

Math 331 Midterm #2 Review Sheet

Marvin the Martian

February 25, 2007



Hi kids. This is Marvin the Martian here to complain about Corey's ridiculous description of martians during his lecture about section 4.7. See below for details about that section. At the same time I thought I'd give you a review sheet describing what else you'll need to know about the upcoming exam. ROCK ON.

1. Section 4.7: Coordinates and Change of Basis. There is one simple task in this section that need not ridicule martians: be able to express vectors in terms of another basis. It's easiest if you change from a weird basis to the standard basis. If Corey gives you a weird basis, then the transition matrix to the standard basis has columns that are the weird basis vectors themselves. See the class notes for examples. Corey really didn't need to say he was from Mars to get his point across. But hey, what's a martian who wears a metal skirt, oversized sneakers, and a broom-helmet going to do? Also remember the rules for going the other way: if P is the transition matrix from basis $\mathcal{B} \rightarrow \mathcal{B}'$, then P^{-1} is the transition matrix from basis $\mathcal{B}' \rightarrow \mathcal{B}$. Also, if Q is the transition matrix from basis $\mathcal{B}' \rightarrow \mathcal{B}''$, then QP is the transition matrix from $\mathcal{B} \rightarrow \mathcal{B}''$. That's P first on the right, then Q next.
2. General Suggestions: The second midterm should look a lot like the 2nd quiz, and additional material from section 4.7. Chapter 5 will be on a later quiz and test. Be sure to learn from your quiz mistakes, review the material from section 4.7 and contact Corey if you need more help!

ROCK ON!!!