[1] Starting from the leftmost ball, how many paths are there to the rightmost ball, if one moves to the right at each step?



[2] How many paths are there from the lower left square to the upper right square of the grid below, moving only up or to the right, without passing through any shaded square?

- [3] How many ways can one fill a tube of length 8, using sticks of length 2, 3, and 4?
- [4] How many ways can one make change for 12 cents, using 1 cent, 2 cent, and 3 cent coins?
- [5] How many ways can one cut an 8-gon into three 4-gons?