

## What's Going On?

**Checking In**

**Minds on**

Setting it up.

**Action!**

Solving for sides.  
Solving for angles.

**Consolidation**

Setting up to solve.

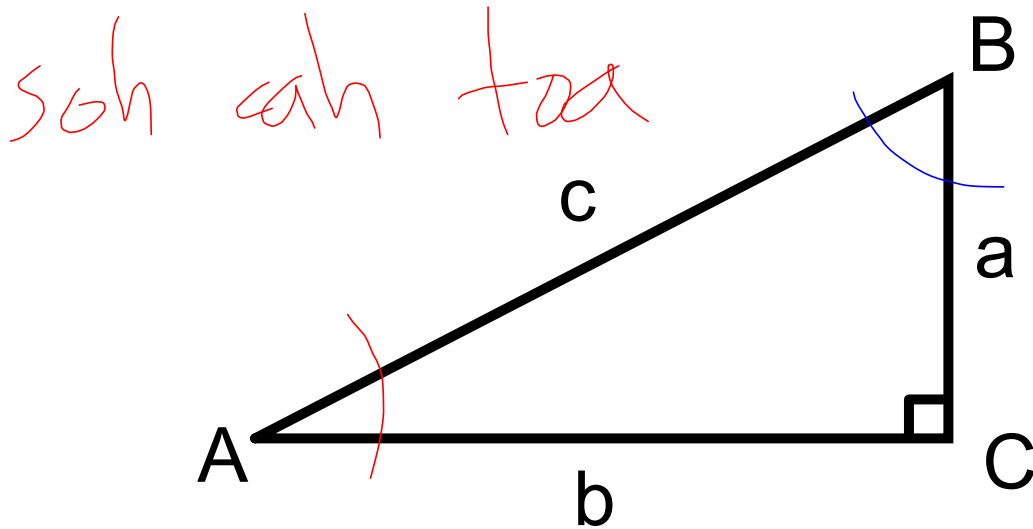
**Learning Goal - I will be able to solve for missing sides and angles in right triangles.**

 **Minds on**

# Setting it Up

# Minds on

## Setting it Up



Reference Angle: A

$$\sin A = \frac{a}{c}$$

$$\cos A = \frac{b}{c}$$

$$\tan A = \frac{a}{b}$$

Reference Angle: B

$$\sin B = \frac{b}{c}$$

$$\cos B = \frac{a}{c}$$

$$\tan B = \frac{b}{a}$$

# Friendly Reminders

When we are solving trigonometry problems, if

we know the value of an angle, we use that

angle as our reference angle.

