## CSE191, Fall 2013 Assignment 4 Due 10/4, in class

Next week I have to cut my Monday office hours short about 2pm to catch my 4:20 flight to Europe. I return late on Tue. Oct. 8. The TA office hours will be the same as usual: Tuesdays 2–4pm (Tianle Ma, 302 Davis); Wednesdays 10–11am (Michael Wehar, 302 Davis) and 1–2:45pm (Tao Wei, 302 Davis). I expect also to have much time online, so will be able to answer questions, in time zones 6 and 7 hours ahead.

**Reading:** Next week's lectures are in sections 1.7 and 1.8 up through "Existence Proofs" ending on page 99. The rest of that section is FYI. Then they will start on Chapter 2, emphasizing material not already part of the vocabulary we needed in Chapter 1. **Prelim I** is inked in for **Friday, Oct. 11**, *in class period.* It will cover up through the reading, except there will be no long problems from 1.7–1.8, and 2.1–2.3 is used only for vocabulary.

The following is exactly the same as the previous posted version of Assignment 4.

(1) Rosen, page 67, 28(f,g,h,i). Whenever an existentially quantified sentence is true give a witness; whenever a universally quantified sentence is false give a counter-example. (21 pts. total)

(2) Rosen, page 67, 30(a,b,c). (3+3+6=12 pts.)

(3) Rosen, page 78, 4(a–d)  $(4 \times 3 = 12 \text{ pts.})$  Extra credit: 6 pts. for (e) with a brief English prose explanation too. (The assignment thus has 93 regular-credit points plus 6 extra-credit points.)

(4) Rosen, page 79, 10(a,b,e,f).  $(4 \times 6 = 24 \text{ pts.})$ 

(5) Rosen, page 79, problem 12.—note that this refers to 11. which you should do as practice before looking in the solutions guide. (15 pts.)

(6) Rosen, page 79, problem 14. Show universal-instantiation and modus-ponens as being separate steps here. (9 pts.)

(7) Rosen, page 74, problem 28. (15 pts.)

(8) Rosen, page 91, problem 18. (12 pts., for 120 on the problem set)