

Linear Algebra II

MTH 317, Section 001, Spring 2018

Instructor: Bart Van Steirteghem

Problem Set 3.

Collaboration on homework is encouraged; individually written solutions are required.

Problems

Evaluate the determinant of the following matrices by hand:

a.
$$\begin{pmatrix} 1 & 2 & 3 \\ 8 & 9 & 4 \\ 7 & 6 & 5 \end{pmatrix}$$

b.
$$\begin{pmatrix} x^1 & x^2 & x^3 \\ x^8 & x^9 & x^4 \\ x^7 & x^6 & x^5 \end{pmatrix}$$

c.
$$\begin{pmatrix} 1 & 1 & 0 & 0 & 0 \\ -1 & 1 & 1 & 0 & 0 \\ 0 & -1 & 1 & 1 & 0 \\ 0 & 0 & -1 & 1 & 1 \\ 0 & 0 & 0 & -1 & 1 \end{pmatrix}$$

d.
$$\begin{pmatrix} 0 & 0 & 0 & 0 & 0 & a_1 \\ 0 & 0 & 0 & 0 & a_2 & b \\ 0 & 0 & 0 & a_3 & c & d \\ 0 & 0 & a_4 & e & f & g \\ 0 & a_5 & h & i & j & k \\ a_6 & l & m & n & o & p \end{pmatrix}$$