

Linear Algebra  
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Exam 2  
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1. Let A be the matrix

$$\begin{pmatrix} 1 & 0 & 2 & 3 & 1 \\ -3 & 6 & 12 & -8 & -3 \\ 1 & -2 & -4 & 3 & 1 \end{pmatrix}$$

- Find a basis for the nullspace of A
- Find a basis for the columnspace of A
- Find a basis for the row space of A
- Find the rank of A
- Find the nullity of A

2. Use Gram-Schmidt process to find an orthonormal basis for  $\mathbb{R}^3$  from the set

$$\{(0,3,0), (1,-1,1), (2,0,1)\}$$