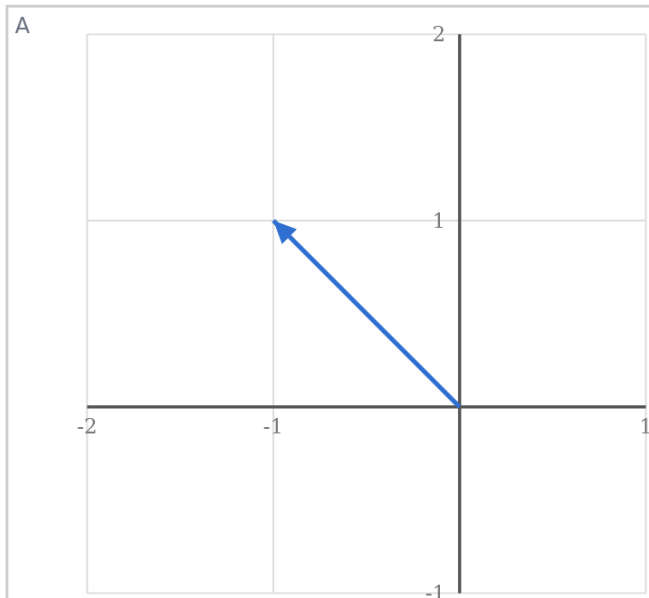


Write parametric equations of lines

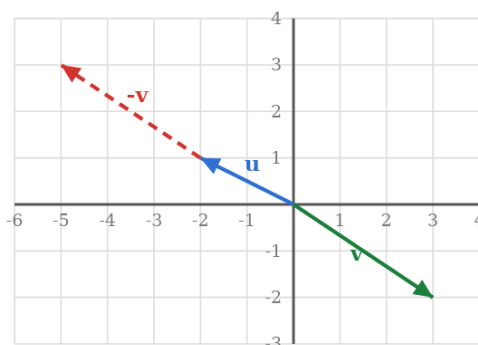
1

Choose the grid that shows this vector with its base at the origin.

$$\vec{v} = [-2, 2]$$

**2**

Use the grid to find the difference of the two vectors.



A

$$\vec{u} - \vec{v} = \begin{bmatrix} -2 & -2 \\ 1 & -3 \end{bmatrix}$$

B

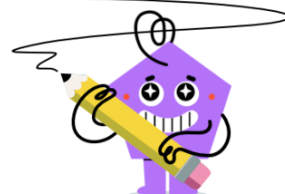
$$\vec{u} - \vec{v} = \begin{bmatrix} -2 & -3 \\ 1 & -2 \end{bmatrix}$$

C

$$\vec{u} - \vec{v} = \begin{bmatrix} -2 & 3 \\ 1 & -2 \end{bmatrix}$$

D

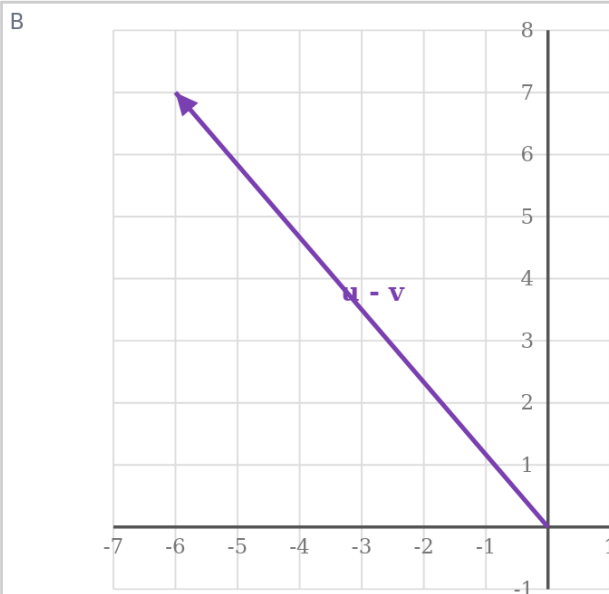
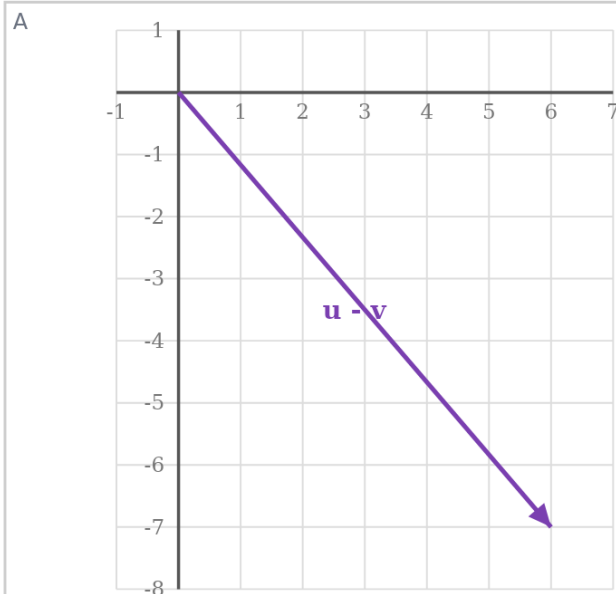
$$\vec{u} - \vec{v} = \begin{bmatrix} -2 & -3 \\ 1 & -2 \end{bmatrix}$$



