

**MATH 113: DISCRETE STRUCTURES
HOMEWORK DUE MONDAY WEEK 9**

Problem 1. A convex polygon with $n + 2$ sides can be cut into n triangles by connecting vertices with line segments which do not cross each other. This is called a *triangulation* of the original polygon. Show that there are C_n triangulations of a convex polygon with $n + 2$ sides. (Here C_n is the n -th Catalan number.)

Problem 2. How many labeled trees on n nodes are paths?