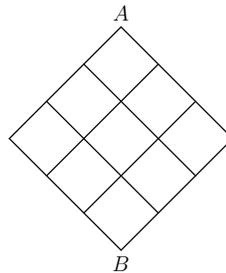




Try these problems before watching the lesson.

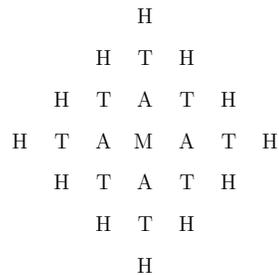
1. How many different paths are possible in moving from A to B given that you must move down to the right or down to the left?



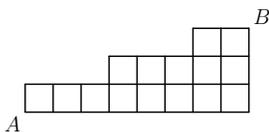
2. There are three allowable moves in the portion of the bee hive shown: from one cell to a cell directly to the right; from one cell to an adjacent cell which is up and to the right; or from one cell to a bordering cell which is down and to the right. How many distinct paths are there from cell A to cell B ?



3. Start at M in the diagram and form a path by moving to an adjacent letter to the right, left, up or down. How many paths spell the word MATH?

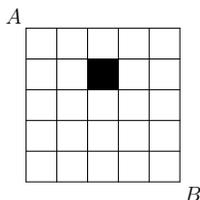


4. Moves are only allowed one segment to the right or one segment up. How many paths from A to B are possible?



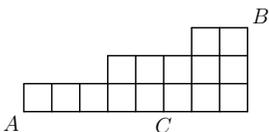
The Problem

In the figure, each segment between two adjacent vertices has length 1 unit. How many ways are there to go from A to B along a sequence of 10 segments without touching a side or vertex of the shaded square?

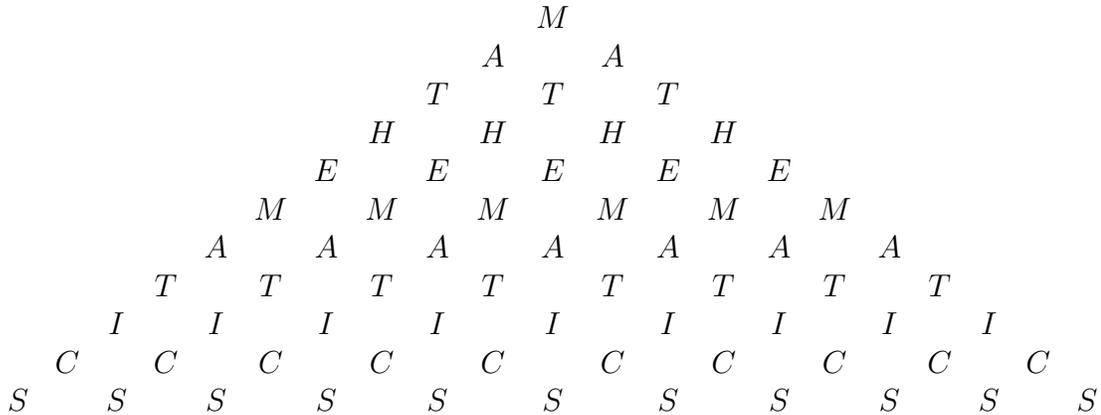


Follow-up Problems

5. Moves are only allowed one segment to the right or one segment up. How many possible paths from A to B do not go through C ?



6. Beginning with the letter *M* at the top of the triangle and reading diagonally downward to an adjoining letter, in how many ways is it possible to read MATHEMATICS?



7. In how many ways can you spell the word NOON in the grid below? You can start on any letter, then on each step you can move one letter in any direction (up, down, left, right, or diagonal). You cannot visit the same letter twice.

N N N N
 N O O N
 N O O N
 N N N N

 *Share Your Thoughts*

Have some thoughts about the video? Want to discuss the problems on the Activity Sheet? Visit the MATHCOUNTS Facebook page or the Art of Problem Solving Online Community (www.artofproblemsolving.com).