**8A Introduction to Proof by Induction**

1. Prove by mathematical induction that, for
2. Prove, by mathematical induction, that for ,
3. Prove, by mathematical induction, that for ,

**8B Divisibility Proof By Induction**

1. Prove, by induction, that 32n + 11 is divisible by 4 for all positive integers
2. Prove, by induction, that the expression ‘n3 – 7n + 9’ is divisible by 3 for all positive integers
3. Prove, by induction, that the expression ’11n+1 + 122n-1’ is divisible by 133 for all positive integers

**5C Composite Volumes of Revolution**

1. Use mathematical induction to prove that:
2. Use mathematical induction to prove that: