

# Math 340 Review Problems for Exam 2

Marc Conrad

November 2, 2008

## 1 Problems from the book

Section 3.1: 3

Section 3.2: 15(b)

Section 3.3: 3

Section 3.4: 7(b)

Section 3.5: 1

Section 4.2: 8, 19

Section 4.3: 4, 15

Section 4.4: 3(a)(b)

Section 4.5: 3, 16

Section 4.6: 1, 21

Section 4.9: 9(a)

## 2 Problems from the Review Sheet

1. Give each of the definitions asked for in Section 1 of Prof. Nagel's review sheet.

2. Give proofs for each of the statements in Section 4 of Prof. Nagel's review sheet.

### 3 Additional Problem

Consider the matrix

$$A = \begin{bmatrix} 1 & 1 & 2 & 1 \\ 2 & 3 & 5 & 0 \\ 1 & 0 & 4 & 5 \\ 0 & 0 & 1 & 0 \end{bmatrix}$$

Compute the determinant of  $A$  by

- (1) Reducing  $A$  to row-echelon form
- (2) Cofactor expansion

**Hint:** For part (2) you can expand in any row (or column) you like, but it is easiest to expand in the fourth row (Why?)