

MATH 216B PROBLEM SET 2

This set is due by noon on Thursday, March 13. Hand in your homework to me by email unless that's particularly annoying for you to do.

Please *read all of the problems*, and ask me about any statements that you are unsure of, even of the many problems you won't try. If you are stuck on any problems (including ones not assigned) — and you should get stuck — please feel free to come and talk with me. Many of you have seen much of this material, and I don't want you to waste your time; please just work on problems that you haven't thought through before. If you have already gone through this material in depth before, just let me know, and I'll propose something else for you to do.

You are encouraged to talk to each other, and to me, about the problems. If you don't know people, but would like to work together, just let me know, and I'll introduce you to others. Some of these problems require hints, and I'm happy to give them!

Hand in at least **fifteen** solutions. If you are ambitious (and have the time), go for more. You should try the starred problems unless you have seen them before. Other exercises are described as useful or important, so you may want to try those. Try to solve problems on a range of topics (e.g. at least one from each section you haven't seen).

Problems (from the June 11, 2013 version): 13.7.A, 13.7.B, 13.7.D, 13.7.E, 13.7.F, 13.7.G, 13.7.J, 13.7.K, 14.1.C*, 14.2.E*, 14.2.G, 14.2.H, 14.2.I*, 14.2.J, 14.2.K, 14.2.M, 14.2.N, 14.2.O, 14.2.Q, 14.2.R, 14.2.T, 14.2.V, 15.3.A, 15.3.B, 15.3.C*, 15.3.E, 15.3.F*, 16.2.B, 16.2.C, 16.3.A, 16.3.B, 16.3.C, 16.3.D, 16.3.E (worth 3 problems; you can do a representable sample of 3 or 6), 16.3.G, 16.3.H, 16.4.H, 16.4.I, 16.4.J, 16.5.A, 16.5.B, 16.6.A, 16.6.B, 16.6.C, 16.6.E, 16.6.F, 16.6.G, 16.6.H, 17.1.A, 17.1.B, 17.1.D, 17.1.H, 17.2.B, 17.2.C, 17.2.G, 17.3.A, 17.3.B, 17.3.D, 17.4.A, 17.4.C, 17.4.D*, 18.1.A (only if it entertains you), 18.1.B*, 18.1.C, 18.2.A (to do if you've never seen cohomology before), 18.2.E, 18.2.F, 18.2.G, 18.2.H, 18.2.I, .

If you feel like other problems are interesting enough that they should be done, please do them, and I'll count them for half a problem or a whole problem (depending on how hard *you* think they are).

A **mandatory** question. (A sentence for each part suffices.) (a) Which problems did you particularly like, and why? (b) Which ones did you like less? (c) What is the most confusing topic we've discussed?

E-mail address: vakil@math.stanford.edu