Name:_____

640:244–01 SPRING 2007 Quiz 8 March 27, 2007

1. (a) Find the reduced row echelon form of the matrix $\begin{pmatrix} 1 & 2 & -1 & 3 \\ 2 & 3 & 1 & 7 \\ 1 & 1 & 2 & 4 \end{pmatrix}$.

(b) Using your result from (a), find all solutions of

$$\begin{aligned} x_1 + 2x_2 - x_3 &= 3 \\ 2x_1 + 3x_2 + x_3 &= 7 \\ x_1 + x_2 + 2x_3 &= 4 \end{aligned}$$

2. Find *all* eigenvalues and *one* eigenvector of the matrix $A = \begin{pmatrix} 3 & -5 \\ 2 & -4 \end{pmatrix}$. Note: the eigenvalues are small integers.

Name:_____

640:244–02 SPRING 2007 Quiz 8 March 27, 2007

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(b) Using your result from (a), find all solutions of

$$\begin{aligned} x_1 + 2x_2 - x_3 &= 3 \\ 2x_1 + 3x_2 + x_3 &= 7 \\ x_1 + x_2 + 2x_3 &= 4 \end{aligned}$$

2. Find *all* eigenvalues and *one* eigenvector of the matrix $A = \begin{pmatrix} 4 & -9 \\ 2 & -5 \end{pmatrix}$. Note: the eigenvalues are small integers.

Name:_____

640:244–03 SPRING 2007 Quiz 8 March 27, 2007

1. (a) Find the reduced row echelon form of the matrix $\begin{pmatrix} 1 & 2 & -1 & 3 \\ 2 & 3 & 1 & 7 \\ 1 & 1 & 2 & 4 \end{pmatrix}$.

(b) Using your result from (a), find all solutions of

$$\begin{aligned} x_1 + 2x_2 - x_3 &= 3 \\ 2x_1 + 3x_2 + x_3 &= 7 \\ x_1 + x_2 + 2x_3 &= 4 \end{aligned}$$

2. Find *all* eigenvalues and *one* eigenvector of the matrix $A = \begin{pmatrix} 3 & -3 \\ 4 & -5 \end{pmatrix}$. Note: the eigenvalues are small integers.