MATH 260, Homework 5, Fall '14
Due: September 26, 2014 at 2:20 PM
Honor Code: **Name:**
Section:

1) (5 pts) The inverse of the genereal 2×2 matrix $\begin{bmatrix} a & b \\ c & d \end{bmatrix}$ is $\frac{1}{ad-bc}\begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$. Use this formula to compute the inverse of $\begin{bmatrix} 2 & 1 \\ 5 & 3 \end{bmatrix}$.

2) (10 pts) Use the inverse matrix you found in problem 1 to solve the linear system below.

$$\begin{array}{rcrcr} 2x & + & y & = & 5 \\ 5x & + & 3y & = & 13 \end{array}$$

3) (10 pts) Using the algorithm we learned in lesson 5 ($[\mathbf{A}|\mathbf{I}] \to \cdots \to [\mathbf{I}|\mathbf{A}^{-1}]$), find the inverse of the 3×3 matrix $\begin{bmatrix} 1 & -2 & 3 \\ 0 & 1 & 2 \\ 0 & 0 & 2 \end{bmatrix}$.