

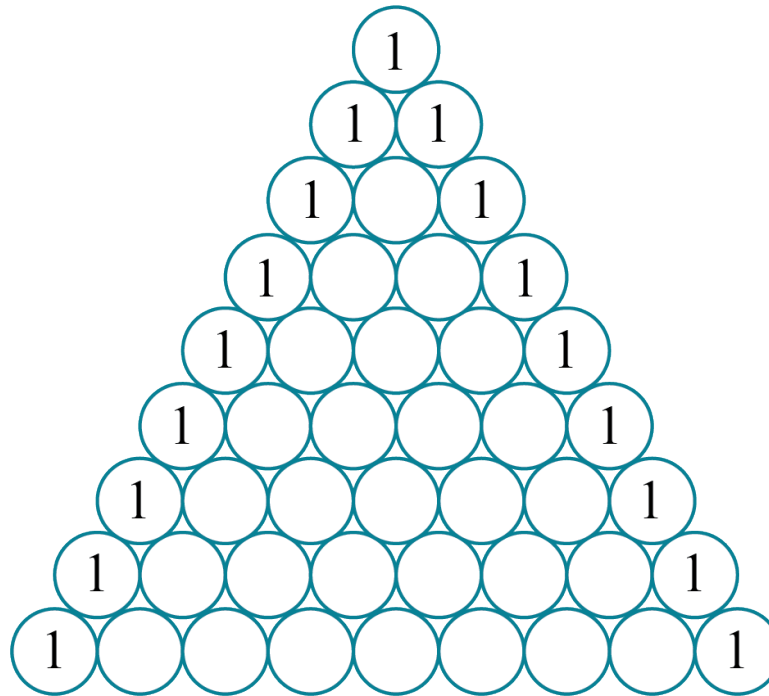


Problem of the Week

Problem A

Pencil Pyramid

Juliane arranges identical cylindrical tubes to form a pyramid. She puts one pencil in the top tube and then puts one pencil in the leftmost and rightmost tubes in each of the remaining rows, as shown.



Juliane then fills the remaining tubes as follows:

Step 1: Find the topmost empty tube and add up the number of pencils in the two tubes touching it in the row above.

Step 2: Put that many pencils in the empty tube.

Step 3: Repeat Steps 1 and 2 until all tubes are filled.

- (a) Complete the pyramid with the number of pencils in each tube.
- (b) Can you find any patterns in the numbers in the completed pyramid? If so, explain them.