Mathematics 1553

Quiz 5

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Section E1/Arjun E2/Qianli E3/Kemi E4/Martin E5/Bharat (circle one!)
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1. Find the inverse of the matrix

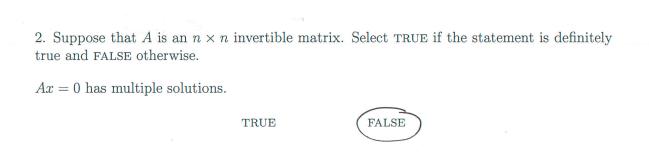
$$A = \left(\begin{array}{ccc} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 2 & 0 & 1 \end{array}\right)$$

$$\begin{pmatrix}
100 & | & 100 \\
011 & | & 010 \\
201 & | & 001
\end{pmatrix}
\sim
\begin{pmatrix}
100 & | & 100 \\
011 & | & 010 \\
001 & | & -201
\end{pmatrix}$$

Use your answer from the first part to solve the matrix equation

$$\begin{pmatrix} 1 & 0 & 0 \\ 0 & 1 & 1 \\ 2 & 0 & 1 \end{pmatrix}^{"} \begin{pmatrix} x_1 \\ x_2 \\ x_3 \end{pmatrix} = \begin{pmatrix} 2 \\ 2 \\ 3 \end{pmatrix}$$

$$\begin{pmatrix} 1 & 0 & 0 \\ 2 & 1 & -1 \\ -2 & 0 & 1 \end{pmatrix} \begin{pmatrix} 2 \\ 2 \\ 3 \end{pmatrix} = \begin{pmatrix} 2 \\ 3 \\ -1 \end{pmatrix}$$



The rows of A are linearly independent.

TRUE

FALSE

The reduced row echelon form of A is the identity.

TRUE

FALSE

The linear transformation T(v) = Av is one-to-one, onto, and invertible.

TRUE

FALSE

If T(v) = Av then the matrix for $T \circ T$ is A^2 .



FALSE