

MATH 216 PROBLEM SET 11: DIMENSION AND NONSINGULARITY

This set is due at noon on Friday, January 29. Hand it in to my mailbox by 4:15 pm. You can also give it to me in class.

Please *read all of the problems*, and ask me about any statements that you are unsure of, even of the problems you won't try. Hand in at least thirteen solutions, where each "-" problem is worth half a solution, and each "+" problem is worth two solutions. If you are ambitious (and have the time), go for more. Up to two can be from earlier problem sets if you'd like. Try to solve problems on a range of topics. You are encouraged to talk to each other, and to me, and to anyone else, about the problems. Some of these problems require hints, and I'm happy to give them!

Problems from the January 22 version of the notes: 12.1.C, 12.1.D, 12.1.E-, 12.1.F, 12.2.A+ (only if you haven't seen this before), 12.2.B+, 12.2.C, 12.2.D, 12.2.E, 12.3.A-, 12.3.B-, 12.3.C+, 12.3.D, 12.3.E+, 12.3.F-, 12.3.G, 12.4.!, 12.4.B, 12.4.C, 13.1.A, 13.1.B, 13.1.C, 13.1.D+, 13.1.E, 13.1.F, 13.1.G, 13.2.A, 13.2.B, 13.2.C, 13.2.D, 13.2.E, 13.2.F, 13.2.G, 13.2.H-, 13.2.I, 13.2.J, 13.2.K, 13.2.L-, 13.2.M-, 13.2.N ("Exercise 13.2.5(a)" should be "Remark 13.2.5(i)"), 13.3.A-, 13.3.B, 13.3.C, 13.3.D, 13.3.E, 13.3.F, 13.3.G, 13.3.H, 13.3.I, 13.3.K. (I forgot to discuss everything from 13.3.9 onwards — Exercise 13.3.G onwards — but will talk about it on Wednesday, January 27.)

The usual additional (mandatory!) question: (a) Which problems did you particularly like, and why? (b) Which ones did you like less? (c) What is the most confusing topic so far? (Thanks to everyone who has answered this question in the past!)

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