

PROBLEMS 5. 9.11.2011

Q1. Solve the equations

$$\begin{aligned}x_1 + 5x_2 + 2x_3 &= 9, \\x_1 + x_2 + 7x_3 &= 6, \\-3x_2 + 4x_3 &= -2.\end{aligned}$$

Q2. Find the determinant $|A|$ of

$$A = \begin{pmatrix} 1 & 5 & 2 \\ 1 & 1 & 7 \\ 0 & -3 & 4 \end{pmatrix}.$$

Q3. For

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

find AB , BA , DB , AC .

Q4. (i) For

$$B = \begin{pmatrix} 1 & 2 & 1 \\ 1 & 3 & 2 \\ 0 & 4 & 6 \end{pmatrix}, \quad E = \begin{pmatrix} a & 0 & 0 \\ 0 & b & 0 \\ 0 & 0 & c \end{pmatrix},$$

find BE , EB .

(ii) For any 3×3 matrix A , describe AE and EB .

NHB