

# MATHEMATICS

Class : \_\_\_\_\_

Group members :

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# Student Worksheet



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## Learning Outcomes

At the end of Phase E, students are able to solve right triangle problems involving trigonometric ratios and their applications.

## Learning Objectives

After participating in group discussions, students are expected to be able to accurately associate the concept of trigonometric ratio with the problems given.

## Instructions

1. Read the instructions carefully.
2. Follow the steps according to the given instructions.
3. If there are things you don't understand, you may ask the teacher.

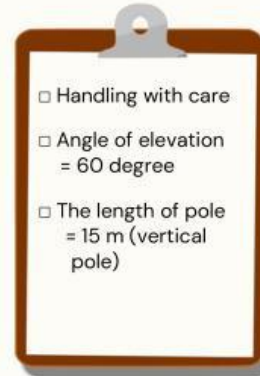
**Before we start, how are you feeling today?**





## Stimulation

Now, let's imagine that you have a  
"Catamaran Sailboat"



Then, you decide to decorate the sail with twinkling lights.  
But in the boat's maintenance instructions, only the angle of the sail and the length of the pole are provided.



## Problem Statement

Do you think there is a way to find out the formula for the length of all sides of the sail ?

Write down your group hypothesis in the box below.

**Hypothesis**

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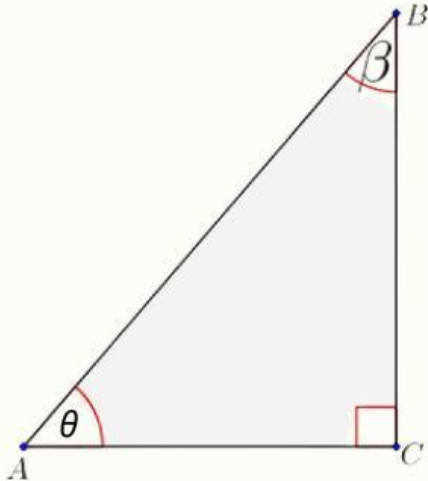
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## Data Collection

To help you understand the information and collect data from the previous problem, let's complete the concept below.



The trigonometric ratios for  $\theta$

$$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}}$$

.....

$$\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}}$$

.....

$$\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$$

.....



## Data Processing & Verification

Now, let's go back to the problem we started with.

Based on the "data collection" section, is your hypothesis proven?

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## Data Processing & Verivication



You can draw a triangle sketch here

Which formula can we use?

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## Generalization

Now, let's make a conclusion

What conclusions can you draw from this activity?

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