

# WMS Math Challenge

April 22, 2010

## The game of Sprouts

**Instructions:** The game of Sprouts is a pencil-and-paper game that you will play with your partner. Here are the rules:

1. Start by drawing two dots on your paper.
2. Players take turn making moves. To make a move, you must
  - a. either draw a line between two dots on your paper or draw a loop from one dot back to itself, and then
  - b. draw a new dot on the new line.
3. But there's a catch!
  - a. The line you draw does not need to be straight, but it cannot cross itself or any pre-existing lines on the paper.
  - b. No dot can have more than three lines attached to it.
  - c. A line that connects a dot back to itself in a loop counts as TWO lines that touch the dot.
4. The player who makes the last move wins.

Play Sprouts with your partner. Keep track of who wins. Try to come up with a strategy for one of the players. What happens if you start with more than two dots? What if you start with one dot?