# UW Math Circle 

October 13, 2016

1. Twenty five boys and twenty five girls are sitting on a round table. Is it possible that every person is sitting next to a boy and a girl?
2. Can you fill in the expression $1 \_2 \_3 \_\_4=0$ with + or - signs to make it true? What about the expression 1 _ 2 __ 3 _ 4 _ 5 _ 6 _ $7 \_8 \_9 \_10=0$ ?
3. A magic square is a square array of boxes with a different number in each box, so that the sum of the numbers in each row, column, and diagonal of the box are the same.
(a) Is it possible to make a $2 \times 2$ magic square?
(b) Make a $3 \times 3$ magic square.

(c) Is it possible to make a magic square out of the first 36 prime numbers?