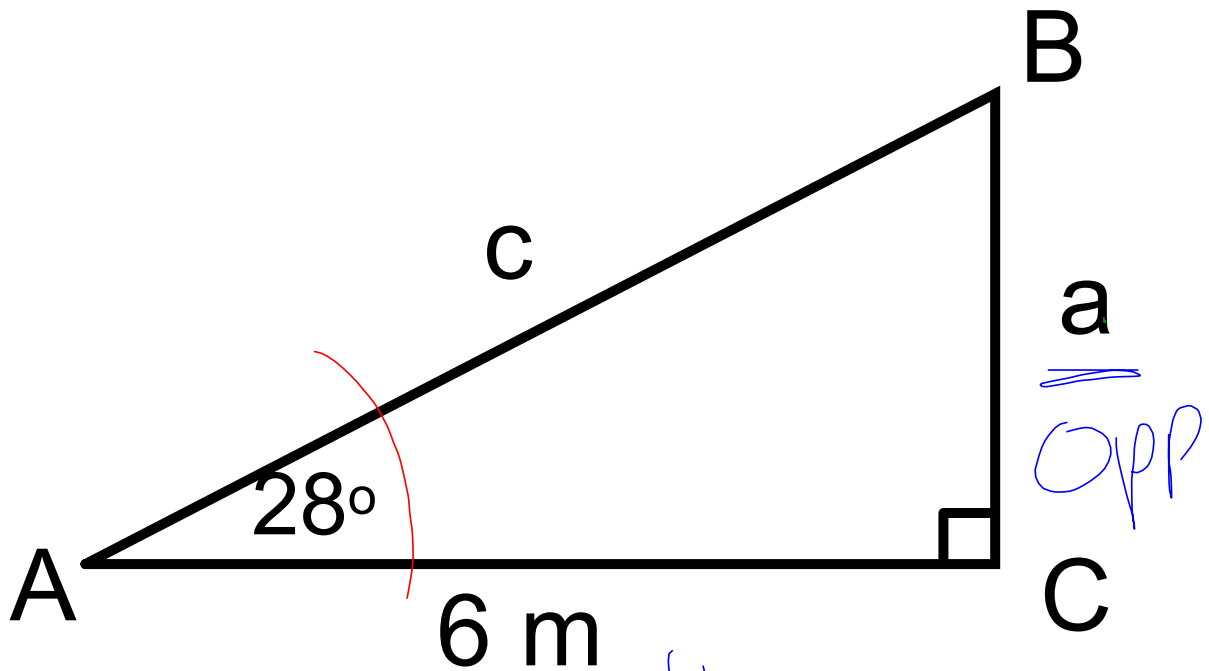
If we are looking for an angle, the angle we are

looking for becomes our reference

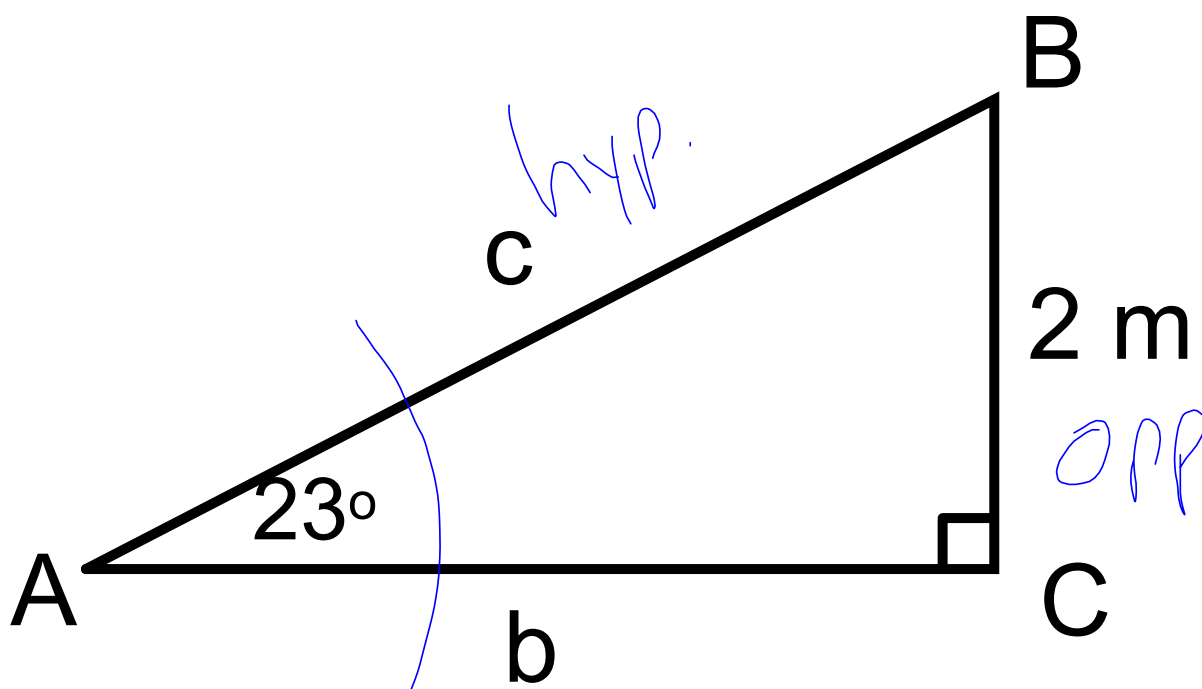
angle.

