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Falling Glass

a) Given n floors, m glass sheets. At some floor, x, we have to find the worst case out of the floors above x (n-x) or the floors below x (x-1) which splits into two subproblems. In the subproblem for the floors above x, the glass pane doesn't break so we use the same number of sheets. In the subproblem for the floors below x, the glass pane breaks so we use one less sheet in that subproblem.

d)

e)

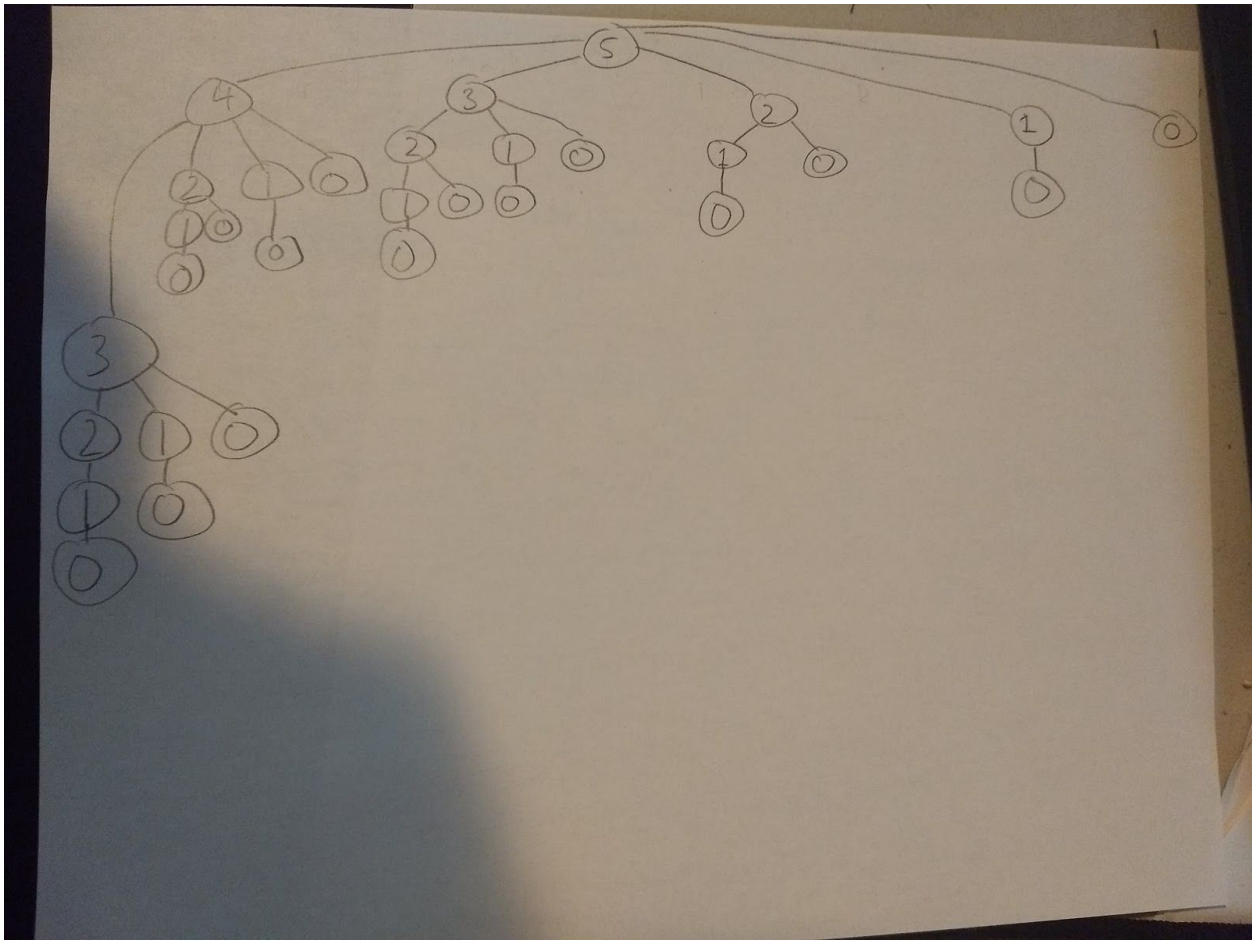
f) To memoize this problem, I would use a table placed outside the recursion to store the minimum worst case for n floors and m sheets. While going through each subproblem, the algorithm will check if the minimum worst case has been stored and if not, it will recursively solve.

Rod Cutting

b)

length	1	2	3	4	5	6	7	8	9
price	1	3	9	9	10	15	21	25	26
Density:	1	1.5	3	2.25	2	2.5	3	3.13	2.8

Given a rod of length 10. Greedy solution would pick rod of length 8, then 2 which yields 28. Optimal solution would be to pick rods of length 7 and 3 yielding 30.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