

# Quiz 5, Linear

Name: \_\_\_\_\_

1. (4 points) Suppose  $CA = I_n$ . Show that the equation  $A\mathbf{x} = \mathbf{0}$  has only the trivial solution. Explain why  $A$  cannot have more columns than rows.

2. (2 points) Let  $\mathbf{u} = \begin{bmatrix} -1 \\ 3 \\ -2 \end{bmatrix}$  and  $\mathbf{v} = \begin{bmatrix} a \\ b \\ c \end{bmatrix}$ . Compute  $\mathbf{u}\mathbf{v}^T$  and  $\mathbf{u}^T\mathbf{v}$ .

3. (4 points) Let  $A = \begin{bmatrix} 1 & 4 \\ 3 & 13 \end{bmatrix}$ . Find  $A^{-1}$  and use it to solve the equation  $A\mathbf{x} = \begin{bmatrix} 1 \\ 2 \end{bmatrix}$ .