Remember:

$\sin(\text{angle})$ ,  $\cos(\text{angle})$  and  $\tan(\text{angle})$  are just numbers! Use your calculator!

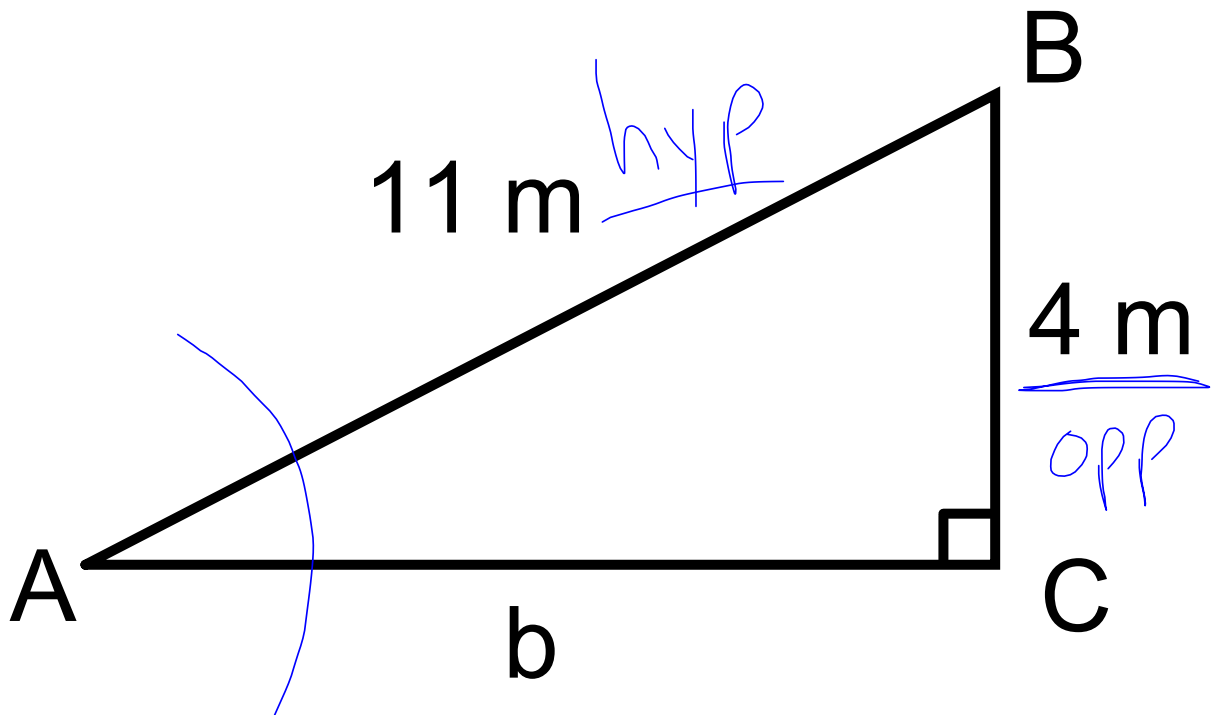
**Minds on****Setting it Up****Solve for side a**

