Hints for Rock Climbing

- We can possibly model this as a graph with each grid cell as a vertex. Then, we can have weighted edges from the current cell, to every other cell reachable by a **single** move.
  - What is the out-degree of each grid cell (other than those at the edges of the grid)?
  - How many edges do we have, in terms of W, H? (A rough asymptotic/O-notation estimate is good enough here.)
  - If we run Dijkstra's/Bellman-Ford on this graph, what is their time complexity in terms of W, H?
- In the problem, Fluffy spends 1 effort per downward step, then 1 effort to land on the grid.
  - It does seem like while Fluffy is 'falling', he has the option to descend with cost 1, repeatedly.
  - If it cost exactly d effort to drop down d cells, then we can model this with a single edge per cell, pointing at the cell below, with cost 1.
  - In this case, we would have a constant number of edges per cell (i.e. $E = O(V)$).
  - However, the drop-down cost is $d + 1$. Can we capture this extra $+1$ cost somehow?
- We can see that if Fluffy is 'falling' within a cell, his movement options and costs are different from when he is resting in the same cell.
  - In a graph, the 'current options' we can choose from (the edges leading out from the current vertex), are completely determined by the current vertex.
  - However, in this problem, Fluffy's location doesn't seem sufficient to capture his options.
    If resting, he can use handholds to move upwards/sideways.
    If falling, he can drop down 1 cell at a time.
  - While staying in the same cell, can Fluffy go back and forth between 'resting' and 'falling' modes? What are the associated effort costs?