

What's Going On?

Checking In

Minds on

sin, cos or tan?

Action!

Solving for angles.

Consolidation

Exit Card

Learning Goal - I will use \sin^{-1} , \cos^{-1} and \tan^{-1} to solve for angles in right triangles.

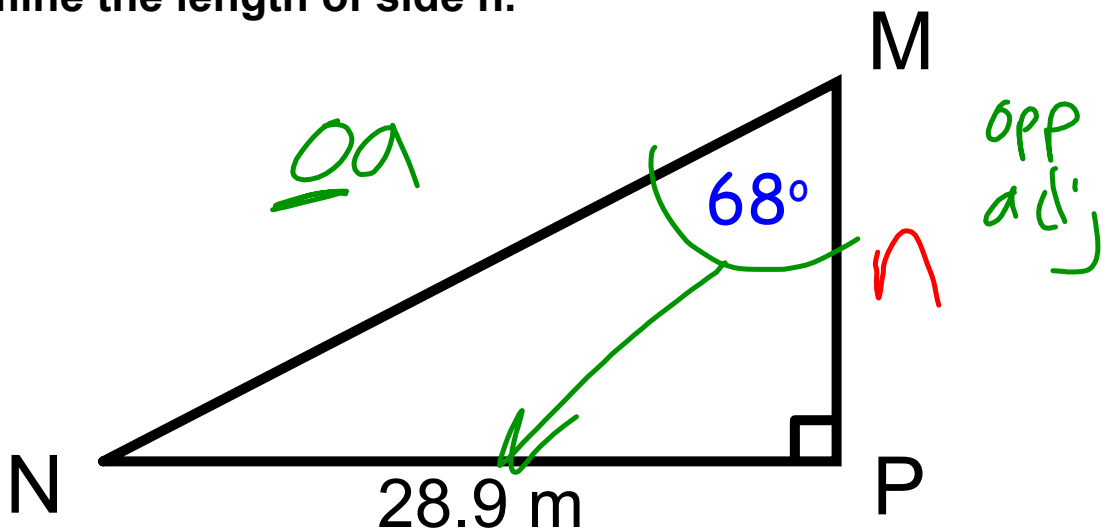
Checking In

F.F.M.

Name: _____

Date: _____

Determine the length of side n.



$$\tan(68) = \frac{28.9}{n}$$

$$2.475 = \frac{28.9}{n}$$

$$n = \frac{28.9}{2.475}$$

$$n = 11.7$$

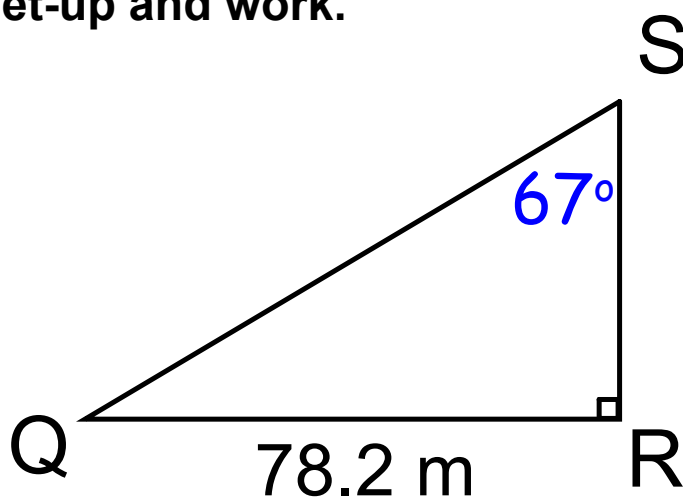
Checking In

Entry Card

Name: _____

Determine the length of side q .

Show your set-up and work.



Checking In

**Unit Test
Next Tuesday**

**In-Class Assignment
Tomorrow**

Minds on

 
sin, cos or tan?

We can use sin, cos and tan to determine the measures of angles in right triangles.

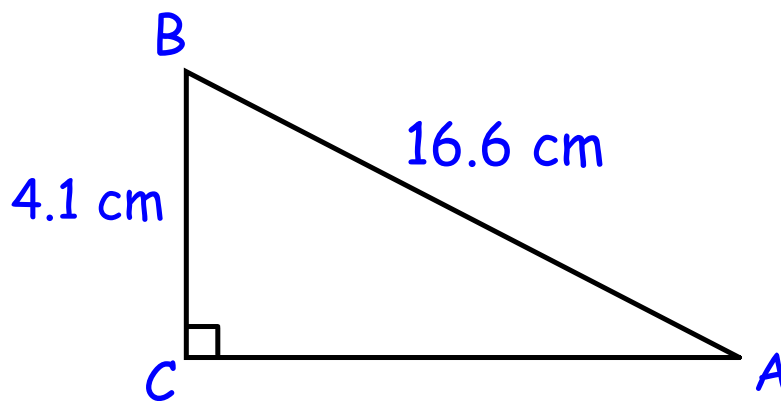
Before we can do anything else, we need to decide which trig ratio we are going to use!!

