from collections import defaultdict

jug1=int(input("Enter the capacity of Jug1\n"))

jug2=int(input("Enter the capacity of Jug2\n"))

target=int(input("Enter the capacity to be measured within the range of Max(Jug1,Jug2)\n"))

visited=defaultdict(lambda: False)

print(visited)

def waterjugProblem(amount1,amount2):

if(amount1==target and amount2==0) or (amount2 == target and amount1==0):

print(amount1,amount2)

return True

if visited[(amount1,amount2)] ==False:

print(amount1,amount2)

visited[(amount1,amount2)]=True

return (waterjugProblem(0,amount2) or

waterjugProblem(amount1,0) or

waterjugProblem(jug1,amount2) or

waterjugProblem(amount1,jug2) or

waterjugProblem(amount1 + min(amount2,(jug1-amount1)),

amount2-min(amount2,(jug1-amount1))) or

waterjugProblem(amount1-min(amount1,(jug2-amount2)),

amount2+min(amount1,(jug1-amount2))))

else:

return False

print("Steps :")

waterjugProblem(0,0)