

# Cosine Law

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This activity was adapted from the Sam Shah's blog post on the law of cosines.

## 1 Goals

The goals of this activity are:

1. To help students prove the cosine law in vector form.

## 2 Materials

For this activity you will need:

1. Handouts

## 3 Instructions

This activity will take approximately 35 minutes.

1. Form groups of 3 to 4 students, give students handouts, and explain the goals of the activity.
2. Ask students to fill in missing information in the handout, and obtain an identity by filling in the bottom equation consisting of squares and rectangles.
3. As students work on the handout, visit each group to answer any questions they may have.
4. Relate the identity obtained to the cosine law they might have learnt in high school.

## 4 Tips

1. Students might not recall trigonometry from high school, so it useful to provide an explanation of the definition of the cosine function, and compute one of the lengths for the students using this definition.