$$\tan 28^\circ = \frac{a}{6}$$

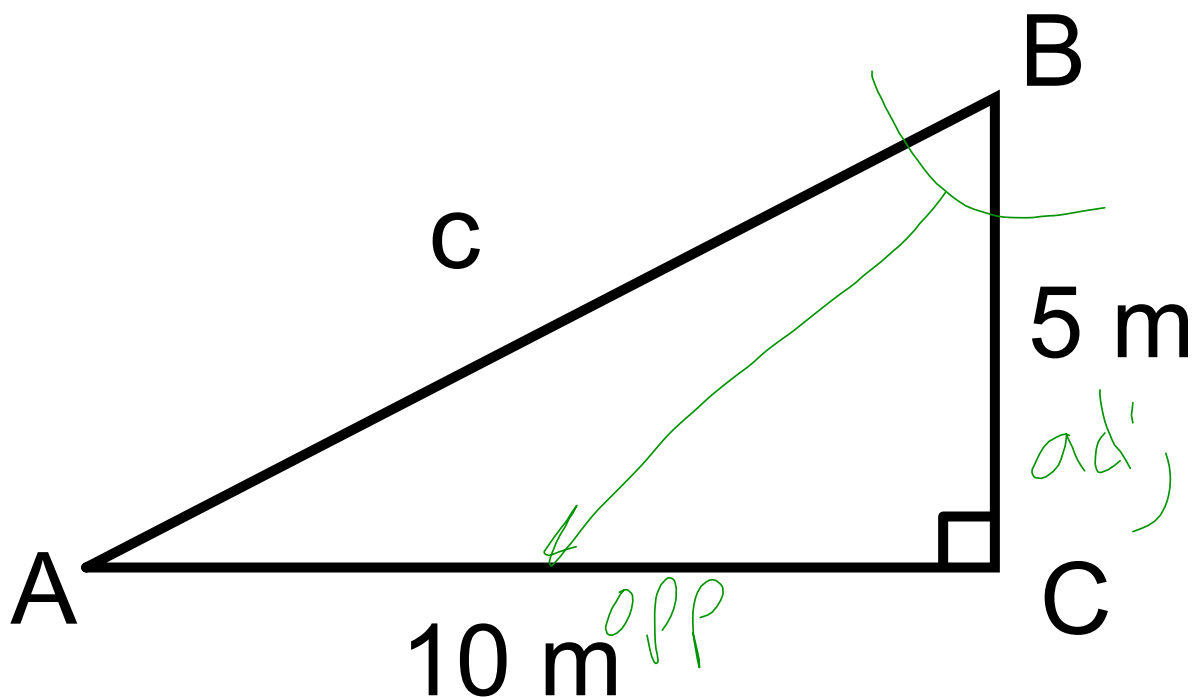
**Minds on****Setting it Up****Solve for side c**

