

Math 304 Section 1 Quiz 8

7/25/16

Name: _____

1. Let $A = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$.

(a) What is the dimension of the column space of A ?(b) What is the dimension of the null space of A ?

2. Does the set $\left\{ \begin{bmatrix} 1 \\ 2 \\ 3 \\ 4 \end{bmatrix}, \begin{bmatrix} 1 \\ -1 \\ 1 \\ -1 \end{bmatrix}, \begin{bmatrix} \sqrt{2} \\ \sqrt{3} \\ \sqrt{5} \\ \sqrt{7} \end{bmatrix} \right\}$ span \mathbb{R}^4 ?

3. Is the set $\left\{ \begin{bmatrix} 1 \\ 2 \\ 3 \end{bmatrix}, \begin{bmatrix} 4 \\ 5 \\ 6 \end{bmatrix}, \begin{bmatrix} \sqrt{2} \\ \sqrt{3} \\ \sqrt{5} \end{bmatrix}, \begin{bmatrix} 1 \\ \pi \\ \pi^2 \end{bmatrix} \right\}$ linearly independent?

4. Is the set $\left\{ \begin{bmatrix} 1 \\ 0 \end{bmatrix}, \begin{bmatrix} 0 \\ 0 \end{bmatrix} \right\}$ linearly independent?

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