MATH 223 4 SEPT 2007

The theorem from lecture, that you can tile any $2^n \times 2^n$ checkerboard minus one square with  -shaped tiles, is NOT true for $2n \times 2n$ checkerboards! Can you find a counterexample?

Some additional facts you could try to prove using induction:

1) For $n \geq 1$, $\sum_{i=1}^{n} 2^i = 2^{n+1} - 2$.

2) For $n \geq 1$, $\sum_{i=1}^{n} i(i+1) = \frac{n(n+1)(n+2)}{3}$.

3) For $n \geq 5$, $4n < 2^n$.

4) For $n \geq 1$, $8^n - 3^n$ is divisible by 5.

If you are interested in hearing more about Lie algebras on Saturday, talk to me after class on Thursday!