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| **Literacy**  Induction, proof, assumption, inductive hypothesis, principle. | **Research**  **Proof by Induction Homework**  Research and write a paragraph about the history of mathematical induction. | **Memory**  4 steps for an induction proof:   1. Check the base case. 2. Assume true for some n = k. 3. Show that if it holds for n = k it does for n = k+1 too. 4. Conclude | | |
| **Skills**   1. Prove that is divisible by 3 for any non-negative integer. 2. Prove that for all positive integer . 3. Prove that for any integer . 4. Prove by induction, that if with and , then 5. For the matrix prove by induction that . | | | **Stretch**  Prove the following for all positive integers, when |