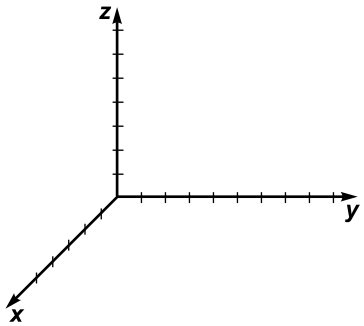
8-3

Practice

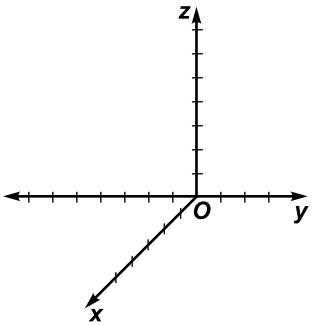
Vectors in Three-Dimensional Space

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

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



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



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

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

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

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

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

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

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

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

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

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?