

## **HOMEWORK 1**

### **for Mathematical Models, Analysis and Simulation, Fall 2010**

Report due Mon Sep 6, 2010.

Maximum score 3.0 pts.

Read sections 1.1-1.4 and 1.6 from chapter 1 of Strang.

Solve the following problems:

1) **1.1:** 1,2,27

**1.3:** 11,15,16,17

**1.6:** 3,4,6,9

2) (Related to problem 1.3.11)

Look at p. 43 about the Sherman-Morrison formula, and use the technique (not the formula itself!) to i) prove definiteness of  $\text{ones}(n) + a \text{eye}(n)$  for any  $n$  and  $a > 0$ , and ii) to write the formula for the inverse.