GlassFallingpdf
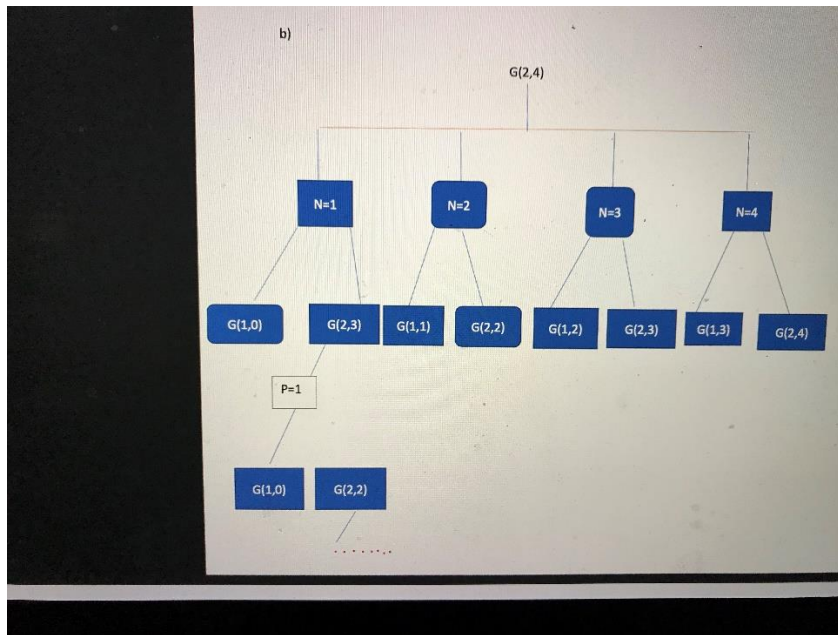
a.Describe the optimal substructure/recurrence that would lead to a recursive solution

Answer: n

(b) Draw recurrence tree for given (floors = 4, sheets = 2)

 (d) How many distinct subproblems do you end up with given 4 floors and 2 sheets?

Answer: 8

(e) How many distinct subproblems for n floors and m sheets?

Answer: n*m

(f) Describe how you would memoize GlassFallingRecur?

Memoization is a technique for improving the performance of recursive algorithms. It involves rewriting the recursive algorithm so that as answers to problems are found, they are stored in an array. A glass sheet that survives the fall can be used again in another trial. The glass sheets are uniform, so results will not vary between them. A shattered glass sheet must be swept up and thrown away. If glass shattered when it hits the mat, then it would shatter if dropped from a higher floor too. If glass survives a fall, then it would survive a shorter fall. There's no guarantee that the glass falling from the first-floor window will break, nor that the glass thrown from (last) nth-floor does not break. If only one glass sheet is available and we want to be

sure of getting the right result, we can only try from the first floor and move up one by one. In the worst case, we would try all the floors. But what if you had 2, or just some general m number of sheets?