$$\sin 23^\circ = \frac{2}{c}$$

SOH

**Minds on****Setting it Up****Solve for angle A**

$$\sin A = \frac{4}{11} \quad \text{Soln}$$

**Minds on****Setting it Up****Solve for angle B**

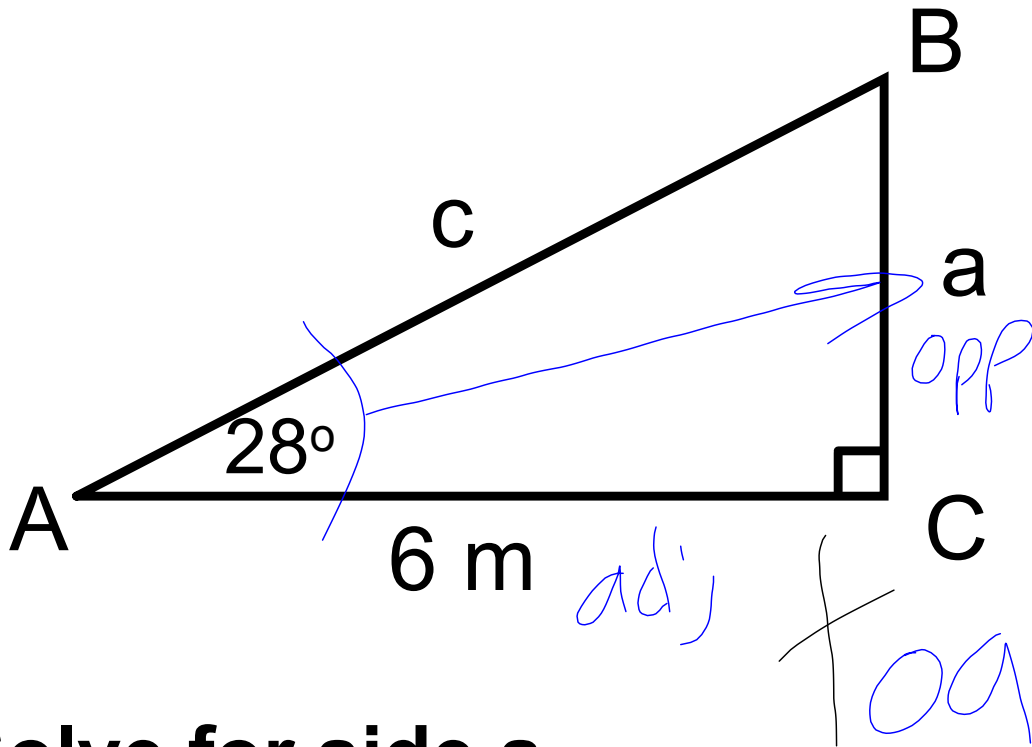
$$\tan B = \frac{10}{5}$$



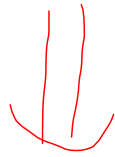
# Finishing Yesterday's Work

**Action!**

## Solving for Sides

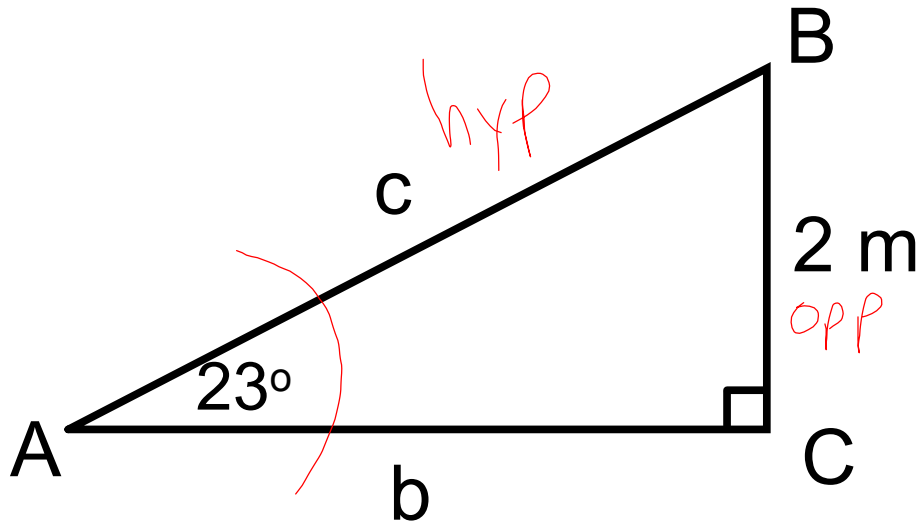
**Solve for side a**

$$\tan 28^\circ = \frac{a}{6}$$



$$6 \times 0.5317 = \frac{a}{6}$$

$$a = 3.2 \text{ m}$$

**Action!****Solving for Sides****Solve for side c***soh*

$$\sin 23^\circ = \frac{2}{c}$$

$$c \times 0.3907 = \frac{2}{\cancel{c}} \times \cancel{c}$$

