



PUTNAM EXAM SEMINAR
FALL 2013

ASSIGNMENT 2
DUE SEPTEMBER 16

Exercise 1. Prove that any positive integer (greater than 1) is either prime or a product of primes.

Exercise 2. Consider the sequence a_1, a_2, a_3, \dots defined by $a_1 = 1$, $a_2 = 2$, $a_3 = 3$ and $a_n = a_{n-1} + a_{n-2} + a_{n-3}$ for $n \geq 4$. Show that $a_n < 2^n$ for all $n \geq 1$.