

Math 358-Week Two Homework

Due September 16 in class.

1. Do Problems 1.3-1,3,4,5,6 and 1.4-1,2,4
2. (a) Count the number of ways of writing the number n as an ordered sum of 1's and 2's. (In the case where $n = 4$, there are 5 ways: $1+1+1+1$, $2+1+1$, $1+2+1$, $1+1+2$, and $2+2$.
(b) Revisit Exercise 1.3.4, and give a combinatorial proof of what you found there.
3. In class, we discussed $W(n)$, the number of words on a set of n distinct letters. For which values is $W(n)$ odd?
4. Experiment with different colorings of K_6 where the edges are red and blue. We showed in class that one needs at least one monochromatic triangle. What is the minimum number of such triangles?

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