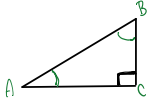


Trig Ratios - Tangent Ratio

Monday, November 7, 2016 5:07 PM

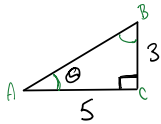
A Trig Ratio is the Ratio between one side over another side. An example of this would be



$$\frac{\text{side } BC}{\text{side } AC}$$

When I divide these two quantities
I can get a ratio.

Let's add values



$$\text{Ratio } \frac{\text{side } BC}{\text{side } AC} = \frac{3}{5}$$

with respects to θ

side AC = adjacent side

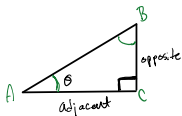
side BC = opposite side

this means for θ in this
example

$$\theta = \frac{\text{opposite}}{\text{adjacent}}$$

This is special type of Ratio
called the tangent Ratio

$$\tan \theta = \frac{\text{opposite}}{\text{adjacent}}$$



Let say $\theta = 20^\circ$

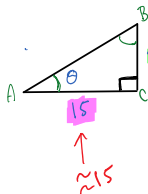
$$\tan 20 = \frac{\text{opp.}}{\text{adj.}}$$

plug into calculator by typing $\tan [20]$

$$0.364 = \frac{\text{opp.}}{\text{adj.}}$$

This value is your Ratio
How???

let's assume this is ≈ 5.5



Remember $\tan \theta = \frac{\text{opp.}}{\text{adj.}}$

$$= \frac{5.5}{15}$$

= Plug into calc.

This is a Ratio

How do you find an angle???

you go from Ratio to angle

Let say $\angle \theta$
 $\tan A = 0.4398$ ← Ratio
 $A = \tan^{-1}(0.4398)$

\tan^{-1} = inverse tan
 (ask Mr. Greenland to help
 you find this on your calculator)

TRY !!

$$\tan A = 0.0952$$

=
=

$$\tan A = 0.7243$$

=
=

$$\tan A = 56.2872$$

=
=

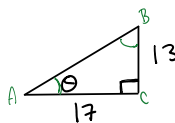
TRY !!

Draw and label a right triangle for the following tangent ratio.

Then Calculate the angle to the nearest degree

$$\tan \theta = \frac{13}{17}$$

solution



$$\begin{aligned} \tan &= \frac{\text{length of opp.}}{\text{length of adj.}} \\ \tan \theta &= \frac{13}{17} \\ \theta &= \tan^{-1}\left(\frac{13}{17}\right) \\ \theta &= 37.4053 \\ \theta &= 37^\circ \end{aligned}$$

HW Pg 75 # 3, 4, 5 all

Quiz next day

a