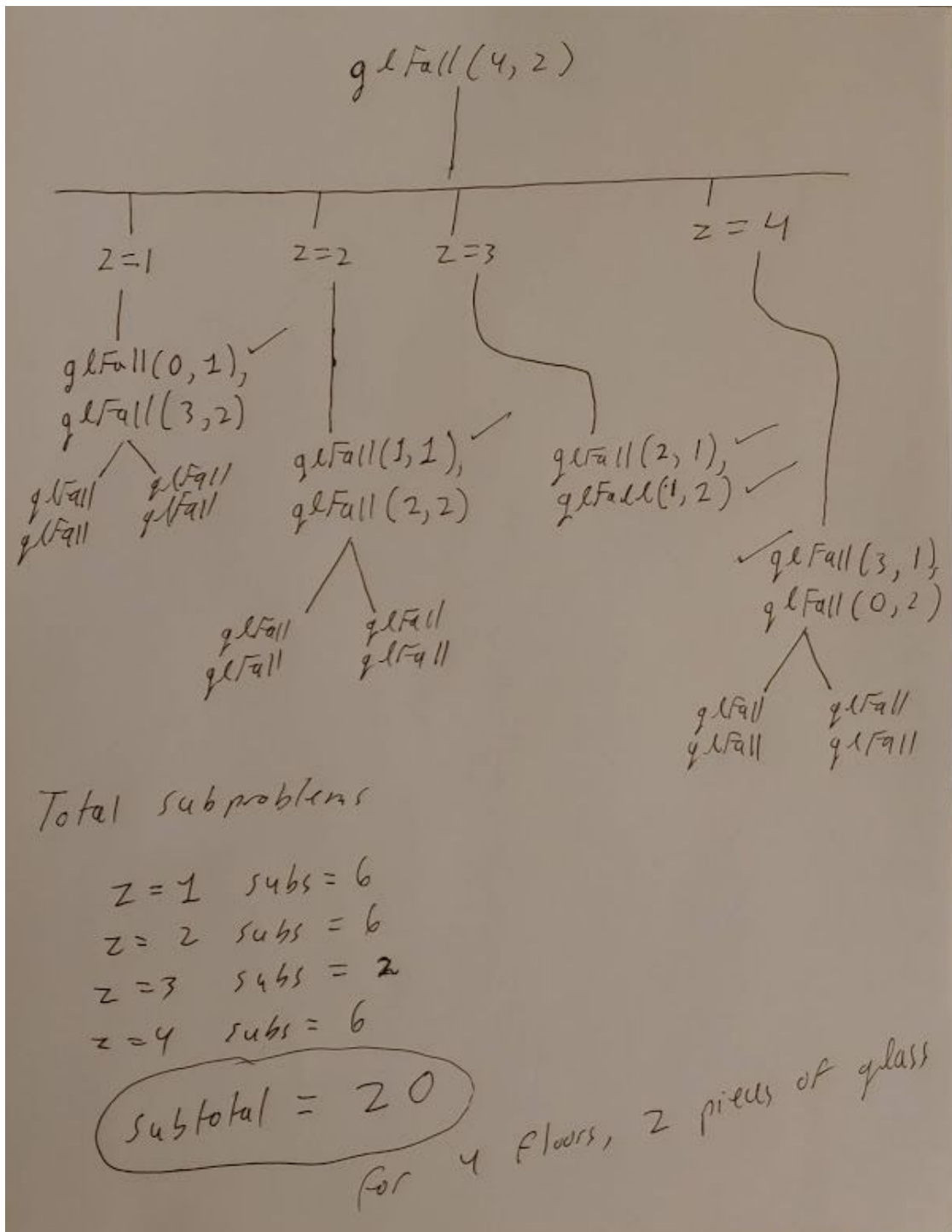


Deepak Khemraj
Glass Falling Problem Analysis



a) Optimal Substructure

We can make a few assumptions about this problem.

If a shard of glass breaks on a floor F then it breaks on all floors above F .

If a shard of glass does not break on floor F it will not break on any floors below F .

By these two assumptions the recursive base case is reached taking off z floors and one shard of glass on each recursive call until we run out of pieces of glass or we reach the first floor.

d) 20 subproblems need to be resolved (see attached recurrence tree)