The final will consist of filling in definitions and proving theorems, exercises, and examples from the text. The final exam is not cumulative, however you will have a very hard time understanding the topics of the second half of the course if you do not understanding the topics and proof techniques from the first half of the course.

Definitions:

- relation,
- reflexive,
- symmetric,
- transitive,
- antisymmetric,
- equivalence relation,
- equivalence class,
- partition,
- partial order,
- comparable,
- noncomparable,
- total order

Be sure that you know the exact definitions of these terms. A definition is very wrong if some of the symbols and words are out of order.

In your proofs you may assume any results from Chapters 1 and 2 along with the basic divisibility properties in Section 1 of Chapter 3. Additionally you may assume the Fundamental Theorem of Arithmetic and the various formulas for counting techniques.

The exercises in Chapter 4 require you to compute specific numbers. It is fine to leave your answers in terms of sums and products of integers, factorials, and binomial coefficients. However, it is essential you use the correct formula. As opposed to proofs, your solutions to these questions are either correct or incorrect, and there is little room for partial credit.

<table>
<thead>
<tr>
<th>Theorems to prove and Examples:</th>
<th>Exercises</th>
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</thead>
<tbody>
<tr>
<td>3.3.3, 4.4.4 (example), 4.4.6 (example), 4.4.7 (example), 4.4.9 (example), 5.2.4, 5.2.5</td>
<td>3.2#'s 10, 11, 3.3#'s 10, 14, 4.2#'s 4, 7, 4.3#'s 3, 4, 4.4#'s 5, 5.1#'s 3, 4, 5.2#'s 3, 5.3#'s 3, 4</td>
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