Right Triangles

Note: make sure your graphing calc is set to degrees

SOH - CAH -TOA

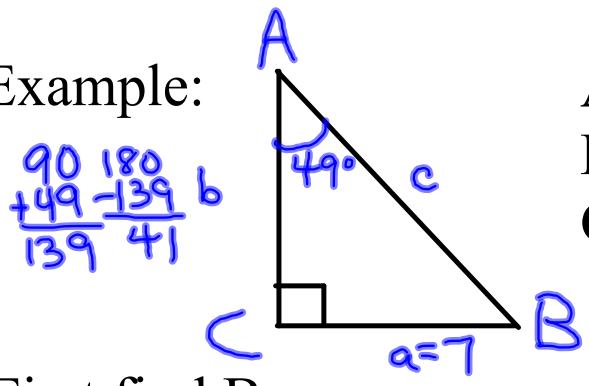
$$\sin = \frac{\text{opp}}{\text{hyp}}$$

$$\cos = \frac{\text{adj}}{\text{hyp}}$$

$$\tan = \frac{\text{opp}}{\text{adj}}$$

When solving right triangles, round the angle to the nearest degree and the side measures to the nearest tenth.

Example:



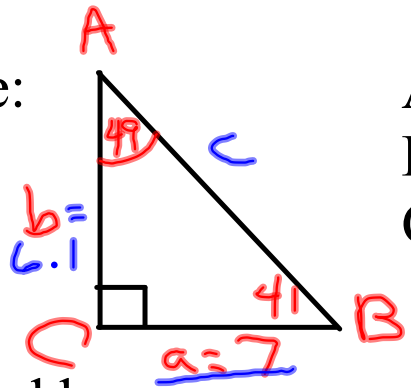
90 180
+49 −139 b
139 41

A = 49 a = 7
B = 41° b =
C = 90 c =

First find B.

When solving right triangles, round the angle to the nearest degree and the side measures to the nearest tenth.

Example:



A = 49 a = 7
B = 41 b = 6.1
C = 90 c =

Then find b.

$\tan 49 = \frac{7}{b}$

$\frac{1.1504}{1} = \frac{7}{b}$

$1.1504b = 7$

$b = \frac{7}{1.1504}$

$b = 6.1$

Then find c. There are two ways:

$\sin 49 = \frac{7}{c}$

$.7547 = \frac{7}{c}$

$.7547c = 7$

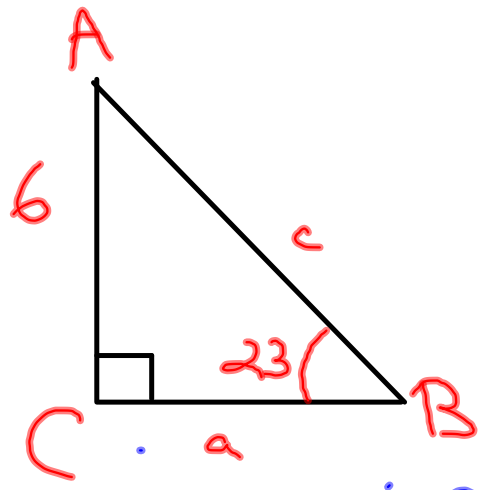
$c = 9.3$

Pythagorean Theorem: $a^2 + b^2 = c^2$

$c = 9.3$ $\quad 7^2 + 6.1^2 = c^2$

$49 + 37.21$

$c^2 = 86.21$



$A = 67$ $a = 14.1$

$B = 23$ $b = 6$

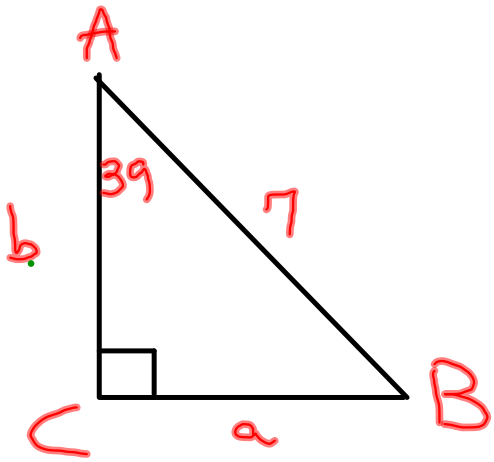
$C = 90$ $c = 15.4$

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

$36 + b^2 = 15.4^2$

$\tan 23 = \frac{6}{a}$ $\sin 23 = \frac{6}{c}$

$.4245a = 6$ $.3907c = 6$



$A = 39 \quad a = 4.4$

$B = 51 \quad b = 5.4$

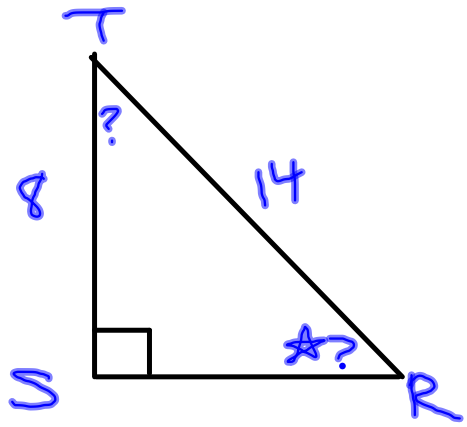
$C = 90 \quad c = 7$

$\sin 39 = \frac{a}{7}$

$a = 4.4$

$\cos 39 = \frac{b}{7}$

$b = 5.4$

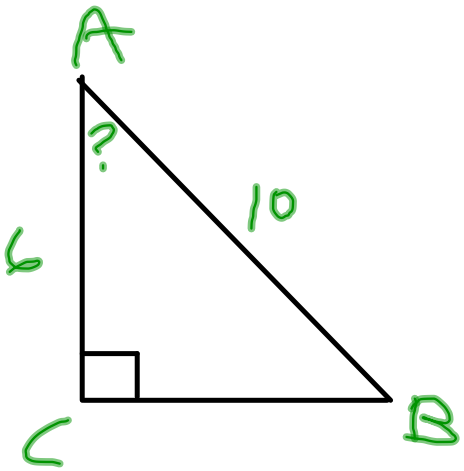


$\cos T = \frac{8}{14}$

$\sin R = \frac{\text{opp}}{\text{hyp}} = \frac{8}{14}$

$\sin R = .5714$

$R = 35°$


A
?
10
6
C
B