

Mate1009 Algebra — Lecture 3

Homework

24 February 2021

Problem 1. Let A, B, C, D be matrices defined by

$$A = \begin{bmatrix} 3 & 0 \\ -1 & 2 \\ 1 & 1 \end{bmatrix}, B = \begin{bmatrix} 1 & 5 & 2 \\ -1 & 1 & 0 \\ -4 & 1 & 3 \end{bmatrix}, C = \begin{bmatrix} -3 & -1 \\ 2 & 1 \\ 4 & 3 \end{bmatrix}, D = \begin{bmatrix} 4 & -1 \\ 2 & 0 \end{bmatrix}$$

Which of the following matrices are defined? Compute those matrices which are defined.

$$A + B, A + C, AB, BA, CD, DC, D^2 (= DD).$$