110.201
Linear Algebra
Summer 1996, JHU

June 20, 1996

QUIZ X

Time: 10min

1. Let V be the space spanned by $\mathbf{v}_1 = cos^2x$, $\mathbf{v}_2 = sin^2x$, and $\mathbf{v}_3 = cos2x$.

(a) Show that $S = \{\mathbf{v}_1, \mathbf{v}_2, \mathbf{v}_3\}$ is not a basis for V.

(b) Find a basis for V.

2. Determine the dimension of and a basis for the solution space of the system:

$$\begin{array}{rcrcrl} x_1 & + & x_2 & - & x_3 & = 0 \\ -2x_1 & - & x_2 & + & 2x_3 & = 0 \\ -x_1 & & & + & x_3 & = 0 \end{array}$$

Each problem is worth 5 pts.

LaTeX ..... MG