Cover Page PhL 9.9.11

This binder holds a grab-bag of matrix stuff, with no strong by-topic organization.

Section 0 (front, no tab)

• The **Matrix Binder Contents** doc does give a summary of what is in the binder, describing each tabbed section a bit.

Since making this binder in 2004, a few documents have appeared in my Alta matrix folder. I will review those here, with the oldest first, in that order:

• **matrix theorem clarification.doc** which seems do some EV items. Hard copy of this doc is at the end of Section 1. (in binder)

• **old matrix notes index.doc**. This is an index of my old hand-written matrix notes. This doc and those notes are in the MATRIX section of the binder, near or at the end. (in binder)

• **does inverse commute with transpose.doc**. It does, but I was confused at the time and wrote this.

• **the matrix rollup theorem.doc**. This is a pretty fancy theorem that looks like a diagonal Cramer's Rule for an infinite number of linear equations. I think it arises in Frobenius theorem, and I see I did not prove the theorem. (not in binder)

• **Matrix Theorems Addendum.doc** This where I throw in new simple theorems that I cannot find in the big mess, or which really are "new" to me. (not in binder)

Section 1 (first numbered tab)

• **Review of Matrix Theorems** attempts to list off every single matrix "theorem**"** or fact there is. This list is sorted by later binder section, and is thus at least partially organized by topic, and thus you know where to go for a proof or more details. Warning: this list of theorems does not include those of the MATRIX section at the end, my old hand-written notes. That section has its own index at the start of the section.

• the "**clarification**" document noted above.

• a one page "comment on **diagonalization**