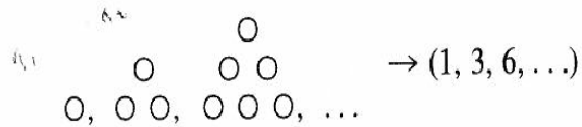


Appendix B Exercises:

5.

The ancient Greeks were very interested in sequences resulting from geometric shapes such as the following triangular numbers:



Write a recurrence equation for the  $n$ th term in this sequence, guess a solution, and use induction to verify your solution.

6.

Into how many regions do  $n$  lines divide a plane so that every pair of lines intersect, but no more than two lines intersect at a common point? Write a recurrence equation for the number of regions for  $n$  lines, guess a solution for your equation, and use induction to verify your solution.