# Scalar Product (Dot Product)

1. Calculate $\vec{U} \cdot \vec{V}$ given that $\vec{U} = (-4, 1)$ and $\vec{V} = (0, 1)$.

$\vec{U} \cdot \vec{V} =$

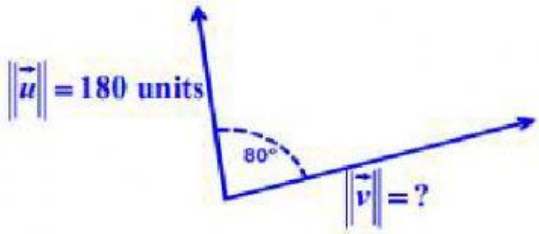
2. Use the scalar product to find the angle between $\vec{U}$ *and* $\vec{V}$ given that $\vec{U} = (-1, 3)$ and $\vec{V} = (2, 1)$. Round your angle to the nearest whole number.

$\|\vec{U}\| = \sqrt{\phantom{xx}}$

$\|\vec{V}\| = \sqrt{\phantom{xx}}$

$\theta =$

3. Given the following diagram, calculate $\|\vec{V}\|$ if $\vec{U} \cdot \vec{V} = 7200$.



$\|\vec{V}\| =$

4. Calculate $\vec{U} \cdot \vec{V}$ given that $\|\vec{U}\| = 60\ units$ and is oriented E 30° N and $\|\vec{V}\| = 50\ units$ and is oriented N.

   *Draw a diagram of the situation and find the angle between them*

$\vec{U} \cdot \vec{V} =$