## 8B Divisibility Proof By Induction

1. Prove, by induction, that $3^{2 n}+11$ is divisible by 4 for all positive integers $n \in \mathbb{Z}^{+}$
2. Prove, by induction, that the expression ' $n$ 3 $-7 n+9$ ' is divisible by 3 for all positive integers $n \in \mathbb{Z}^{+}$
3. Prove, by induction, that the expression ' $11^{n+1}+12^{2 n-1}$ is divisible by 133 for all positive integers $n \in \mathbb{Z}^{+}$
