

Three Dimensional Vector Basics

Write each vector in component form.

1) \overrightarrow{CD} where $C = (2, -3, 3)$ $D = (-7, 1, 2)$

2) \overrightarrow{AB} where $A = (0, -2, -1)$ $B = (-2, -3, 7)$

Write each vector as a linear combination.

3) \overrightarrow{RS} where $R = (-4, 9, -9)$ $S = (7, 9, 8)$

4) \overrightarrow{CD} where $C = (1, -8, -7)$ $D = (1, 1, 0)$

Find the magnitude of each vector.

5) $\vec{v} = 2\vec{i} + 7\vec{j} + 5\vec{k}$

6) \overrightarrow{RS} where $R = (6, 5, -8)$ $S = (1, 3, -9)$

7) $\vec{u} = \langle -4, -6, 9 \rangle$

8) $\vec{u} = -7\vec{i} - \vec{j} - \vec{k}$

Critical thinking questions:

9) Find the head and tail points for $\overrightarrow{AB} = \langle 8, -1, 2 \rangle$ that starts in octant VI and ends in octant V.

10) What are the possible integer x , y , and z components of a three-dimensional vector with a magnitude of 6?