

Math 205 Quiz 9

Name:

1. What is the 1-norm, 2-norm, and  $\infty$ -norm for  $\vec{t} = \begin{bmatrix} 1 \\ -1 \\ -3 \end{bmatrix}$ ?

2. Find the distance between  $\vec{x} = \begin{bmatrix} 1 \\ -1 \\ 2 \end{bmatrix}$  and  $\vec{y} = \begin{bmatrix} 4 \\ 1/2 \\ 0 \end{bmatrix}$ .

3. Find the angle between  $\vec{x} = \begin{bmatrix} 1 \\ \sqrt{2} \\ -1 \end{bmatrix}$  and  $\vec{y} = \begin{bmatrix} 0 \\ 1 \\ 0 \end{bmatrix}$ .

4. Find the unit vector associated with  $\vec{v} = \begin{bmatrix} 2 \\ \sqrt{3} \\ 1 \end{bmatrix}$ .

5. Is the following set an orthogonal set?

$$\left\{ \begin{bmatrix} 1 \\ 1/\sqrt{2} \\ 0 \end{bmatrix}, \begin{bmatrix} -1 \\ \sqrt{2} \\ 1 \end{bmatrix}, \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix} \right\}$$