

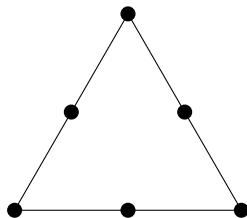
Math 11200/20 homework 1  
Due date: Friday, September 30, 2016

Note: You shouldn't need to use a calculator for these problems.

Please justify your answers. Think of it this way: you need to be able to convince your classmates that your answer is correct.

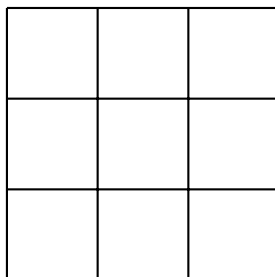
**Problem 1.1.** Please fill out the survey if you haven't already! <https://goo.gl/forms/ZYJ19tELDEIL3Fxp2>

**Problem 1.2.** Recall the triangle game from the 9/26 class.



- (a) What if instead of  $\{1, 2, 3, 4, 5, 6\}$ , we use  $\{7, 8, 9, 10, 11, 12\}$ ?
- (b) What if (using  $\{1, 2, 3, 4, 5, 6\}$ ), we take the product along each of the three sides instead?

**Problem 1.3.** Can you place the numbers 1 through 9 in the 9 squares so that the sum of each row, column, and diagonal is the same? How many ways are there to do this? (Hint: what numbers can go in the center?)



**Problem 1.4.** Can you place the numbers 1 through 6 in a  $2 \times 3$  grid so that the sum of each row and column is the same? How many ways are there to do this? What about the numbers 1 through 12 on a  $3 \times 4$  grid? What about the numbers 1 through 20 on a  $4 \times 5$  grid?