Name: __________________________

Instructions: You have 20 minutes to take this quiz, for a total of 10 points. May your luck be invertible!

1. (5 points)
   (a) (2 points) Use row-reduction to find $A^{-1}$, where: $A = \begin{bmatrix} 1 & -4 \\ 2 & -7 \end{bmatrix}$

   (b) (3 points) Let $T$ and $S$ be linear transformations such that the matrix of $T$ is $A$ and the matrix of $S$ is $B$, where:

   $A = \begin{bmatrix} 1 & -4 \\ 2 & -7 \end{bmatrix}$  $B = \begin{bmatrix} 1 & 0 & -2 \\ 3 & 2 & 0 \end{bmatrix}$

   Using (a), find the matrix of $T^{-1} \circ S$.

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Date: Friday, September 19th, 2014.
2. (5 points) Find a basis for $\text{Col}(A)$ and a basis for $\text{Nul}(A)$, where $A$ is the following matrix (with the following row-echelon form):

$$A = \begin{bmatrix}
2 & 4 & -5 & 2 & -3 \\
3 & 6 & -8 & 3 & -5 \\
0 & 0 & 9 & 0 & 9 \\
-3 & -6 & -7 & -3 & -10
\end{bmatrix} \sim \begin{bmatrix}
1 & 2 & -5 & 1 & -4 \\
0 & 0 & 5 & 0 & 5 \\
0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0
\end{bmatrix}$$