

## Problem of the Week 7: A Big Congruence

Compute the number

$$2^{5843} \pmod{1701}$$

by hand. Absolutely no calculators or computers. You can (and should) use well-known theorems and formulas in elementary number theory. Show your work. (Hint: This problem is really doable by hand easily) <sup>1</sup>

---

<sup>1</sup>Posted: 4/17/05 Submit your answers (by e-mail: aydinn@kenyon.edu or hard copy) before 4 pm on 4/29/05 to Noah Aydin, Mathematics Dept.