



# Lewis & Clark College

## Department of Mathematical Sciences

Problem of the Week #12	(Spring 2011)
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Let  $n \geq 4$  be an integer. Consider a regular  $n$ -gon with all of its diagonals. A triangle in the  $n$ -gon consists of three vertices on the  $n$ -gon's perimeter and the three edges (from the perimeter of the  $n$ -gon or its diagonals) connecting those vertices to each other.

**How many triangles in the  $n$ -gon have only diagonals for edges?**

Please justify your answer.

- This problem is due to Richard Neal of American Society for Mathematics. This is the last *Problem of the Week* for Spring 2011.
- Solvers should include their name, address, and status at the College. Solutions can be addressed to MSC 110 via campus mail or placed in Yung-Pin Chen's mailbox in the Math Department Office. Solutions to the above *Problem of the Week* should be received by 5:00 p.m. Monday, April 25, 2011.
- We received an incorrect solution to *Problem of the Week* #11.