

CSI 35, Homework 3 on sections 9.5, 9.6

Due by Wed, Sept 28.

Here are ten questions for you to try, with some from the textbook. Write all your working out and answers on your own notepaper - no need to write the questions. Please use lots of space.

It is very important that you show clearly any work you had to do to get your answers. Just writing the answer down with no work shown is usually not enough.

- (1) Question 2 on page 615.
- (2) Give two equivalence relations on the set of all buildings in New York City and explain why they are equivalence relations. Write "building A is related to building B if" when giving your relations.
- (3) Question 22 on page 616.
- (4) Let $A = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9\}$ and let R be the equivalence relation on A given by

$$R = \{(a, b) \mid a \equiv b \pmod{3}\}.$$

Find the distinct equivalence classes of R and show the partition of A they make.

- (5) Question 48, part (a) only, on page 617.
 - (6) Question 2, parts (b), (c) only, on page 630.
 - (7) Give two partial orders on the set of all buildings in New York City and explain why they are partial orders. Write "building A is related to building B if" when giving your relations.
 - (8) Question 10 on page 630.
 - (9) Question 22 on page 631.
 - (10) Question 32, parts (a), (b), (c), (d) only, on page 631.
-

If you understand the homework questions then you will be able to do the exam questions. You can also try the other questions listed on the syllabus to get extra practice. For any difficulties with the homework, please email me any time.