

Math 314 - Fall 2023

Practice problems 4 (Euler's Theorem, and Fermat Primality Test) Quiz: Nov 9 2023

Cryptography succeeds when it's no longer the weakest link.

— Ron Rivest

Practice:

- (1) Compute $\varphi(55)$ and $\varphi(54)$.
- (2) Find $10^{122} \pmod{55}$ without using a calculator.
- (3) Find the decryption function $D(y)$ corresponding to the encryption function

$$E(x) \equiv x^7 \pmod{54}.$$