

MATH 220
Fall 2019
Quiz 2

Full Name/ Student ID:

1) Find a basis for the subspace W of \mathbb{R}^3 spanned by

$$\left\{ \begin{bmatrix} 1 \\ 2 \\ 2 \end{bmatrix}, \begin{bmatrix} 3 \\ 2 \\ 1 \end{bmatrix}, \begin{bmatrix} 11 \\ 10 \\ 7 \end{bmatrix}, \begin{bmatrix} 7 \\ 6 \\ 4 \end{bmatrix} \right\}.$$

What is the dimension of W ?

2. Find a basis for the solution space of the homogeneous system $A\underline{x} = \underline{0}$ where

$$A = \begin{bmatrix} 1 & 2 & 1 & 2 & 1 \\ 1 & 2 & 2 & 1 & 2 \\ 2 & 4 & 3 & 3 & 3 \\ 0 & 0 & 1 & -1 & -1 \end{bmatrix}.$$

What is the dimension of the solution space?