

**Math 55—Fall 2012**  
**Homework 7**

Part I: Not to be handed in.

4.4: 13, 17, 35, 36, 55, 65

4.6: 5(a), 9, 11, 23, 25, 29

Part II: Problems to hand in. One or two problems will be selected for thorough grading and count 10 points each. Others count 2 points each.

4.4: 26 [Hint: find an equivalent system of congruences modulo 2, 3, and 5], 38, 46 [on 46, also find a base for which Miller's test, discussed before Exercise 43, shows that 1729 is composite], 54.

4.6: 26

Additional Problem: use Pollard's algorithm (from lecture and additional notes) with the function  $f(x) = x^2 + 2 \pmod{n}$ , and starting value  $y_0 = z_0 = 2$  to factor the number  $n = 43489$ .