

Mathematics 216
Robert Gross
Homework 25
Due April 4, 2012

1. What is the remainder when 10^{400} is divided by 70?
2. What is the remainder when $1^6 + 2^6 + 3^6 + \cdots + 200^6$ is divided by 4?
3. What is the remainder when $1^6 + 2^6 + 3^6 + \cdots + 200^6$ is divided by 7?
4. What is the remainder when 7^{200} is divided by 33?