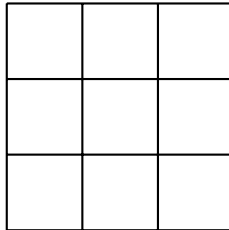# UW Math Circle
November 2, 2017
Homework

1. A loose leaf notebook consists of 100 sheets of paper. Number them, front and back, from 1 to 200. Tear out any 25 of the sheets, and add up the 50 page numbers on them. Can you choose the sheets so that the sum of the 50 numbers is 3000?

2. (a) Show that every magic square made of the numbers 1 through 9 has the same number in its middle square.

   (b) How many magic squares are there made of the numbers 1 through 9?

3. Three grasshoppers are playing leap frog on a line. At each turn, one grasshopper jumps over one other grasshopper (but not over the two other grasshoppers). Is it possible for the grasshoppers to return to their original configuration after 2016 turns? What about 2017 turns?