Write parametric equations of lines

3Choose the grid that shows the difference vector $u - v$.

$$\vec{u} = \begin{bmatrix} -4 \\ 4 \end{bmatrix}, \quad \vec{v} = \begin{bmatrix} 2 \\ -3 \end{bmatrix}$$

**4**

Write the vector form of the line through the two points.

$$A (-2, 2, -4) \quad B (2, -1, 0)$$

A

$$\vec{r} = \begin{pmatrix} -2 \\ 2 \\ -4 \end{pmatrix} + t \begin{pmatrix} 4 \\ -3 \\ 4 \end{pmatrix}$$

B

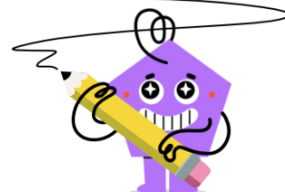
$$\vec{r} = \begin{pmatrix} -2 \\ 2 \\ -4 \end{pmatrix} + t \begin{pmatrix} 0 \\ 1 \\ -4 \end{pmatrix}$$

C

$$\vec{r} = \begin{pmatrix} -2 \\ 2 \\ -4 \end{pmatrix} + t \begin{pmatrix} 2 \\ -1 \\ 0 \end{pmatrix}$$

D

$$\vec{r} = \begin{pmatrix} 0 \\ 1 \\ -4 \end{pmatrix} + t \begin{pmatrix} 4 \\ -3 \\ 4 \end{pmatrix}$$

**Write parametric equations of lines**

- 5** Write the vector form of the line through the point with the given direction vector.

Point $(2, 1, -4)$ Direction $\begin{pmatrix} 2 \\ -2 \\ -1 \end{pmatrix}$

A

$$\vec{r} = \begin{pmatrix} 2 \\ -2 \\ -1 \end{pmatrix} + t \begin{pmatrix} 2 \\ 1 \\ -4 \end{pmatrix}$$

B

$$\vec{r} = \begin{pmatrix} 4 \\ -1 \\ -5 \end{pmatrix} + t \begin{pmatrix} 2 \\ -2 \\ -1 \end{pmatrix}$$

C

$$\vec{r} = \begin{pmatrix} 2 \\ 1 \\ -4 \end{pmatrix} + t \begin{pmatrix} -2 \\ 2 \\ 1 \end{pmatrix}$$

D

$$\vec{r} = \begin{pmatrix} 2 \\ 1 \\ -4 \end{pmatrix} + t \begin{pmatrix} 2 \\ -2 \\ -1 \end{pmatrix}$$

- 6** Does the given point lie on the line through A and B?
A $(2, -1, 2)$ B $(1, 4, -3)$ Point $(6, 5, -3)$

A

Yes

B

No

- 7** Does the given point lie on the line through A and B?
A $(-1, 4, 3)$ B $(3, -3, -2)$ Point $(16, -17, -8)$

A

No

B

Yes

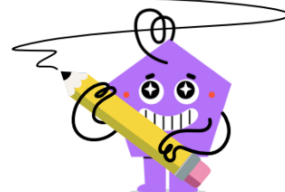
- 8** Does the given point lie on the line through A and B?
A $(1, 3, 0)$ B $(-1, 4, 3)$ Point $(-1, 4, 3)$

A

Yes

B

No

**Write parametric equations of lines****9**

Write the vector form of the line through the two points.

A (2, -3, 3) B (-3, 3, 4)

A

$$\vec{r} = \begin{pmatrix} -1 \\ 0 \\ 7 \end{pmatrix} + t \begin{pmatrix} -5 \\ 6 \\ 1 \end{pmatrix}$$

B

$$\vec{r} = \begin{pmatrix} 2 \\ -3 \\ 3 \end{pmatrix} + t \begin{pmatrix} -1 \\ 0 \\ 7 \end{pmatrix}$$

C

$$\vec{r} = \begin{pmatrix} 2 \\ -3 \\ 3 \end{pmatrix} + t \begin{pmatrix} -5 \\ 6 \\ 1 \end{pmatrix}$$

D

$$\vec{r} = \begin{pmatrix} 2 \\ -3 \\ 3 \end{pmatrix} + t \begin{pmatrix} -3 \\ 3 \\ 4 \end{pmatrix}$$

10

Write the vector form of the line through the point with the given direction vector.

Point (-2, 1, -4) Direction $\begin{pmatrix} -2 \\ 3 \\ 2 \end{pmatrix}$

A

$$\vec{r} = \begin{pmatrix} -2 \\ 3 \\ 2 \end{pmatrix} + t \begin{pmatrix} -2 \\ 1 \\ -4 \end{pmatrix}$$

B

$$\vec{r} = \begin{pmatrix} -2 \\ 1 \\ -4 \end{pmatrix} + t \begin{pmatrix} -2 \\ 3 \\ 2 \end{pmatrix}$$

C

$$\vec{r} = \begin{pmatrix} -4 \\ 4 \\ -2 \end{pmatrix} + t \begin{pmatrix} -2 \\ 3 \\ 2 \end{pmatrix}$$

D

$$\vec{r} = \begin{pmatrix} -2 \\ 1 \\ -4 \end{pmatrix} + t \begin{pmatrix} 2 \\ -3 \\ -2 \end{pmatrix}$$