Assignment 1

Chapter 1: 2, 3, 5, 7, 10

Problems 2, 3, 5, and 7 ask you to write algorithms, and problem 10 asks you to analyze the algorithms you wrote.

Hint on problem 5: look up Euclid's algorithm.

Note on problem 7: Recall we can represent a binary tree in a list. The node at index i has its child nodes at indices 2i+1 and 2i+2. A heap has the property that the parent node is greater than or equal to each of its child nodes. For this problem, the algorithm should accept a list as its input and assume the list represents a binary tree. Return True or False depending on whether the list is also a heap.

Option for problem 7: Instead of the array implementation of a binary tree, you could go ahead and implement an entire Binary Tree class in Python and input an object of this class to the algorithm. We'll need to do this eventually in the course, and if you're up to it I'll leave it as an option here.