AMAT 220: Linear Algebra, Spring 2012 Quiz # 15, April 5

Name: .....

Consider the matrix $A = \begin{bmatrix} 5 & -2 & 3 \\ -1 & 0 & -1 \\ 0 & -2 & -2 \\ -5 & 7 & 2 \end{bmatrix}$ and the vector $\mathbf{v} = \begin{bmatrix} 2 \\ 2 \\ -2 \end{bmatrix}$.

- If $\operatorname{Nul} A$ is a subspace of $\mathbb{R}^k$, then $k = \ldots\ldots$
- Is $\mathbf{v}$ in $\operatorname{Nul} A$? Why or why not?

- If $\operatorname{Col} A$ is a subspace of $\mathbb{R}^\ell$, then $\ell = \ldots\ldots$
- Is $\mathbf{v}$ in $\operatorname{Col} A$? Why or why not?

- Find a non-zero vector in $\operatorname{Col} A$.