Northwestern University Electrical Engineering and Computer Science EECS310: Foundations of Computer Science Prof. Hai Zhou Oct. 22, 2007 Handout #5 Due: Oct. 29

## Homework 4

You may discuss the assignments with your classmates but need to write down your solutions independently. Be careful with your handwriting. Unclear solutions will be assumed to be wrong.

- 1. (20 points) Exercises 10.6, 10.7
- 2. (20 points) Exercises 12.2, 12.4
- 3. (20 points) Exercises 12.21, 12.23, 12.25
- 4. (20 points) Exercises 12.32, 12.38
- 5. (20 points) Exercises 12.42
- 6. (20 bonus points) Euclid's algorithm computes GCD(a, b) for integers a and b. It is also known that  $(\exists x, y \mid : x * a + y * b = GCD(a, b))$ . Can you modify Euclid's algorithm to output such x and y?