Doing some vector operations

Practice Quiz, 6 questions

6/6 points (100%)

Congratulations! You passed!

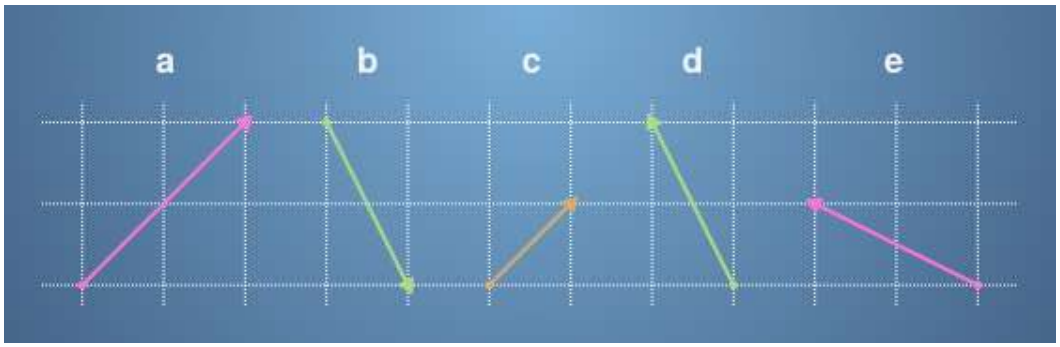
Next Item

1 / 1 point

1.

This quiz will be to familiarise yourself with vectors and some basic vector operations.

For the following questions, the vectors $\mathbf{a}$, $\mathbf{b}$, $\mathbf{c}$, $\mathbf{d}$ and $\mathbf{e}$ refer to those in this diagram:



What is the numerical representation of the vector $\mathbf{a}$?

- $\begin{bmatrix} 2 \\ 1 \end{bmatrix}$
- $\begin{bmatrix} 1 \\ 2 \end{bmatrix}$
- $\begin{bmatrix} 1 \\ 1 \end{bmatrix}$
- $\begin{bmatrix} 2 \\ 2 \end{bmatrix}$

Correct

You can get the numerical representation by following the arrow along the grid.

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2.

Which vector corresponds to $\begin{bmatrix} -1 \\ 2 \end{bmatrix}$?

- Vector $\mathbf{a}$
- Vector $\mathbf{b}$
- Vector $\mathbf{c}$
- Vector $\mathbf{d}$

Correct

You can get the numerical representation by following the arrow along the grid.

1 / 1 point

3.

What vector is $2\mathbf{c}$?

Please select all correct answers.

- $\mathbf{a}$

Correct

Multiplying by a positive scalar is like stretching out a vector in the same direction.

- $\begin{bmatrix} -2 \\ 2 \end{bmatrix}$

Un-selected is correct

- $\mathbf{e}$

Un-selected is correct

- [x] $\begin{bmatrix} 2 \\ 2 \end{bmatrix}$

Correct
A scalar multiple of a vector can be calculated by multiplying each component.

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1 / 1 point

4.
What vector is $-\mathbf{b}$?

Please select all correct answers.

- [x] $\begin{bmatrix} -1 \\ 2 \end{bmatrix}$

Correct
A scalar multiple of a vector can be calculated by multiplying each component.

- [x] $\mathbf{d}$

Correct
Multiplying by a negative changes the direction of the vector.

- [ ] $\begin{bmatrix} -2 \\ 1 \end{bmatrix}$

Un-selected is correct

- [ ] $\mathbf{e}$

Un-selected is correct

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1 / 1 point

5.

What is the vector $\mathbf{b} + \mathbf{e}$?

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- $\begin{bmatrix} 1 \\ -1 \end{bmatrix}$

Correct
You add vectors entry by entry.

- $\begin{bmatrix} 1 \\ 3 \end{bmatrix}$
- $\begin{bmatrix} 2 \\ -1 \end{bmatrix}$
- $\begin{bmatrix} -1 \\ 2 \end{bmatrix}$

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1 / 1 point

6.
What is the vector $\mathbf{d} - \mathbf{b}$?

- $\begin{bmatrix} -4 \\ 2 \end{bmatrix}$
- $\begin{bmatrix} -2 \\ 4 \end{bmatrix}$

Correct
Remember that vectors add by attaching the end of one to the start of the other.

- $\begin{bmatrix} 4 \\ -2 \end{bmatrix}$
- $\begin{bmatrix} 2 \\ -4 \end{bmatrix}$

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