CSE 321: Discrete Structures
Assignment #7
May 14, 1999
due: Friday, May 21

Don't be dismayed by the length of this assignment: the problems are all short-answer, and many are routine. If your answer to a problem is large, you can leave it in terms of factorials, combinations, etc., for instance 26^3 or $P(26, 3)$ or $26\binom{26}{3}$. Show enough of your work so that we can see how you arrived at your answer.

1. A *partial function* from a set A to a set B maps some of the elements of A to elements of B, and leaves the rest undefined. For instance, an ordinary function is a partial function in which none of the mappings are left undefined, but $f(x) = 1/x$ is a function that leaves f(0) undefined (assuming that 0 is in the domain A). If $|A| = m$ and $|B| = n$, how many partial functions are there from A to B?
2. Section 4.1, exercise 12. Use the formula for a geometric series, Example 12 of Section 1.7. (Learn this formula: it is important.)
3. Section 4.1, exercise 24.
4. Section 4.1, exercise 38.
5. Section 4.1, exercise 42.
6. Section 4.1, exercise 46.
7. Section 4.3, exercise 4.
8. Section 4.3, exercise 14.
9. Section 4.3, exercise 16c.
10. Section 4.3, exercise 22.