Control Number: _____

Department of Electrical and Computer Engineering

COMPREHENSIVE/BREADTH EXAM

Linear Algebra

The matrix A is given by

$$A = LUL^{-1}U^{-1}$$

for

$$L = \begin{pmatrix} 1 & & & \\ -1 & 1 & & \\ 0 & 3 & 1 & \\ 1 & 0 & 0 & 1 \end{pmatrix}, \qquad U = \begin{pmatrix} 2 & 0 & 1 & 1 \\ & -1 & 0 & -1 \\ & & -2 & 1 \\ & & & 1 \end{pmatrix}.$$

Write expression for inv A (A^{-1})
(Hint: No need to solve or invert any matrices.)

Determine det A