

Ans1) Time Complexity in water jug problem is determined by the no. of possible states that need to be explored to find solution. If we have 2 jugs ( $m$ ) and ( $n$ ) the time complexity will be their products  $O(m \times n)$

Ans2) Depth First is used to explore a path as far as possible before backtracking, which can lead to half exploration. Hence Breadth first search is used for systematic exploration.