

Math 495R Homework 7

- (1) Project Euler, problem 8.
- (2) Project Euler, Problem 4.
- (3) The Caesar (or shift) cipher with integer key n encodes a string of letters by translating each letter to a number using the 26 character alphabet $A = 00$, $B = 01$, ..., $Z = 26$, adding n to the number, taking the result modulo 26, and translating the result back to a letter. The effect is to shift each letter forward in the alphabet by n spaces, wrapping around at the end of the alphabet. Write two functions `shift_encrypt` and `shift_decrypt` that take an integer and a string of capital letters and encrypt or decrypt the string. For instance, the function `shift_encrypt(3, 'CAT')` should return `FDW`, and `shift_decrypt(3, 'FDW')` should return `CAT`. You should probably use your functions `int2string26` and `string2int26` from a previous assignment.