## Quiz 1

1. (5 points) Solve  $\begin{pmatrix} 1 & 2 & -1 & -1 & -5 \\ 2 & 4 & -1 & 2 & -5 \\ -1 & -2 & 0 & -3 & 0 \end{pmatrix} \vec{x} = \vec{0}$  either in parametric vector form or as a span.

2. (5 points) Are the columns of  $\begin{pmatrix} 1 & -2 & -1 \\ 1 & 0 & 3 \\ 2 & -1 & 4 \end{pmatrix}$  independent? Give a dependence if not.

3. (1 point) For some  $3 \times 5$  matrix A, the solution set to  $A\vec{x} = \vec{0}$  is  $\mathrm{Span}\{\vec{u}, \vec{v}\}$ , with  $\vec{u}, \vec{v} \in \mathbb{R}^5$ . Do the columns of A span  $\mathbb{R}^3$ ? Give a one-sentence explanation.