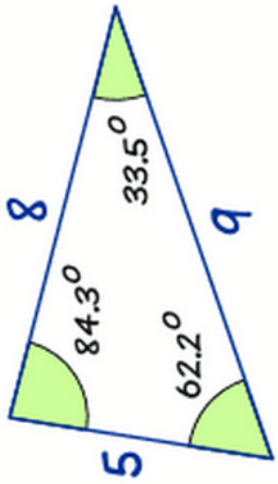
MBF 3C1 Name: _____

The Sine Law

DRAW AN ACUTE TRIANGLE. *Each angle should be less than 90°*	COMPLETE THE CHART FOR THE TRIANGLE.					
	**Angle**	**Angle Measure**	**Sine of Angle**	**Length of Opposite Side**	**Ratios**	
		Measure each angle using a protractor. Be as accurate as possible.	Calculate the sine of each angle using a calculator.	Measure the length of each side using a ruler. Be as accurate as possible.	Calculate each of the following ratios using a calculator.	
	∠A			$a =$	$\frac{a}{\sin A} =$	$\frac{\sin A}{a} =$
	∠B			$b =$	$\frac{b}{\sin B} =$	$\frac{\sin B}{b} =$
	∠C			$c =$	$\frac{c}{\sin C} =$	$\frac{\sin C}{c} =$
DESCRIBE ANY RELATIONSHIPS YOU NOTICE IN THE TABLES.						

The **SINE LAW**

$$\frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c} \quad \text{or} \quad \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

can be used to calculate an unknown:

- **side** when *two angles* and *any side* are given
- **angle** when *two sides* and *an opposite angle* are given

When using the sine law, start with the unknown angle or side and then create the appropriate ratio to solve.

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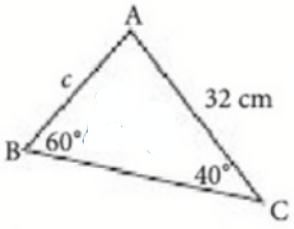
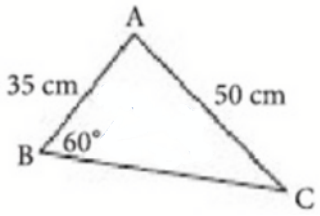
Example 1

Find the measure of *c*.



Example 2

Find the measure of *C*.



Example 3

Two ships are located 15 nautical miles apart. The angle of Ship 1 to the entrance of the port is 55° with respect to Ship 2. Ship 2's angle to the entrance to the port is 45° with respect to Ship 1. Which ship is closer to the port entrance? How far is this ship form port? Round your answer to the nearest tenth.