



Chapter 2: Exercises

- 1 Both *arena* and *river* are possible decryptions of *EVIRE*.
- 2 The plaintext is *cat*.
- 3 The ciphertext is *QZNHOBXZD*, and the decryption function is $x \equiv -5y + 9 \pmod{26}$.
- 4 The encryption function is $y \equiv 11x + 14 \pmod{26}$.
- 5 The plaintext is *happy*.
- 6 There is no advantage, since the resulting cipher is also an affine cipher.

Chapter 2: Computer Problems

- 1 The plaintext is *watchoutforbrutus*.
- 3 The plaintext is *ifyoucanreadthisthankateacher*.

Chapter 3: Exercises

- 1 a) $x = 6, y = -1$.
b) $17^{-1} = 6$.
- 3 a) The solutions are $22 + 59n$ for all integers n .
b) No solutions.
- 4a) $\gcd(30030, 257) = 1$.
- 5a) $\gcd(4883, 4369) = 257$.