



```
def gameOver(pos):
    return pos>=129

def moves(pos):
    return pos+1,pos*2

def win(pos,M):
    if gameOver(pos):
        return M%2==0
    if M==0: return False
    r=[win(move,M-1) for move in moves(pos)]
    return any(r) if M%2!=0 else all(r)

for S in range(129):
    if win(S,2):
        print(S)
        break
for S in range(129):
    if win(S,3) and not win(S,1):
        print(S,end=' ')

for S in range(129):
    if win(S,4) and not win(S,2):
        print("")
        print(S)
        break
```