Name:

Use mathematical induction to prove that for each natural number n,

$$2 + 5 + 8 + \cdots + (3n - 1) = \frac{n(3n + 1)}{2}.$$

Hint: Before you begin, you might want some rough work on the side where you plug both $n = k$ and $n = k + 1$ into the equation above. That way, when you get to the induction step, you'll know (a) what to assume, and (b) what you need to prove.