Math 212, 1-16-13

1.4 Group Work

Subsets of Size 2, a.k.a. the Pairs(n) Problem

1. Random partners will be determined by BW.
2. In a set of 2 children, there is (of course) just one pair that can be formed. In a set of 3 children, there are 3 different pairs which can be formed – check this out for yourself and make sure you see what I mean.
   1. In a set of 4 children, Alice, Bo, Ciara, and Dion, how many ways can we form a pair of children? (What strategies are useful here?)
   2. Repeat for a set of 5 children: Eden was just added to the class.
   3. Repeat for a set of 6 children: Franklin was just added to the class.
   4. In a set of n children, where n is an integer and n ≥ 2, how many ways can we form a pair of children?
   5. Let Pairs(n) denote the number of pairs among n children. Pairs(n) is an infinite sequence. Write down the first 5 values (n goes from 2 to 6 – see work above).
   6. Draw the top part (the first 6 rows) of Pascal’s triangle in the space below. Can you find the sequence Pairs(n) in the triangle?