

Two is the Best Number (Part 2)

1 Warm-Up

1. A chess rook stands at the bottom left corner of a 5 x 5 chess board – the one marked with a star in the figure. Being lazy, this rook does not like to move far – in a single step it moves only one square up, down, right, or left. For exercise, the rook is supposed to tour the entire chessboard, visiting each square just once.



- (a) Can the rook end its walk on the square marked with a flower?
- (b) Can the rook end its walk on the square marked with a smiley face?
- (c) Can the rook end its walk back on the square with the star?

2 Nice to Meet You

2. Divide up into groups of three, four, or five, and shake hands an odd number of times with people in your group. Keep track of how many times you shake hands. You can shake hands with the same person more than once, but you cannot shake hands with yourself. Can you do it?
3. Suppose you shake hands with each other person in your group once and only once. How many total handshakes will there be ... if your group contains 4 people? 7 people? n people?