

Angles

Angles: example

The angle θ between $\langle 1, 3, 5 \rangle$ and $\langle -1, 3, 2 \rangle$ satisfies

$$18 = \sqrt{35}\sqrt{14} \cos(\theta).$$

Conclusion: $\theta = 0.6212404\dots$ radians, or around 35.59 degrees.

No picture necessary!

Angles: one to try

What is the angle between $\langle 1, 0, 0 \rangle$ and $\langle 2, 2, 0 \rangle$?

Angles: orthogonality

Two vectors **a** and **b** are perpendicular if and only if $\mathbf{a} \cdot \mathbf{b} = 0$.

Geometry encoded with numbers.

