

Name + UID: _____ Section (circle one): C.Weier S.Bagley
Math 2250-4
Quiz 5
October 11, 2013

1a) Define what a linear combination of vectors $\mathbf{v}_1, \mathbf{v}_2, \dots, \mathbf{v}_n$ is.

(2 points)

1b) Define what it means for vectors $\mathbf{v}_1, \mathbf{v}_2, \dots, \mathbf{v}_n$ to be linearly independent.

(2 points)

2) The span of the vectors

$$\mathbf{u} = \begin{bmatrix} 1 \\ -2 \\ 0 \end{bmatrix}, \mathbf{v} = \begin{bmatrix} 2 \\ -3 \\ 4 \end{bmatrix}$$

is a plane in \mathbb{R}^3 . Find for which $[x, y, z]^T$ the system

$$c_1 \mathbf{u} + c_2 \mathbf{v} = \begin{bmatrix} x \\ y \\ z \end{bmatrix}$$

can be solved for c_1, c_2 , in order to find the implicit equation $ax + by + cz = d$ of this plane.

(6 points)