

## MATH 102: IDEAS OF MATH

### WORKSHEET 13

#### 1. Problems

*Problem 1.* Prove that the minimum number of moves in the problem of tower of Hanoi is

$$2^n - 1.$$

*Problem 2.* Given  $n$  lines, what is the maximum number of regions can the lines divide into?

Prove the formula that you conjecture using induction.