

GEORGIA TECH

SCHOOL OF MATHEMATICS

MATH 1502

CALCULUS II, SECTION K

Quiz # 8

October 22nd 2008

First Name : -----

Last Name : -----

This quiz is devoted to solving the following system of linear equations :

$$\begin{aligned}x_1 + x_2 + 3x_3 - x_4 &= 1 \\x_1 - x_2 + 3x_3 - x_4 &= -1 \\-x_1 + x_2 - 3x_3 + x_4 &= 1 \\2x_1 - x_2 + 6x_3 - 2x_4 &= -1\end{aligned}\tag{1}$$

1. Writing this system as $A\mathbf{x} = \mathbf{b}$ give the expression of the matrix A

$$A =$$

2. Give a row reduced form for the augmented matrix
(Give results here and use the back pages for your calculations)

Reduced form =

3. Give a one-to-one parametrization of the kernel of A
(Give results here and use the back pages for your calculations)

$\text{Ker } A =$

4. Give a one-to-one parametrization of the set of solutions of eq. (1)
(Give results here and use the back pages for your calculations)

$S(A|\mathbf{b}) =$

5. Give a one-to-one parametrization of the image of A
(Give results here and use the back pages for your calculations)

$$\text{Im}A =$$

Use the bottom of this page and the back page for your calculations

Use this page for your calculations