

Homework Assignment #14
Due: November 19, 9:30 a.m.

1. Give a combinatorial proof that $\binom{2n}{2} = 2\binom{n}{2} + n^2$.
2. Karl has 27 (indistinguishable) loonies. He wants to distribute his wealth among his three friends, Vladimir, Friedrich and Leon (or at least some part of his wealth; he might keep any number of the loonies for himself.)
 - (a) How many ways are there for him to do this? Briefly explain why your answer is correct.
 - (b) How many ways are there for him to do this if he wants to give each friend at least 1 loonie? Briefly explain why your answer is correct.