MATH 544 (Section 001)
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Homework Problems for Chapter 4
Vector Spaces and Linear Transformations

Section	Page	Problems
4.2	306	# 2, 3, 4*, 6, 7, 8, 10, 11, 17, 18, 19, 25, 27, 28, 29*, 36
4.3	314	# 1, 2, 4, 6, 7, 8, 11, 14*, 18, 19, 20, 22, 23*, 28, 31
4.4	328	# 1, 2, 5, 6, 7*, 8, 10, 12, 13, 18, 19, 30*, 31
4.5	333	# 1, 3*, 4, 5, 6, 7, 8, 9, 10*, 11, 12, 13
4.6	344	# 1, 3, 4*, 5, 14, 16, 18, 19*, 32
4.7	353	# 1, 2, 3, 5, 6*, 8, 9*, 11, 12, 13
4.8	362	# 1, 2, 3, 4*, 5, 7*, 10
4.9	374	# 1, 2, 3, 4, 5, 6, 8*, 17*
4.10	384	# 1, 2, 3, 5*. 14*, 15
Review	385	Supplemental Computational Exercises # 1, 3, 5, 6, 7, 8, 9, 12
Review	387	Supplemental Conceptual Exercises # 1, 2, 4, 5, 6, 11

<u>Notes</u>

- This is the final chapter that we will be discussing. Successful mastery of this material depends critically on the understanding of the topics introduced in Chapter 2: subspace, independence, basis, dimension, ...
- The terminology is critical! If you don't understand what the question is asking, there is virtually now way to know what the question asks you to do.
- Problems marked with an asterisk (*) will be collected and graded. In general, problems will be due the day following the lecture in which the section was discussed.
- These problems have been selected as the minimum amount of work that you should be doing for this course. Some problems will be straightforward computations; some will require the construction of a logical argument using the terminology and concepts discussed in class; some problems will require you to expand your knowledge (with given information) and apply this to a new setting.
- If you need more practice, there are many other problems in the text that are similar to the ones I have assigned.
- There are two sections of review problems at the end of each chapter. None of these problems will be collected for grading. These problems should be a good test of your understanding of the main points in the chapter. I suggest solving these problems as one part of your preparation for an exam.
- Be sure you know how to do all of these problems. Do not hesitate to ask questions – in class, by e-mail, or during office hours.