

Physics 101 Rec  
Quiz#2  
Chapter 3e

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Name:

Id:

Sect:

Consider the following two vectors:  $\vec{A} = 2\hat{i} - 3\hat{j} + 1\hat{k}$  and  $\vec{B} = -3\hat{i} + 5\hat{j} - 2\hat{k}$ . Find the angle between the two vectors. Hint: use the definition of the scalar product.

$$\vec{A} \cdot \vec{B} = |\vec{A}| |\vec{B}| \cos \theta$$

$$\vec{A} \cdot \vec{B} = -6 - 15 - 2 = -23$$

$$|\vec{A}| = \sqrt{4 + 9 + 1} = \sqrt{14}$$

$$|\vec{B}| = \sqrt{9 + 25 + 4} = \sqrt{38}$$

$$\theta = \cos^{-1} \left[ \frac{-23}{\sqrt{14} \times \sqrt{38}} \right] = 175.7^\circ$$