Math 55: Discrete Mathematics, Fall 2008
Reading and Homework Assignment 2

Reading:

Lecture 5: 2.3, pp. 158-160 of 2.4 (on cardinality), 3.1
Lectures 6&7: 3.4–3.6

Homework (due Monday, 9/15):

Odd-numbered self-checking exercises:

3.1: 9, 31, 61
3.4: 3, 7, 21
3.5: 7, 17(c), 33
3.6: 21, 23(a,c)

Problems carried over from Assignment 1, for which I am allowing an extra week:

2.3: 16, 40, plus:
(C) Prove or find a counterexample to each statement: (i) If $f \circ g$ is one-to-one, then g is one-to-one; (ii) If $f \circ g$ is one-to-one, then f is one-to-one.
2.4: 32(b,c), 40

New problems to be handed in:

3.1: 24, 60, plus:
(A) Show that the following problem is unsolvable: given an algorithm A which is known in advance to halt on every input, to decide whether there exists an input I such A eventually outputs the symbol "1" when run with input I.
3.4: 4, 8, 22
3.5: 6, 18, 26, 34 [Hint: first check it for at least 6 values of n], plus:
(B) In problem 26, find all possibilities for the two integers with the given GCD and product.
3.6: 22, 24(f), 30