$$\frac{c \times 0.3907}{0.3907} = \frac{2}{0.3907}$$

$$c = 5.1 \text{ m}$$

## Action!

# Solving for Sides

## To solve for a side:

1. Identify your reference angle.

2. Identify the side(s) you know and the side you want. (opp / adj / hyp)

3. Determine if you are going to use  $\frac{\sin}{oh}$ ,  $\frac{\cos}{ah}$  or  $\frac{\tan}{oa}$ .

4. Plug everything in and solve!

5. You will need to use the sin, cos or tan button on your calculator!

# Practice 1

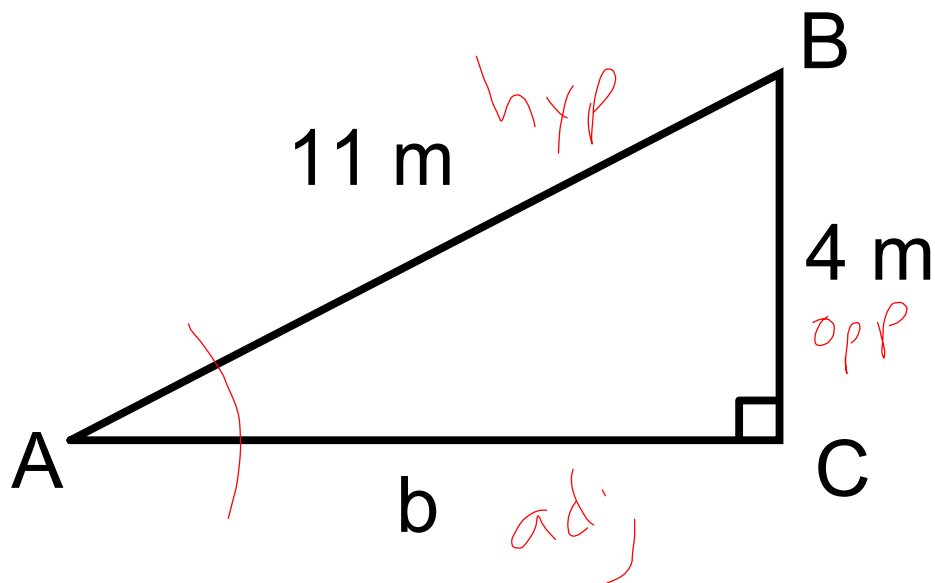
Let's spend some time solving for sides on paper.

Use your iPad notes to help you!

During RAFT you are either **ACTUALLY READING** or finishing the practice from Friday.

