IB Math SL Unit 1 Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

HW Day 2 3D Vector Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Use the points A(2, 4, -6) and B (5, -3, 7) to answer the following questions.

1. Find the position vector$ \vec{AB}$.
2. Find the position vector$ \vec{BA.}$

Use $\vec{v}=\left(\begin{array}{c}1\\1\\-1\end{array}\right)$ and $\vec{w}=\left(\begin{array}{c}2\\3\\2\end{array}\right)$ to answer the following questions.

1. Find 4$\vec{v}$ + 3$\vec{w}$
2. Find $\left|\vec{v}\right|$
3. Find $\left|\vec{w}\right|$
4. Find the angle between $\vec{v}$ and $\vec{w}$.

Find the value of *c* such that the given $\vec{v}$ and $\vec{w}$ will be perpendicular.

1. $\vec{v}=\left(\begin{array}{c}3\\5\\-1\end{array}\right)$ and $\vec{w}=\left(\begin{array}{c}7\\-4\\c\end{array}\right)$.
2. $\vec{v}=\left(\begin{array}{c}1\\-2\\8\end{array}\right)$ and $\vec{w}=\left(\begin{array}{c}c\\3\\1\end{array}\right)$.

Find the value of *c* such that the given $\vec{v}$ and $\vec{w}$ will be parallel.

1. $\vec{v}=\left(\begin{array}{c}1\\-2\\8\end{array}\right)$ and $\vec{w}=\left(\begin{array}{c}c\\1\\-4\end{array}\right)$.
2. If $\vec{w}=\left(\begin{array}{c}1\\2\\-3\end{array}\right)$, find the vector $\vec{v}$ such that and $\vec{v}∙\vec{w}=\left|\vec{v}\right|\left|\vec{w}\right|$.

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