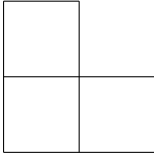# UW Math Circle
March 31, 2016
Homework

1. A tromino is an L-shaped piece, drawn below. Is it possible to cover a $2^n \times 2^n$ chessboard with **any** piece removed with trominoes?

2. Take an equilateral triangle and cut it into 4^n congruent equilateral triangles. (This happens if you "cut" the triangle into 2^n rows along each side–can you prove this?) The $n = 2$ case is pictured below. If you remove the top triangle, prove that it is possible to cover the resulting shape with trapezoids, as drawn in the picture below.
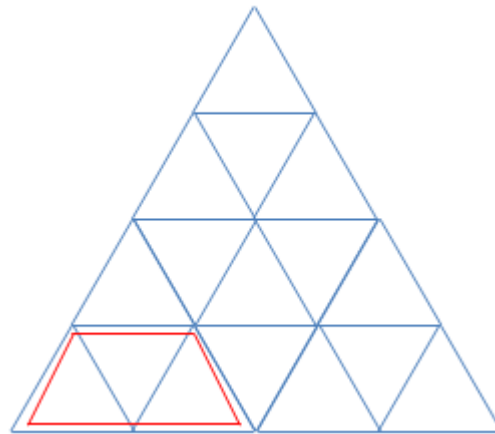
3. Prove that the sum of the interior angles of an n-gon is equal to $180(n - 2)$.