Name:_____

MA242, Quiz #5
Fall 2009

(a) Use the matrix inversion algorithm to compute the inverse of

$$M = \begin{pmatrix} -1/9 & 1/9 & 2/9 \\ 2/9 & 1/9 & 1/9 \\ -2/9 & -1/9 & 2/9 \end{pmatrix}$$

(b) Use your answer in (a) to solve $M\vec{x} = \vec{b}$, where $\vec{b} = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}$. (Do not solve this system directly.)

Ans:
(a)

$$M^{-1} = \begin{pmatrix} -3 & 4 & 1 \\ 6 & -2 & -5 \\ 0 & 3 & 3 \end{pmatrix}$$

(b) $\vec{x} = \begin{pmatrix} 8 \\ -13 \\ 15 \end{pmatrix}$.