MATH 321: IN-CLASS WORKSHEET 1
FRIDAY, JANUARY 15TH

This worksheet is about the following theorem, the subject of chapter 2 of the textbook. Today's activity is graded based on participation; you do not need to submit anything.

Theorem 1. *The number $n^2 - n$ is even for any natural number n.*

(1) Try to prove this theorem yourself. Once you have a proof, write it up as a short paragraph, suitable for showing someone else why this theorem is true.
(2) In chapter 2 of the textbook (starting on page 9), seven different proofs of this result are given. Compare your proof to those in the textbook. Did you independently discover one of them?
(3) Pick one of the seven proofs from the textbook, with every member of your group choosing a different proof. Read through the proof and make sure you understand it. Then take turns presenting your chosen proofs to the rest of your group.
(4) If you have time, work together to generalize this theorem, and try to solve exercises 2.5–2.8 from the textbook.