How can we do that?

Minds on

sin, cos or tan?

Determine the measure of angle A to one decimal place.



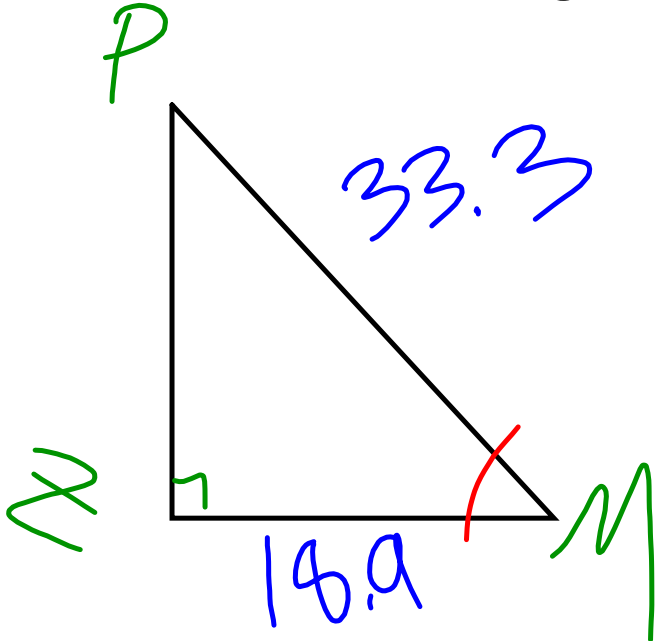
Finding Angles in Right Triangles

1. Identify the reference angle (**the angle we want!**)
2. Determine our "sides of interest" (**the sides we have!**)
3. Our sides of interest tell us which trig ratio to use.
 - opposite and hypotenuse → **sin** SOH
 - adjacent and hypotenuse → **cos** CAH
 - opposite and adjacent → **tan** TOA


Minds on

sin, cos or tan?

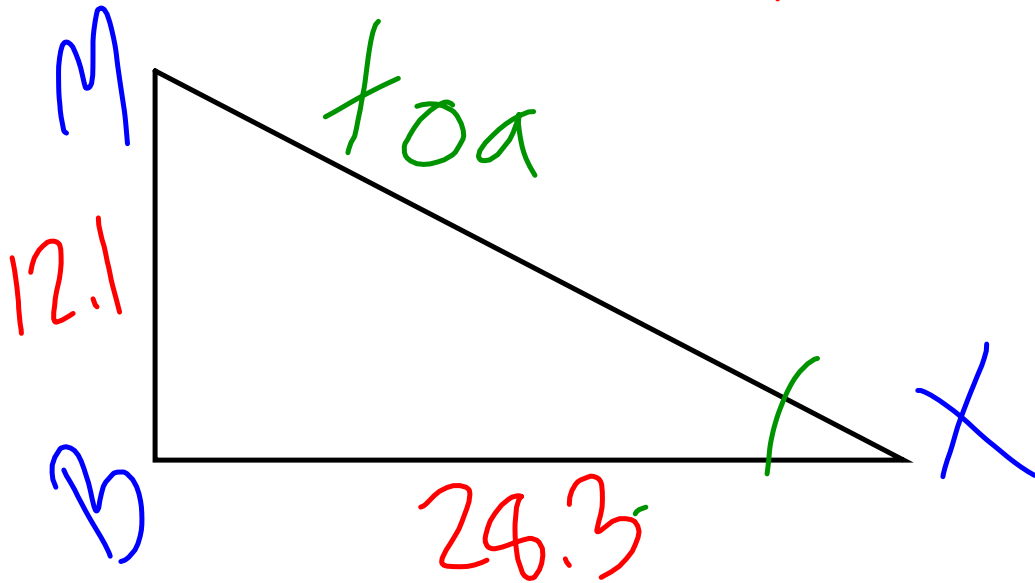
Determine the measure of angle M.



Minds on


sin, cos or tan?

