TO DO List for Old Ramsey Gang: Ramsey Multiplicity

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1) Seeking many Mono K_3's in 2-colorings of K_n

1. Write a program that will, given n, form a 2-coloring of $\binom{[n]}{2}$.
2. Write a program that will, given a 2-coloring of $\binom{[n]}{2}$, determine ow many mono K_3's it has.
3. Combine the two programs above to do the following:

   The program will be forming a table to be described in the code.

   For $n = 6$ to 40 (Might use a lower value if this is to time consuming) Do the following 100 times

   (a) Randomly color $\binom{[n]}{2}$.

   (b) Count how many mono K_3's there are. Record it somewhere.
4. Add to the chart a row with

   n, the min number of mono K_3's, the max number of mono K_3', the average number of mono K_3's.

2) Seeking many Mono K_4's in 2-colorings of K_n
Similar to **Seeking Many Mono K_3's** except that now its K_4's.

3) Seeking many Mono K_3's in 3-colorings of K_n
Similar to **Seeking Many Mono K_3's** except that now its K_4's.

4) Seeking many Mono K_4's in 3-colorings of K_n
This may not run fast enough to give answers.)
Similar to **Seeking Many Mono K_3's** except that now its K_4's.

5) Seeking many RAINBOW K_3's in 3-colorings of K_n
Rainbow means all three edges are different colors.
Similar to **Seeking Many Mono K_3's** except that now its K_4's.