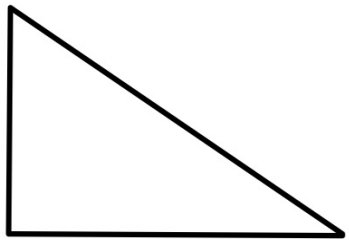
Bellwork

Solve the following right triangle given the information:

1. $\angle A = 50^{o}$ & $a = 25$



Review on Solving Triangles

Given:

1. Right Triangles - Given 2 pieces of info.
    A. 2 sides
    B. 1 side and 1 angle
2. Any other triangle - Given 3 pieces of info
    A. 2 sides and 1 angle
    B. 1 side and 2 angles

Need:

Find all remaining sides and angles that are not given.

The Law of Sines

$$\frac{\text{Sin } A}{a} = \frac{\text{Sin } B}{b} = \frac{\text{Sin } C}{c}$$

OR

$$\frac{a}{\text{Sin } A} = \frac{b}{\text{Sin } B} = \frac{c}{\text{Sin } C}$$

Word of Caution

When given 2 sides and a non-included angle there are several possible answers:

A. No solutions

B. One solution

C. Two solutions

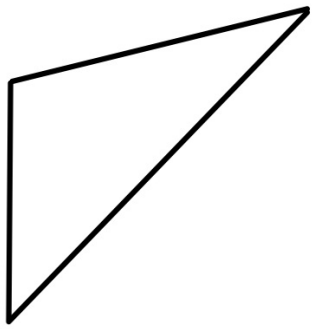
Focus:

We will focus on the situations where there is at least one solution. I will find both of them and if you have a different answer than the first I give in class ask about it.

Example

Solve △ ABC:

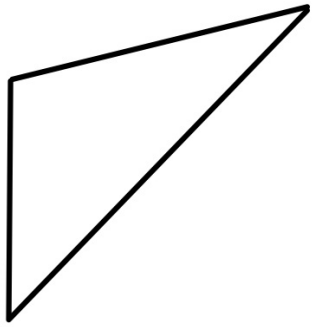
1. ∠B = 45º, ∠C = 95º, & b = 32



Example

Solve $\triangle ABC$:

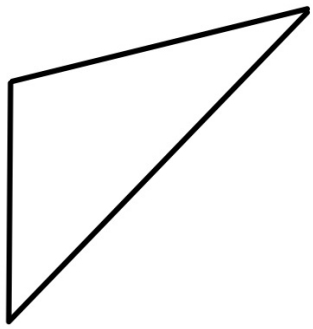
2. $\angle A = 120^\circ$, $a = 50$, & $b = 25$



Example

Solve △ ABC:

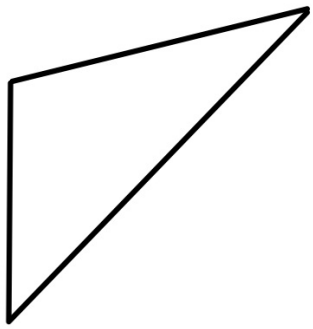
3. ∠A = 65º, a = 20, & b = 53



Example

Solve △ ABC:

4. ∠A = 72º, ∠C = 35º, c = 65



Example

Solve $\triangle ABC$:

5. $\angle A = 34^\circ, \angle C = 118^\circ, a = 15$