# Dot Product

## Definition and prove

Chart

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A picture containing application

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For prove this, we need to use cosine rule,

Chart

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In here, we do a quick review of cosine rule

,. Based on the same theory, we get . Therefore,

According to the cosine rule, we get , in here, so we get

## Geometrical interpretation

Diagram

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means we project vector b to the line of vector A, then calculate the product of them