# UW Math Circle 

October 19, 2017
Homework

1. If you start with four knights placed on a $3 \times 3$ chess board as shown on the left, is it possible to move them into the position on the right if two knights are never allowed to occupy the same square? Remember, a knight moves in an $L$ shape: two squares in one direction and one in the other.

2. A knight begins in the lower left hand corner of the chessboard. Can it travel to the upper right hand corner of the chessboard, hitting each square exactly once in the process. Remember: a chessboard is $8 \times 8$, and a knight moves in an $L$ shape: two squares in one direction and one in the other.
3. Can you find two whole numbers $a, b$ so that $a b(a-b)=1000000000000000000000001$ ?
