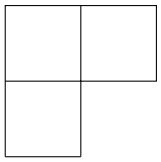
UW Math Circle

April 4, 2013

1. Show that if **any** square is removed from a $2^n \times 2^n$ chessboard, then the remainder can be covered by triominoes:



2. Show that any positive integer can be written as a sum of powers of 2.

3. Show that $n^3 + 2n$ is divisible by 3 for any positive integer n.