Directions

1. This is an uncollected, ungraded homework. The answers to the Rosen text’s questions can be found at the back of the text. (Why aren’t we having a ‘real’ homework over this material? We don’t have time to grade another homework before the final exam.)

2. Even though this is ungraded, the questions cover material that is “fair game” for the upcoming exam. Thus, we strongly recommend that you take them as seriously as you take normal homework questions. That is, write complete answers to all of the questions, do your own work, and show that work, when appropriate.

3. The class staff will be happy to answer your questions about these problems in SI sessions, at the review sessions, during office hours, or via Piazza.

4. Incentive: To encourage you to work these problems, one of them will appear on the exam. Assuming that you work these problems – and remember what you did and learned – that exam question will be easy points.

Relation Basics:

- Section 9.1, 15
- Section 9.1, 17
- Let $R = \{(\text{green}, 4), (\text{red}, 0), (\text{blue}, -2), (\text{green}, 0), (\text{red}, 4)\}$ and $S = \{(4, \text{ red}), (0, \text{ blue}), (1, \text{ red}), (-2, \text{ green})\}$. What are the evaluations of both $R \circ S$ and $S \circ R$?
- Section 9.1, 37(d)

Representations of Relations:

- Section 9.3, 3(c)
- Section 9.3, 5
- Section 9.3, 13(a,b)
- Section 9.3, 19(a)
- Section 9.3, 21(b)
- Section 9.3, 33

(Continued . . .)
Equivalence Relations:
- Section 9.5, 5
- Section 9.5, 13
- Section 9.5, 21
- Section 9.5, 41(all)

Partial and Total Orders:
- Section 9.6, 1(d,e)
- Section 9.6, 3(a,c). “poset” is short for “partially ordered set.” See Definition 1 on page 650.
- Section 9.6, 7(all). Be sure to check each for weak as well as strict!
- Section 9.6, 9. Be sure to check it for both weak and strict!
- Section 9.6, 11. Be sure to check it for both weak and strict!
- Section 9.6, 15(all). In (a), the “P” means “power set.” In (b), “|” is “divides.”
- Which, if any, of the relations from 7, 9 and 11 that are weak partial orders are also total orders?