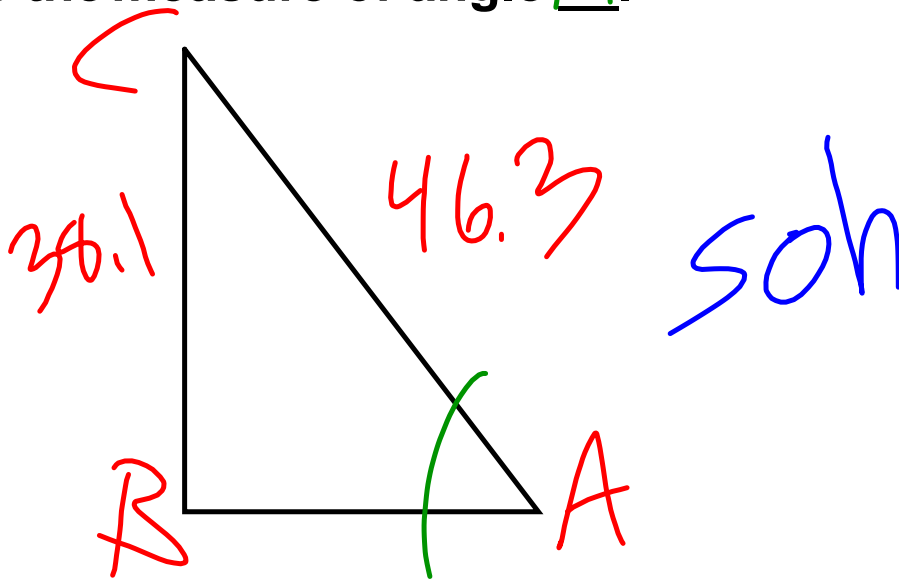
Determine the measure of angle $\angle X$.



Minds on

   
sin, cos or tan?

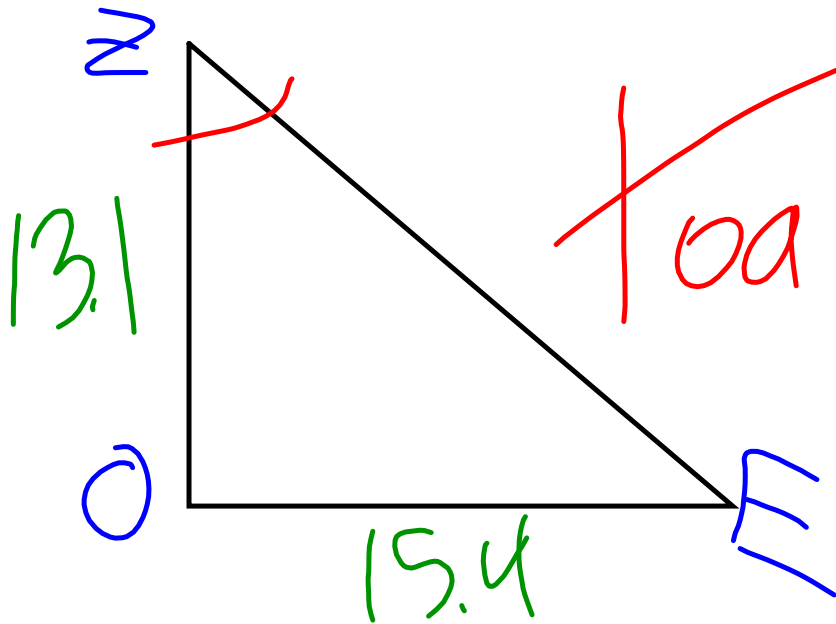
Determine the measure of angle A.



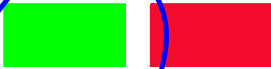

Minds on


sin, cos or tan?

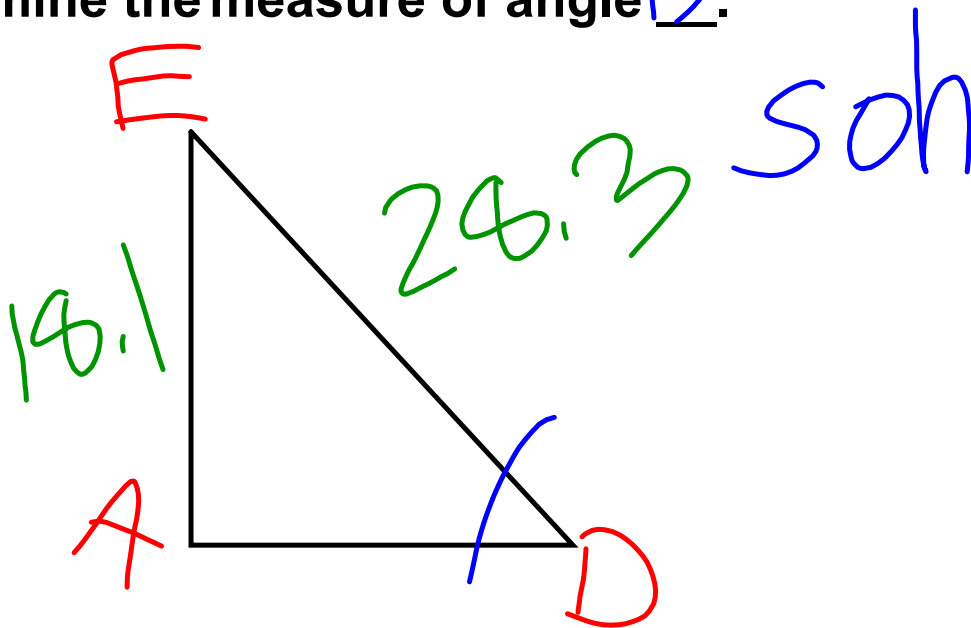
Determine the measure of angle Z.



