Your name:

Math 22 Summer 2017, mini-quiz 1, Mon July 10

Please show your work. No credit is given for solutions without work or justification.

(1) Write the *parametric vector form* of the solution set to the linear system

$$x_1 + 2x_2 + 3x_3 = 4 \qquad \text{[Note there is only one equation.]}$$

(2) Let $\mathbf{v}_1$, ..., $\mathbf{v}_n$ be vectors in $\mathbb{R}^m$. Define $\text{Span}\{\mathbf{v}_1, \ldots, \mathbf{v}_n\}$. [Use either mathematical notation or precise mathematical language.]

(3) Could a set of 7 vectors in $\mathbb{R}^5$ be linearly independent? Prove your answer.

(4) Is it possible that a linear transformation $T : \mathbb{R}^4 \to \mathbb{R}^3$ is onto? Prove your answer.