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day2 theory

The asymptotic space complexity for the IntGrid2D implementation is described by  $O(n^k)$ , which increases polynomially with the input. The number of memory cells that the algorithm needs defines the space complexity, so as the height and width of the grid increase or decrease, it changes the amount of memory required to store the grid.

Ex.

height = 1 width = 1 --> 1x1 grid - 1 square	$1^2$
height = 2 width = 2 --> 2x2 grid - 4 squares	$2^2$
height = 3 width = 3 --> 3x3 grid - 9 squares	$3^2$
height = 4 width = 4 --> 4x4 grid - 16 squares	$4^2$
height = 5 width = 5 --> 5x5 grid - 25 squares	$5^2$

This shows that the formula for the grid is  $n^2$