Name_____

Mathematics 205: Linear Algebra
Fall Semester 2004
David Haines
Quiz #14
October 7

Solve the linear system $\begin{bmatrix} 1 & 0 & 0 \\ -1 & 1 & 0 \\ 3 & 2 & 1 \end{bmatrix}\begin{bmatrix} 3 & 2 & 1 \\ 0 & 1 & 4 \\ 0 & 0 & 1 \end{bmatrix}\mathbf{x} = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$, taking advantage of the fact that the coefficient matrix has been factored into the form LU. This means you must first find $\mathbf{y}$ that solves the system $L\mathbf{y} = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$ and then find $\mathbf{x}$ by solving the system $U\mathbf{x} = \mathbf{y}$. No credit if you didn't find $\mathbf{y}$!