

QUIZ September 11, 2013

Clicker Instructions: A = True; B = False;
C = I don't know; D = No truth value
correct = 1pt; don't know = 0pt; wrong = -1pt

1. A homogeneous system of equations can be inconsistent.
2. Let \mathbf{u} and \mathbf{v} be fixed vectors. The collection of vectors of the form

$$\mathbf{x} = \mathbf{u} + t\mathbf{v}, \quad t \in \mathbb{R}$$

represents a line.

3. The collection of vectors of the last question can be expressed as

$$\text{Span} \{ \mathbf{u}, \mathbf{v} \} .$$

4. The equation $3x + 2y + 4z = 0$ represents a line in \mathbb{R}^3 .

5. Suppose the equation $A\mathbf{x} = \mathbf{b}$ is consistent for some given \mathbf{b} . Then the solution set of $A\mathbf{x} = \mathbf{b}$ is the set of all vectors of the form $\mathbf{w} = \mathbf{b} + \mathbf{v}_h$, where \mathbf{v}_h is any solution of the homogeneous equation $A\mathbf{x} = \mathbf{0}$.
6. Suppose A is a 3×2 matrix with two pivot positions. Then $A\mathbf{x} = \mathbf{b}$ has a solution for all \mathbf{b} .