[08-002-11-T-Phy]

Vectors - Review 1

The point O is to be taken as the origin $O(0, 0)$.

■ **A. Given: Points $A(6, 14)$, $B(-7, 3)$, $C(-5, -9)$, $D(10, -7)$. Find each of the following.**

[1] $\overrightarrow{AB}$

[2] $\overrightarrow{BA}$

[3] $\overrightarrow{AC}$

[4] $\overrightarrow{AD}$

[5] $\overrightarrow{DC}$

■ **B. Find the position vector, call it $\vec{r}$, for each of the points in the coordinate plane.**

[1] $(7, -11)$

[2] $(-5, 13)$

[3] $(5, -8)$

■ **C. Given: Points $A(6, 14)$, $B(-7, 3)$ and $\overrightarrow{AC} = \begin{bmatrix} 3 \\ 11 \end{bmatrix}$, $\overrightarrow{BD} = \begin{bmatrix} -3 \\ -7 \end{bmatrix}$, $\vec{u} = \begin{bmatrix} 3 \\ 11 \end{bmatrix}$, $\vec{v} = \begin{bmatrix} -7 \\ 3 \end{bmatrix}$. Find each of the following.**

[1] The coordinates of the point C.

[2] The position vector of point C.

[3] The coordinates of the point A

[4] The position vector of point A.

[5] The vector $\vec{r}$ equal to the sum $\overrightarrow{OA} + \vec{u}$.

[6] Write the vector equation of the line ℓ through the points A and C.