

Before we begin, are there any questions from last day's work?

Today's Learning Goal(s):

By the end of the class, I will be able to:

- Correctly write the sine **LAW** in one of the two forms.
- Use the sine law to solve a **non**-right triangle.

We will begin today's class with

Quiz 1.2 on SOH CAH TOA

(a.k.a. "Show What You Know")

Scan at Library!!
Hand out text books/cards today?

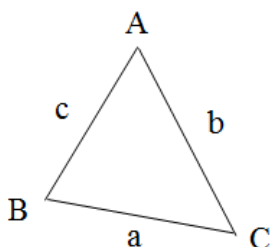
Collect Homework

MBF 3CI

1.3 The Sine Law

Date: Sept. 11/17

The Sine Law can be used with any triangle, even if it is not a right triangle.
 Given any triangle,

Collect Homework

$$\textcircled{1} \quad \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

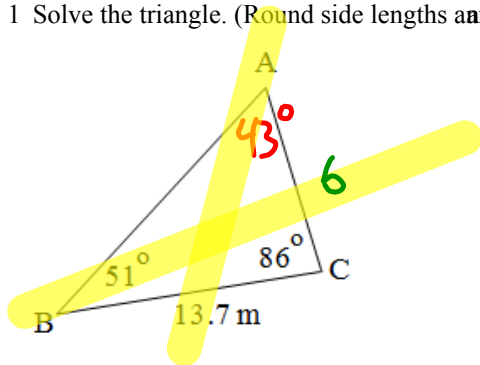
and

$$\textcircled{2} \quad \frac{\sin A}{a} = \frac{\sin B}{b} = \frac{\sin C}{c}$$

If you are trying to determine an unknown side, then use the formula given ①.

If you are trying to determine an unknown angle, then use the formula given in ②.

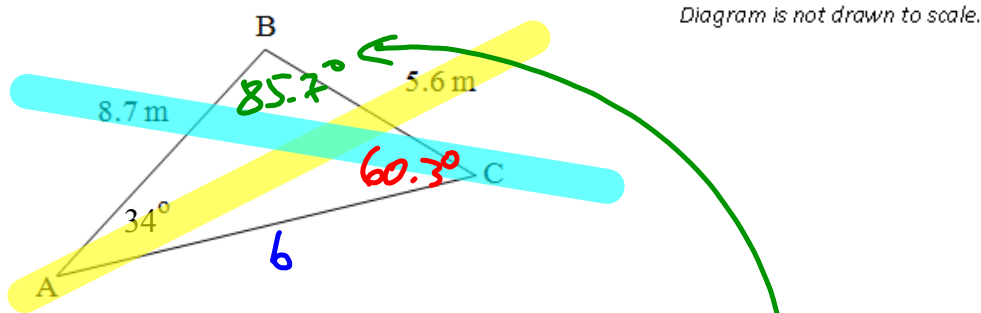
Ex. 1 Solve the triangle. (Round side lengths and angles to one decimal place.)



☞ $\angle A$	☞ choose b or c (order won't matter)	☞ c
☞ $\angle A = 180^\circ - 86^\circ - 51^\circ$ ☞ $= 43^\circ$	☞ b	☞ $\frac{c}{\sin 86^\circ} \rightarrow \frac{13.7}{\sin 43^\circ}$
	☞ $\frac{b}{\sin 51^\circ} = \frac{13.7}{\sin 43^\circ}$	☞ $c \sin 43^\circ = 13.7 \sin 86^\circ$
$b = \sin 51^\circ \times \frac{13.7}{\sin 43^\circ}$	☞ $b \sin 43^\circ = 13.7 \sin 51^\circ$	☞ $c = \frac{13.7 \sin 86^\circ}{\sin 43^\circ}$ $c = \sin 86^\circ \times \frac{13.7}{\sin 43^\circ}$
	☞ $b = \frac{13.7 \times \sin 51^\circ}{\sin 43^\circ}$	☞ $c \doteq 20.03$
	☞ $b \doteq 15.61$	☞ $c \doteq 20.0 \text{ m}$
	☞ $b \doteq 15.6 \text{ m}$	

turn over ↩

Ex. 2 Solve the triangle. (Round side lengths and angles to one decimal place.)



$\angle C$	$\angle B$	b
$\frac{\sin C}{c} = \frac{\sin A}{a}$ $\frac{\sin C}{8.7} = \frac{\sin 34^\circ}{5.6}$ $5.6 \sin C = 8.7 \sin 34^\circ$ $\sin C = \frac{8.7 \sin 34^\circ}{5.6}$ $C = \sin^{-1}\left(\frac{8.7 \sin 34^\circ}{5.6}\right)$ $C \doteq 60.31$ $C \doteq 60.3^\circ$	$\angle B \doteq 180^\circ - 34^\circ - 60.3^\circ$ $B \doteq 85.7^\circ$	$\frac{b}{\sin B} = \frac{a}{\sin A}$ $\frac{b}{\sin 85.7^\circ} = \frac{5.6}{\sin 34^\circ}$ $b \sin 34^\circ = 5.6 \sin 85.7^\circ$ $b = \frac{5.6 \sin 85.7^\circ}{\sin 34^\circ}$ $b \doteq 9.98$ $b \doteq 10.0 \text{ m}$

$b = 9.98$

Review the learning goals. Were we successful today?

Today's Entertainment: p. 31 #1a, 2b, 3b, 5, 7 (write an explanation – you don't need a partner) , 9