

8-3

NAME _____ DATE _____ PERIOD _____

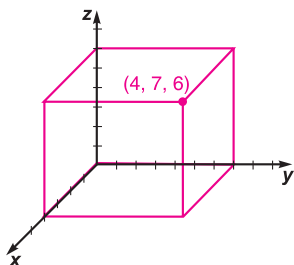
Practice

Vectors in Three-Dimensional Space

Locate point B in space. Then find the magnitude of a vector from the origin to B .

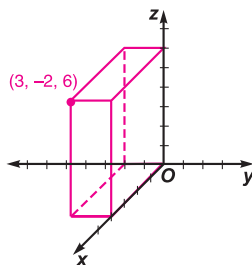
1. $B(4, 7, 6)$

$\sqrt{101}$



2. $B(4, -2, 6)$

$2\sqrt{14}$



Write the ordered triple that represents \overline{AB} . Then find the magnitude of \overline{AB} .

3. $A(2, 1, 3), B(-4, 5, 7)$

$\langle -6, 4, 4 \rangle; 2\sqrt{17}$

4. $A(4, 0, 6), B(7, 1, -3)$

$\langle 3, 1, -9 \rangle; \sqrt{91}$

5. $A(-4, 5, 8), B(7, 2, -9)$

$\langle 11, -3, -17 \rangle; \sqrt{419}$

6. $A(6, 8, -5), B(7, -3, 12)$

$\langle 1, -11, 17 \rangle; \sqrt{411}$

Find an ordered triple to represent \vec{u} in each equation if $\vec{v} = \langle 2, -4, 5 \rangle$ and $\vec{w} = \langle 6, -8, 9 \rangle$.

7. $\vec{u} = \vec{v} + \vec{w}$

$\langle 8, -12, 14 \rangle$

8. $\vec{u} = \vec{v} - \vec{w}$

$\langle -4, 4, -4 \rangle$

9. $\vec{u} = 4\vec{v} + 3\vec{w}$

$\langle 26, -40, 47 \rangle$

10. $\vec{u} = 5\vec{v} - 2\vec{w}$

$\langle -2, -4, 7 \rangle$

11. **Physics** Suppose that the force acting on an object can be expressed by the vector $\langle 85, 35, 110 \rangle$, where each measure in the ordered triple represents the force in pounds. What is the magnitude of this force? ≈ 143 lb