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) Let $A = \{8, 9, 10\}$ and $B = \{w, x, y, z\}$. Give an example of a relation from A to B with five ordered pairs. Use the correct notation for your answer.

(2) List the ordered pairs in the relation R on the set $\{3, 4, 5, 6, 7, 8\}$ where $(a, b) \in R$ if a divides b.

(3) Let T be the relation $\{(2, 3), (3, 2), (4, 4)\}$ on the set $\{1, 2, 3, 4, 5\}$. Explain why T is or is not symmetric.

(4) Give an example of a single relation on the set $\{6, 7, 8, 9\}$ that is both reflexive and symmetric.

(5) Question 6, part (e) only, on page 581. (Explain for each of the four properties.)

(6) Question 30, part (b) only, on page 582.

(7) Question 32 on page 582.

(8) How many possible relations are there from a set with cardinality 3 to a set with cardinality 4?

(9) Let R be the relation $\{(1, 2), (1, 3), (2, 1), (2, 2), (2, 3)\}$ on the set $\{1, 2, 3\}$. Compute R^2 (the composition of R with itself) and then use this to decide if R is transitive.

(10) Question 2 on page 589.

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. If you don't understand a question or get stuck, please talk to me after class or come to my office hours so I can help.