

Warmup #6: Dot Product

1. Find the angle between the two vectors given

$$\|\vec{a}\| = 3, \|\vec{b}\| = 4, \text{ and } \vec{a} \cdot \vec{b} = 7$$

$$\cos \theta = \frac{\vec{a} \cdot \vec{b}}{\|\vec{a}\| \|\vec{b}\|}$$

$$\cos \theta = \frac{7}{3 \cdot 4}$$

$$\cos \theta = \frac{7}{12}$$

$$\theta = \cos^{-1} \left(\frac{7}{12} \right)$$

$\theta = 54.31^\circ$