Problem 13: The general N-M size die hard jug problem

IPO

Input	Process	Output
1. The volume of the 2 jugs (M and N) 2. The volume of water we need to obtain (less than larger jug volume)	Find the GCD of the volume of the 2 jugs. If the required amount is the multiple of GCD, it can be extracted otherwise it's impossible to extract that volume.	Amounts of water can be extracted from M-NL jugs.

PSEUDOCODE

```
Start
// Input
        N (Volume of the first jug)
        M (Volume of the second jug)
        X (Volume of water needed to extract)
// Process
        If (M > N) then
                D = N / 2
        Else
                D = M / 2
        End if
        GCD = 1
        While ( D > 1) do
                If (M % D == 0 && N % D == 0) then
                        GCD = GCD * D
                Else
                        D = D - 1
                End if
        End while
// Output
        If (X % GCD == 0) then
                Print “You can extract this amount of water from N and M liters of jug. ”
        Else
                Print “You can not extract this amount of water from N and M liters of jug. ”
End
```