ECON3120/4120 − Mathematics 2, fall term 06

Problems for seminar 8, 30/10-3/11.

1 (Exam problem 28/5-03)

(a) For which values of a does the matrix $\mathbf{A}_a = \begin{pmatrix} 1 & 2 & 3 \\ 0 & a-1 & 1 \\ 1 & 2 & a+1 \end{pmatrix}$ have

an inverse? Find the inverse if $a = 3$

(b) Let $\mathbf{B} = \begin{pmatrix} 2 & 0 & -1 \\ 0 & 1 & 1 \\ 0 & 2 & 0 \end{pmatrix}$. Find all matrices $\mathbf{X}$ such that $\mathbf{BX} = \mathbf{B}^2 + 2\mathbf{B}$.

2 Exam problem 31.

3 Exam problem 92.

4 Exam problem 98.