

```

➤ solver_depth_first
  jugs: 0/3 0/5
  goal: 4
  jugs_hist: {3/3 4/5, 1/3 5/5, 0/3 0/5, 0/3 3/5, 2/3 0/5, 3/3 0/5, 0/3 2/5, 3/3 3/5, 0/3 5/5, 3/3 2/5, 2/3 5/5, 3/3 5/5}
  action_hist: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]
return [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

> solver_depth_first_recursive
jugs: 3/3 4/5
goal: 4
actions: [(0, 3), (1, 5)]
action: (0, 3)
goal_reached: False
result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]
return [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

➤ solver_depth_first_recursive
  jugs: 3/3 4/5
  goal: 4
  actions: [(0, -3), (0, 1, 3), (1, 5)]
  action: (0, 1, 3)
  goal_reached: False
  result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]
return [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

➤ solver_depth_first_recursive
  jugs: 3/3 4/5
  goal: 4
  actions: [(0, 3), (1, 2), (1, -3), (1, 0, 3)]
  action: (0, 3)
  goal_reached: False
  result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]
return [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

> solver_depth_first_recursive
jugs: 3/3 4/5
goal: 4
actions: [(0, -3), (0, 1, 2), (1, 2), (1, -3)]
action: (0, 1, 2)
goal_reached: False
result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]
return [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

► solver_depth_first_recursive
jugs: 3/3 4/5
goal: 4
actions: [(0, 2), (0, -1), (1, -5), (1, 0, 2)]
action: (0, 2)
goal_reached: False
result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

►solver_depth_first_recursive
jugs: 3/3 4/5
goal: 4
actions: [(0, -3), (1, -5)]
action: (0, -3)
goal_reached: False
result: [(0, 3), (0, 1, 3), (0, 0, 3), (0, 1, 2), (0, 0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

►solver_depth_first_recursive
jugs: 3/3 4/5
goal: 4
actions: [(0, 3), (1, -5), (1, 0, 3)]
action: (1, 0, 3)
goal_reached: False
result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

▶ solver_depth_first_recursive
  jugs: 3/3 4/5
  goal: 4
  actions: [(0, -3), (0, 1, 3), (1, 3), (1, -2)]
  action: (0, -3)
  goal_reached: False
  result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

▶solver_depth_first_recursive
  jugs: 3/3 4/5
  goal: 4
  actions: [(0, 3), (1, 3), (1, -2), (1, 0, 2)]
  action: (1, 0, 2)
  goal_reached: False
  result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

► solver_depth_first_recursive
  jugs: 3/3 4/5
  goal: 4
  actions: [(0, 1), (0, -2), (0, 1, 2), (1, 5)]
  action: (1, 5)
  goal_reached: False
  result: [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```



```

➤ solver_depth_first_recursive
  jugs: 3/3 4/5
  goal: 4
  actions: [(0, 1), (0, -2), (1, -5), (1, 0, 1)]
  action: (1, 0, 1)
  goal_reached: True
return [(0, 3), (0, 1, 3), (0, 3), (0, 1, 2), (0, 2), (0, -3), (1, 0, 3), (0, -3), (1, 0, 2), (1, 5), (1, 0, 1)]

```