Minds on

 
sin, cos or tan?

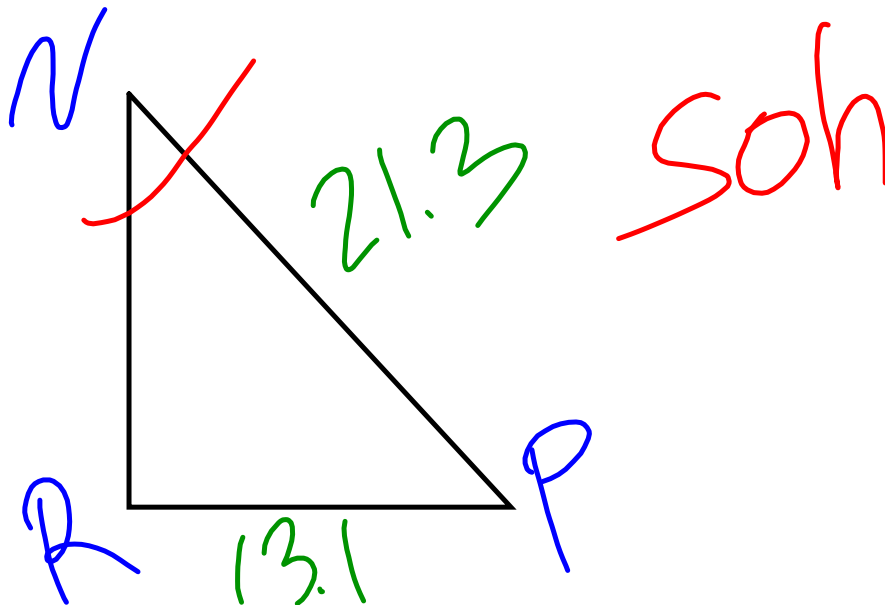
Determine the measure of angle D.



Minds on


sin, cos or tan?

Determine the measure of angle N.



Action!

Solving for Angles

To solve for an angle in a right triangle:

1. Decide if you are going to use sin, cos or tan.
2. Set up your trig ratio using sin, cos or tan.
3. Plug in your values. $\frac{2.3}{5.6}$
4. Evaluate your ratio to 4 decimal places.
5. Use the "inverse" sin, cos or tan button with the number you found in Step 4 to determine your angle. Round to the nearest whole degree.

opposite

Inverse sin, cos and tan

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

"inverse"

Action!

Inverse?!

If we had, for example, that

$$\sin(A) = \frac{3}{5}$$

This just means that for some angle A in a right triangle, the ratio of the opposite side to the hypotenuse is $\frac{3}{5}$ or 0.6

$$\sin(A) = 0.6$$

$$A = \sin^{-1}(0.6)$$

We want to know, what angle has a sine of 0.6?

$$A = \sin^{-1}(0.6)$$

Action!

Inverse?!

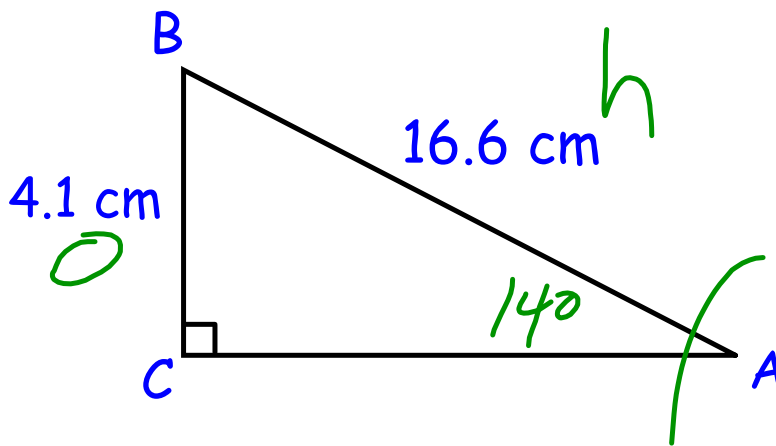
We use \sin \cos \tan when we have an angle

We use \sin^{-1} \cos^{-1} \tan^{-1} when we want an angle.

Action!

Solving for Angles

Determine the measure of angle A to one decimal place.



$$\sin(A) = \frac{4.1}{16.6}$$

$$\sin(A) = 0.2469$$

$$A = \sin^{-1}(0.2469)$$

$$A = 14.0$$

Consolidation**Exit Card**

Name: _____

Determine the measure of Angle H.**Show your set-up and work.**