Problem 23. Use induction to prove that for every $n \in \mathbb{N}$, $\sum_{i=1}^{n} (2i - 1) = n^2$.

Problem 24. Use induction to prove that for every $n \in \mathbb{N}$, $9^n - 1$ is divisible by 8. 
(Hint: You will want to use some of the results from the handout on divisibility.)