**Action!**

## Solving for Angles

**Solve for angle A**

$$\sin A = \frac{4}{11}$$

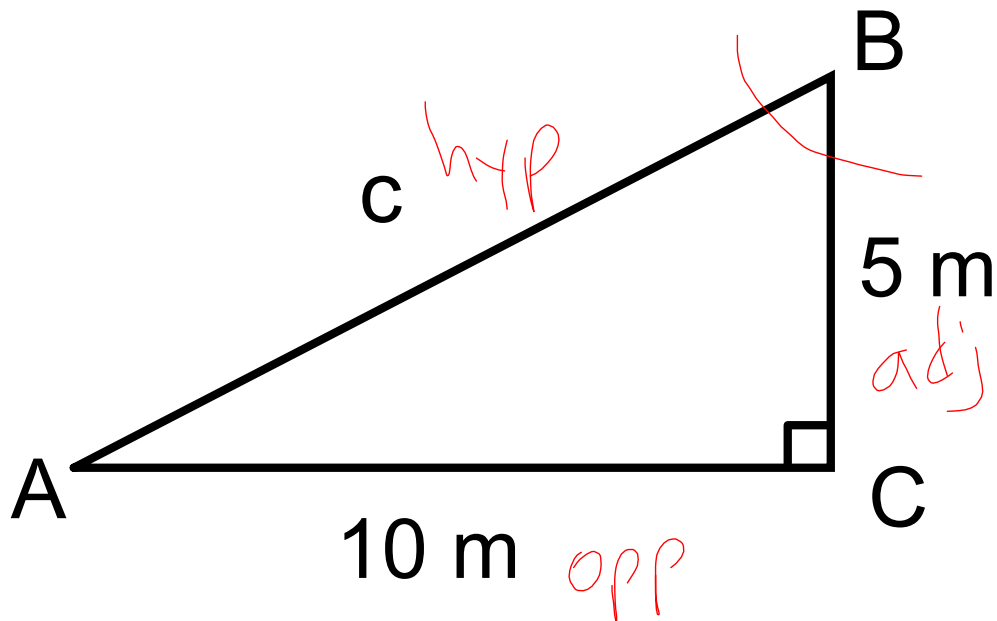
$$\sin A = 0.3636$$

$$A = \sin^{-1}(0.3636)$$

$$A = 21^\circ$$

**Action!**

## Solving for Angles

**Solve for angle B**

$$\tan B = \frac{10}{5}$$

$$\tan B = 2$$

$$B = \tan^{-1}(2)$$

$$B = 63^\circ$$

**Action!**

# Solving for Angles

## To solve for an angle:

1. Identify the angle you want, this will

become your reference angle.

2. Identify the sides you know (opp / adj / hyp)

3. Determine if you are going to use sin,

cos or tan.

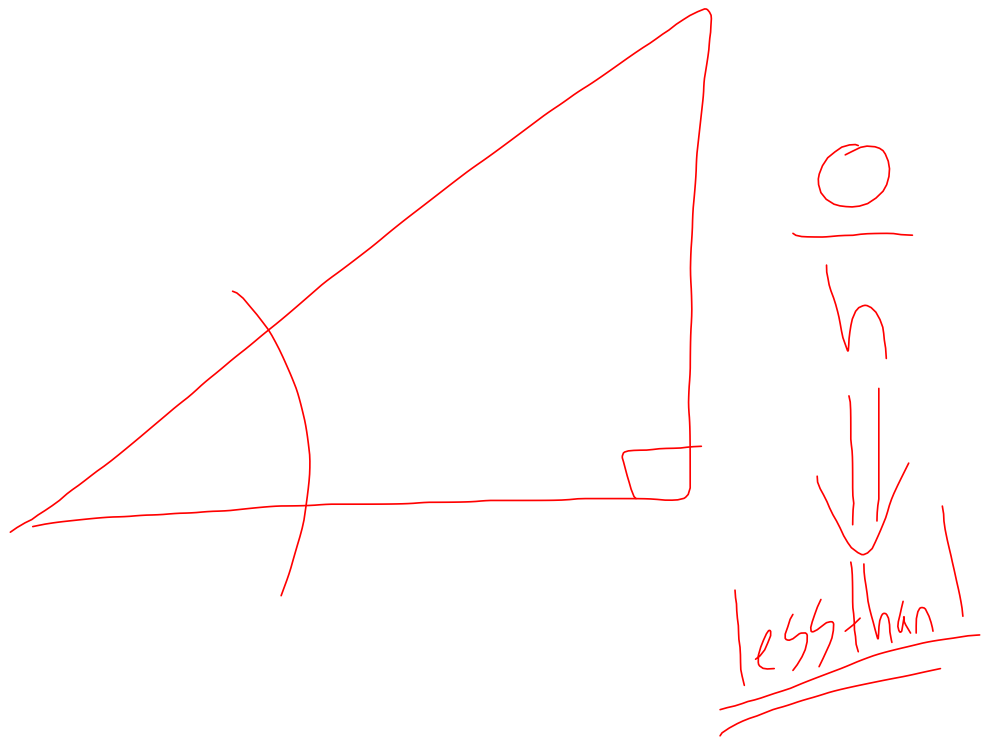
4. Plug everything in and solve!

5. You will need to use the 2nd sin, 2nd cos or

2nd tan button on your calculator!

$\sin^{-1}$   
 $\cos^{-1}$   
 $\tan^{-1}$





# Practice 2

Let's spend some time solving for angles on paper.

Use your iPad notes to help you!

## Consolidation

# Restrictions

1. What do all of the angles in any triangle add up to?

2. What is the largest angle you can have in a right triangle (other than the right angle)?

3. What side is always the longest in a right triangle?

## Consolidation

# Restrictions

4. What is the largest possible value of the sine of an angle? Why?

5. What is the largest possible value of the cosine of an angle? Why?

