

QUIZ September 20, 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. The vectors

$$\begin{bmatrix} 1 \\ 2 \end{bmatrix} \quad \text{and} \quad \begin{bmatrix} 2 \\ 4 \end{bmatrix}$$

are linearly dependent.

2. The system $A\mathbf{x} = \mathbf{0}$, where

$$A = \begin{bmatrix} 1 & 2 \\ 2 & 4 \end{bmatrix},$$

has infinitely many solutions. (Hint: this can be done using previous question, no calculations needed.)

3. A set of one vector is always linearly independent.
4. A set of six vectors in \mathbb{R}^4 must be linearly independent.

5. If $\mathbf{u} \in \text{Span}\{\mathbf{v}, \mathbf{w}\}$, then the set $\mathbf{u}, \mathbf{v}, \mathbf{w}$ is linearly dependent.
6. If $\mathbf{u} \notin \text{Span}\{\mathbf{v}, \mathbf{w}\}$, then the set $\mathbf{u}, \mathbf{v}, \mathbf{w}$ is linearly independent.