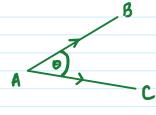SL 📷

$\overrightarrow{AB}$ and $\overrightarrow{AC}$ are two vectors such that $\overrightarrow{AB} = \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix}$ and $\overrightarrow{AC} = \begin{pmatrix} 2 \\ 0 \\ 1 \end{pmatrix}$

Find $B\hat{A}C$ to the nearest degree.

$|\overrightarrow{AB}| = \sqrt{3^2 + (-1)^2 + 2^2}$
$= \sqrt{14}$

$|\overrightarrow{AC}| = \sqrt{2^2 + 0^2 + 1^2}$
$= \sqrt{5}$

Angle between 2 vectors **a** and **b**

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

$\overrightarrow{AB} \cdot \overrightarrow{AC} = \begin{pmatrix} 3 \\ -1 \\ 2 \end{pmatrix} \cdot \begin{pmatrix} 2 \\ 0 \\ 1 \end{pmatrix}$

$= 3 \cdot 2 + (-1) \cdot 0 + 2 \cdot 1$
$= 6 + 0 + 2$
$= 8$

$= \dfrac{8}{\sqrt{14}\sqrt{5}}$

$\cos\theta = \dfrac{8}{\sqrt{70}}$

$\theta \approx 17°$

```
🔋    Math Deg Norm1  d/c Real
cos⁻¹ ( 8 / √14 √5 )
                17.02386618
□

DEL-LINE DEL-ALL
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