## Problem 1

Pascal's triangle contains the binomial coefficients:

where

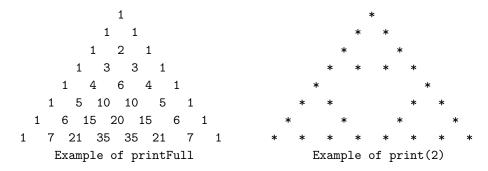
$$p_{r,c} = \binom{r}{c} = \frac{r!}{c!(r-c)!}. (1)$$

The coefficients can easily be computed from the recurrence relation

$$p_{r,c} = \begin{cases} 1, & \text{if } c = 1 \text{ or } c = r \\ p_{r-1,c-1} + p_{r-1,c}, & \text{otherwise.} \end{cases}$$
 (2)

Write a class pascal so that pascal(n) is the object containing n rows of the above coefficients. Include the following methods:

- 1. get(i,j), which returns the coefficient at position (i,j) (row,column).
- 2. printFull, to print the full display of Pascal's Triangle (shown below, left).
- 3. print(int m), which prints a star if the coefficient modulo m is nonzero, and a space character otherwise. As an example, the output of the method with m = 2 would be (shown on right):



*Note:* The object needs to have an array internally. The easiest solution: make an array of size  $n \times n$ .