Name:_____

Student ID #:_____

Mini-Quiz # 8

MAT-022A-Summer Session II (8/26/09)

You have 15 minutes. You may only use a pencil (or pen) and scrap paper. You must show all your work carefully.

1. Do the matrices $\begin{bmatrix} 1 & 1 \\ 0 & 1 \end{bmatrix}$, $\begin{bmatrix} 1 & 2 \\ 0 & 3 \end{bmatrix}$, and $\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$ span $V = \left\{ \begin{bmatrix} a & b \\ 0 & c \end{bmatrix} \mid \text{where } a, b, c \text{ are any real numbers} \right\}$ = the vector space of all 2×2 upper triangular matrices? (5 points)

2. Are $t^3 - t + 1$, $t^3 + t - 1$, $2t^3$ linearly independent in P_3? (5 points)