$a^2 + b^2 = c^2$ **Review** $12^2 + b^2 = 37^2$
Hypotenuse $144 + b^2 = 1369$
θ $-144 \qquad -144$
                                     $\sqrt{b^2} = \sqrt{1225}$

Find the values of the six trigonometric functions for
                                     $b = 35$

Hyp
θ 37
adj 12

35
opp
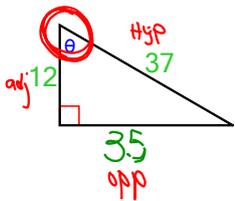
$\sin\theta = \dfrac{35}{37}$ $\csc\theta = \dfrac{37}{35}$

$\cos\theta = \dfrac{12}{37}$ $\sec\theta = \dfrac{37}{12}$

$\tan\theta = \dfrac{35}{12}$ $\cot\theta = \dfrac{12}{35}$


Trig: Finding the missing side   5-13-15

Using the Pythagorean Theorem

$$a^2 + b^2 = c^2$$

$7^2 + 9^2 = c^2$ $9^2 + b^2 = 12^2$
$49 + 81 = c^2$ $-81 + b^2 = 144$
$\sqrt{130} = \sqrt{c^2}$ $-81 \qquad -81$
                          $\sqrt{b^2} = \sqrt{63}$
Example 1:   **Example 2:**
                          $b = 7.9$

7   c 11.4   12   9

9   7.9 b
                         7.9
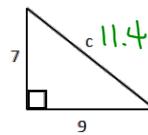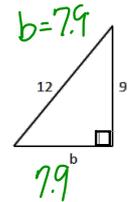
Using the Trig Functions

Find the missing side. Degree Mode

Example 3:

opp   Hyp
6   x
       37°
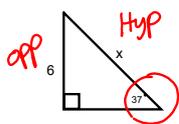
$\sin 37° = \dfrac{6}{x}$

$x = \dfrac{6}{\sin 37°}$

$x = 9.97$

Example 4:

B
Hyp
x
A 40°
b = 6   C
adj
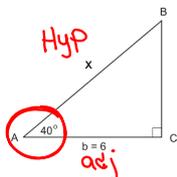
$\cos 40° = \dfrac{6}{x}$

$x = \dfrac{6}{\cos 40°}$

$x = 7.83$

Example 5:

adj
24
13°
x opp
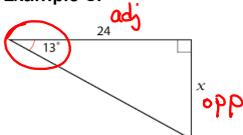
$24 \cdot \tan 13° = \dfrac{x}{24} \cdot 24$

$24 \cdot \tan 13° = x$

$x = 5.54$

Conclusion...

1. If your given one side and one angle, how can you find the missing side? TRIG

2. If your given two sides, what can you use to find the third side? Pythagorean Thm

3. Questions????

Assignment:

Trig: Finding the Missing Side
WS