

```
1 from collections import deque
2
3 def water_jug(x, y, target):
4     visited = set()
5     q = deque([(0, 0)])
6
7     while q:
8         a, b = q.popleft()
9         if (a, b) in visited:
10             continue
11         visited.add((a, b))
12         print(a, b)
13
14         if a == target or b == target:
15             print("Reached target!")
16             return
17
18
19     q.extend([
20         (x, b),
21         (a, y),
22         (0, b),
23         (a, 0),
24         (a - min(a, y - b), b + min(a, y - b)),
25         (a + min(b, x - a), b - min(b, x - a))
26     ])
```

Output

```
Q - - - - -
      Q - - -
    - - - Q - -
      - - - Q -
        Q - - -
      - - - Q
    - - - Q - -
      Q - - -
    - - - Q -
      - - - Q
    - - - Q - -
      Q - - -
```

Code Execution Successful