

Linear dependency of a set of vectors

Practice Quiz, 5 questions

5/5 points (100.00%)



Congratulations! You passed!

Next Item



1 / 1
point

1. In this quiz, you will check if some simple collection of vectors are linearly independent or not.

Are the following set of vectors linearly independent?

$$\mathbf{a} = \begin{bmatrix} 1 \\ 1 \end{bmatrix} \text{ and } \mathbf{b} = \begin{bmatrix} 2 \\ 1 \end{bmatrix}.$$



Yes



Correct

These vectors are linearly independent as one is not a scalar multiple of the other.



No



1 / 1
point

2. Are the following set of vectors linearly independent?

$$\mathbf{a} = \begin{bmatrix} 1 \\ 1 \end{bmatrix} \text{ and } \mathbf{b} = \begin{bmatrix} 2 \\ 2 \end{bmatrix}.$$



Yes



No



Correct

These vectors are linearly dependent as

one is a scalar multiple of the other.



3. Are the following set of vectors linearly independent?

1 / 1
point

$$\mathbf{a} = \begin{bmatrix} 1 \\ 2 \\ 0 \end{bmatrix} \text{ and } \mathbf{b} = \begin{bmatrix} -2 \\ 1 \\ 0 \end{bmatrix}.$$



Yes



Correct

These vectors are linearly independent as one is not a scalar multiple of the other.



No



4. Are the following set of vectors linearly independent?

1 / 1
point

$$\mathbf{a} = \begin{bmatrix} 1 \\ 0 \\ 0 \end{bmatrix}, \mathbf{b} = \begin{bmatrix} 1 \\ 1 \\ 0 \end{bmatrix} \text{ and } \mathbf{c} = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}$$



Yes



Correct

These vectors are linearly independent as one can not be written as a linear sum of the other two.



No



5. Are the following set of vectors linearly independent?

- - - - -

1 / 1
point

$$\mathbf{a} = \begin{bmatrix} 1 \\ 0 \\ 1 \end{bmatrix}, \mathbf{b} = \begin{bmatrix} 2 \\ -1 \\ 1 \end{bmatrix} \text{ and } \mathbf{c} = \begin{bmatrix} -3 \\ 1 \\ -2 \end{bmatrix}.$$

☐ Yes

☒ No

Correct

Indeed, one of the vectors can be written as a linear sum of the other two.

