

I call the current version ordadd.tex rather than bothering using a different name. In this email I will answer your questions and indicate what corrections I've made.

1. Page 2. Def 1.2.2. YES it should be the induced hypergraph on H . I made these corrections.
2. Page 2. Def 1.2.3. YES, it should be finite big Ramsey degrees (plural). This is the definition in Balko et al and other papers we reference. I made these corrections.
3. Page 2. Def 1.2.4 Should be *The induced hypergraph on H* . I made these corrections.
4. Page 2. Def 1.2.4
Point (2) should be
COL restricted to $\binom{B'}{n}$
I made these corrections.
5. *Homogenous*: I have added a definition of both the Rado graph and the Henson graph. I do not use the term *Homogenous* since that is either a different definition of Rado and Henson. I need to check with Natasha or Chris Lastowski (he is a logician in the math dept here who I think knows this sort of thing) to make sure the definition is correct.
6. Typo: $T(K_2, 2)$ should be $T(K_2, R_2)$.
7. $T(n, R_2)$ exact value. I find the paper impossible to read and I only think it has the exact values because other papers say so. I also only think the next paper gives a method to compute those values because another paper says so. This area needs to be cleaned up (another REU project?) I wanted Natasha to verify that all of this is correct.

OPTIONS

- (a) Wait for Natasha to comment on this and take her word for it.
- (b) Have you try to read the papers and see what you think (You need not try very hard- if you are NOT enlightened after the first X minutes then quit.)

- (c) Trust the other papers that say so and leave it as it is.
8. This is not quite an answer to your question, but I am thinking out loud here and want you to verify or tell me I am wrong.
- (a) Balko talks about coloring $\binom{B}{A}$. If for all A for all colorings of $\binom{B}{A}$ BLAH BLAH then B has finite big Ramsey degrees.
 - (b) Braunsfeld talks about coloring $\binom{B}{A}$. If for all A for all colorings of $\binom{B}{A}$ BLAH BLAH then B has finite big Ramsey degrees.
 - (c) Dobrienen in her paper (she tells me) talks about coloring all $\binom{B}{n}$. If for all n for all colorings of $\binom{B}{n}$ BLAH BLAH then B has finite big Ramsey degrees.

So we have two DIFF definitions of big Ramsey degrees. I call them BALKO-DEF and DOB-DEF.

I think DOB-DEF IMPLIES BALKO-DEF which is fine since one could say that Dobrienen shows H_k has big Ramsey Degrees by proving a stronger result

We show DOB-DEF IMPLIES BALKO-DEF

Assume B has finite Ramsey degrees via DOB-DEF. Hence For all n for all colorings of $\binom{B}{n}$ BLAH BLAH.

We show that B has finite Ramsey degree via BALKO-DEF. Let A be any hypergraph. Let COL be a coloring of $\binom{B}{A}$. Assume A has n vertices. COL colors SOME of $\binom{B}{n}$. Color all the elements in $\binom{B}{A} - \binom{B}{A}$ with a NEW color that has not been used. Apply DOB-DEF to get H such that COL restricted to $\binom{H}{n}$ uses at most d colors. Then COL restricted to $\binom{H}{A}$ uses at most d colors. So has finite Ramsey degrees via BALKO.

- 9. How can something be exact but not explicity
- 10. For $T(n, R_a) < \infty$ I DO want to put “finite Ramsey degree” to remind people that we get that from $T(n, R_a) < \infty$. I will also put in quantifiers for all n.
- 11. H_k - the comment ‘Finite big Ramsey Degree’ I have added to the definition of $T(n, B)$ and changed the table. See my comments in the paper.