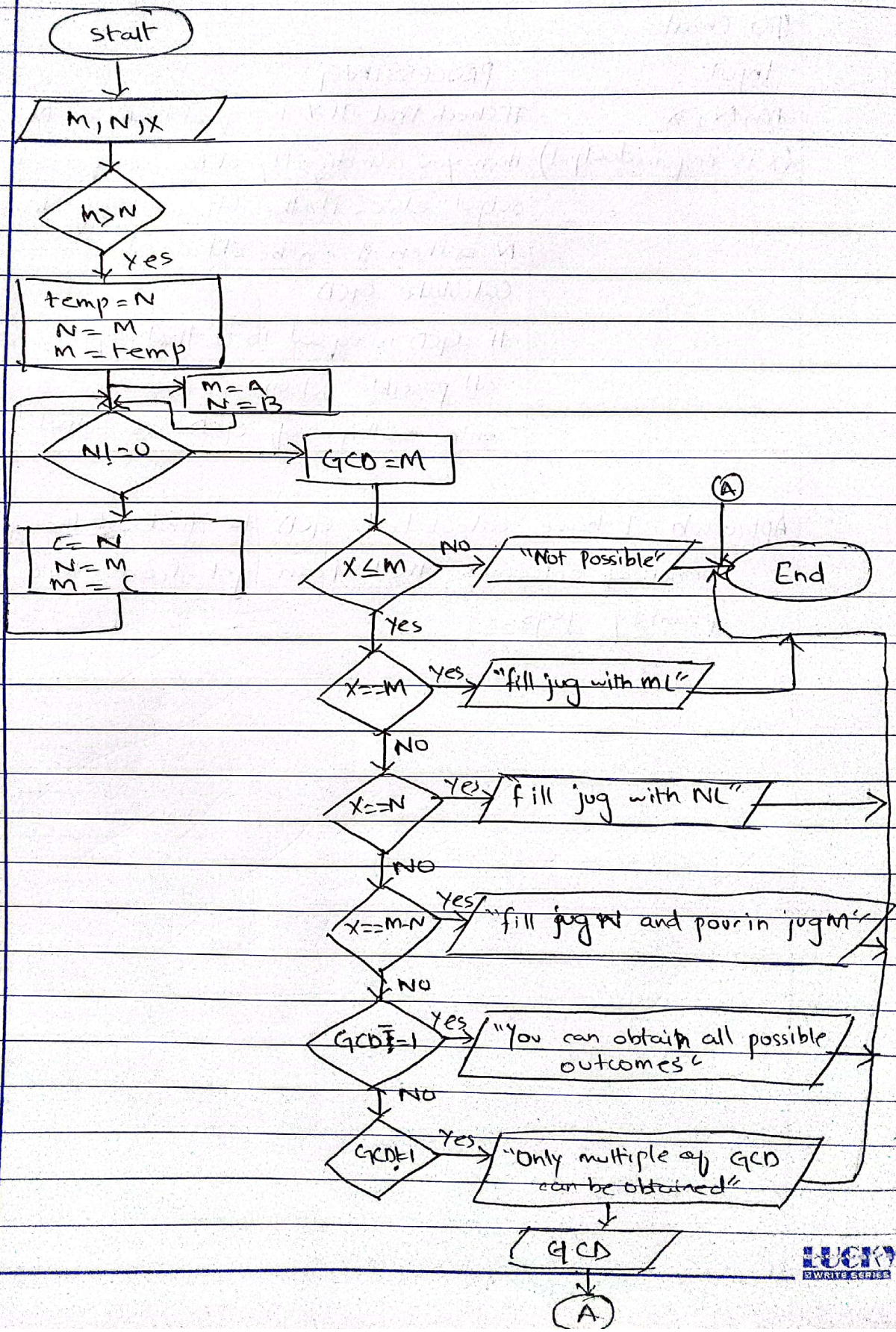
Date

Q13



M-NL Jug General Solution

Date

Q13

```
START
INPUT M, N, X      // X is the required output
IF M > N then
  {temp = N        // N is larger jug
   N = M           // M is smaller quantity jug
   M = temp}
END IF
WHILE N! = 0
  {C = N
   N = M % C
   M = C
  } ⟶ GCD = M
END WHILE
IF X <= M then
   IF X == M
     {Result = M
      Print "fill", M, "Litre jug"
   ELSE IF X == N
     {Result = N
      Print "fill", N "Litre jug" }
   ELSE IF X == M-M then
     { Result = N-M
       Print "fill" M "litre jug the pour it to" N "litre jug"
   ELSE IF GCD == 1 then
       Print "You can obtain all outcomes less than", N "jug"
   ELSE GCD != 1 then
       Print "You can only extract the multiple of", GCD
EndIf
ELSE
   Print "Not Possible"
ENDIF
END
```

Date

IPO Chart:

Input	PROCESSING	OUTPUT
M, N, X (X is required output)	#Check that if X is equal to M or N then you can directly obtain required output else, if X is the difference of M and N is then it can be obtained Calculate GCD If GCD is equal to 1 then you can have all possible outcomes, else you can have only multiple of GCD as output	X

Approach: I have calculated GCD to find out the possible number of outcomes that I can get from two different quantity jugs.