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Math 33A Quiz 3 (Thursday) Fall 2017

[redacted]

- You have 5 minutes
- No calculators
- Show sufficient work

1. Consider four linearly independent vectors $\vec{v_1}$, $\vec{v_2}$, $\vec{v_3}$, and $\vec{v_4}$ in $\mathbb{R}^6$. Find

$$\text{rref}\begin{bmatrix} | & | & | & | \\ \vec{v_1} & \vec{v_2} & \vec{v_3} & \vec{v_4} \\ | & | & | & | \end{bmatrix}.$$

If the vectors are linearly independent,

$$\text{rref}\begin{bmatrix} | & | & | & | \\ \vec{v_1} & \vec{v_2} & \vec{v_3} & \vec{v_4} \\ | & | & | & | \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 \end{bmatrix}$$

Because rref of a matrix of linearly independent vectors will have a rank equal to the number of these linearly independent vectors.