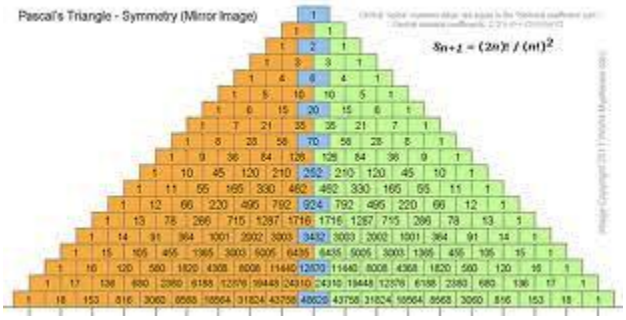
DATA STRUCTURES PROGRAMMING EXERCISE



Pascal's Triangle

Suppose we represent Pascal's triangle as a list, where item *n* is row *n* of the triangle. For example, Pascal's triangle to depth four would be given by:

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list(c(1), c(1, 1), c(1, 2, 1), c(1, 3, 3, 1))
```

The n^{th} row can be obtained from row $n - 1$ by adding all adjacent pairs of numbers, then prefixing and suffixing a 1.

Write a function that, given Pascal's triangle to depth *n*, returns Pascal's triangle to depth $n + 1$. Verify that the eleventh row gives the binomial coefficients of 10 indexed by *i* for $i = 0, 1, \ldots, 10$.