Good morning!

1. "Here"
2. Calculator issues from SOHCAHTOA
3. Notes on Finding Missing Sides and Angles
4. Practice
5. DeltaMath Homework

Finding Missing Sides

Steps for Finding Missing Sides

1. Label your triangle opp, adj, hyp
2. Circle "key players" (SOHCAHTOA) C = A/H
3. Multiply if x is numerator,

   "Switch" if x is denominator

Ex. $\cos(30) = \frac{x}{2}$

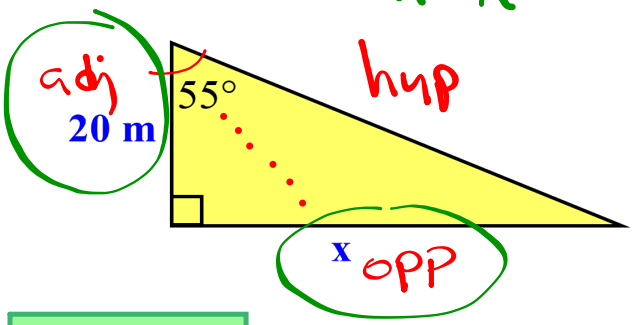
$\cos(30) = \frac{2}{x}$

$x \cdot \frac{\cos(30)}{\cos(30)} = \frac{2}{\cos(30)}$

$x = \frac{2}{\cos(30)}$

Ex: 1 Figure out which ratio to use. Find x. Round to the nearest tenth.

SOHCAHTOA



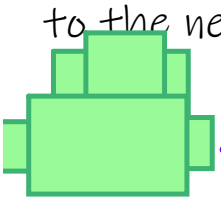
$20 \cdot \tan(55) = \frac{x}{20} \cdot 20$

$20 * \tan(55) = x$

$28.6 = x$


ANGLE SIDE SIDE
WHY YOU GOTTA BE SUCH A KNOW-IT-ALL?
BECAUSE I'M ALWAYS RIGHT.

Ex: 2 Figure out which ratio to use. Find x. Round to the nearest tenth.

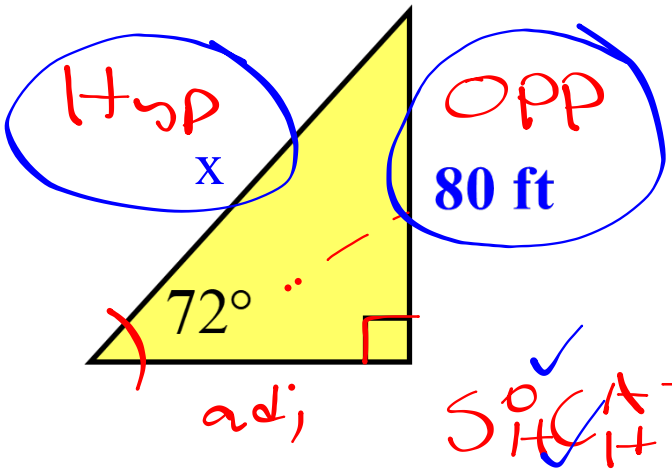


$\sin(72) = \frac{80}{x}$

$x * \sin(72) = 80$

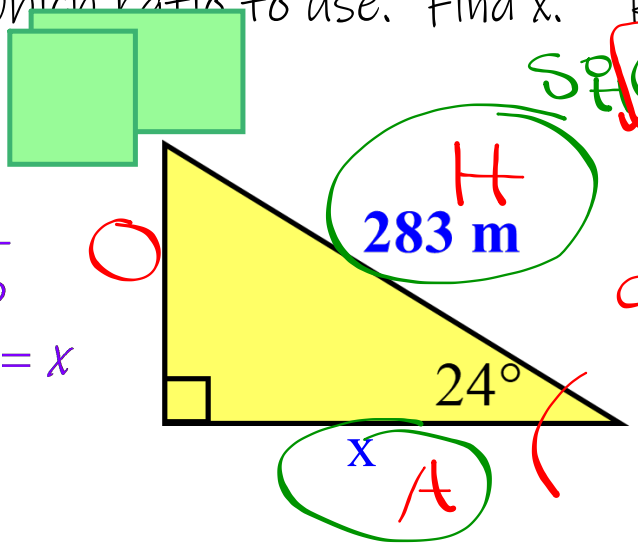
$x = \frac{80}{\sin(72)}$

$x = 84.1$



SOH CAH TOA

Ex: 3 Figure out which ratio to use. Find x. Round to the nearest tenth.

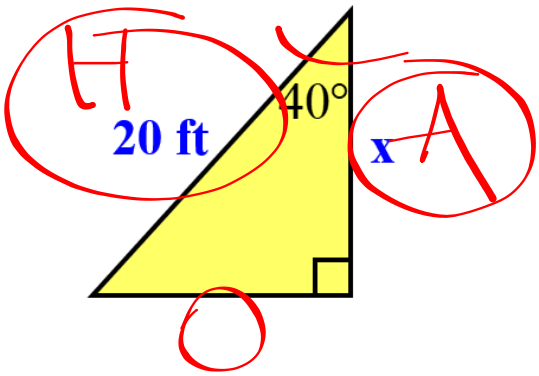


$\cos(24) = \frac{x}{283}$

$283 * \cos(24) = x$

$258.5 = x$

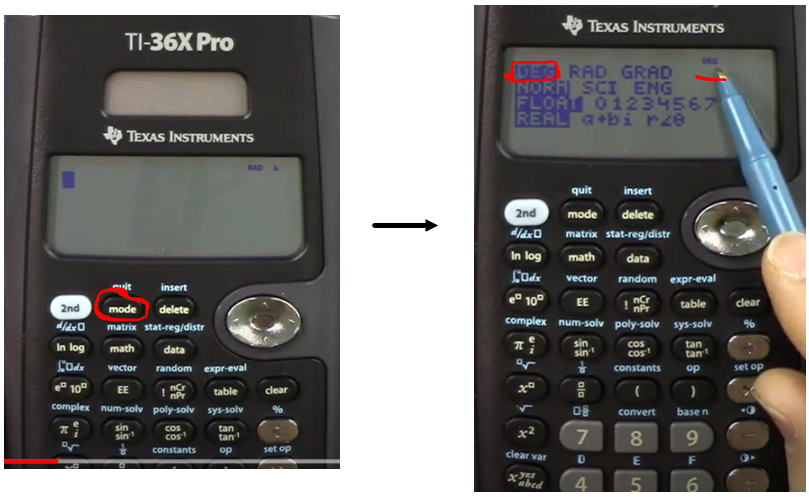
Ex: 4 Figure out which ratio to use. Find x. Round to the nearest tenth.



$\cos(40) = \frac{x}{20}$

$20 * \cos(40) = x$

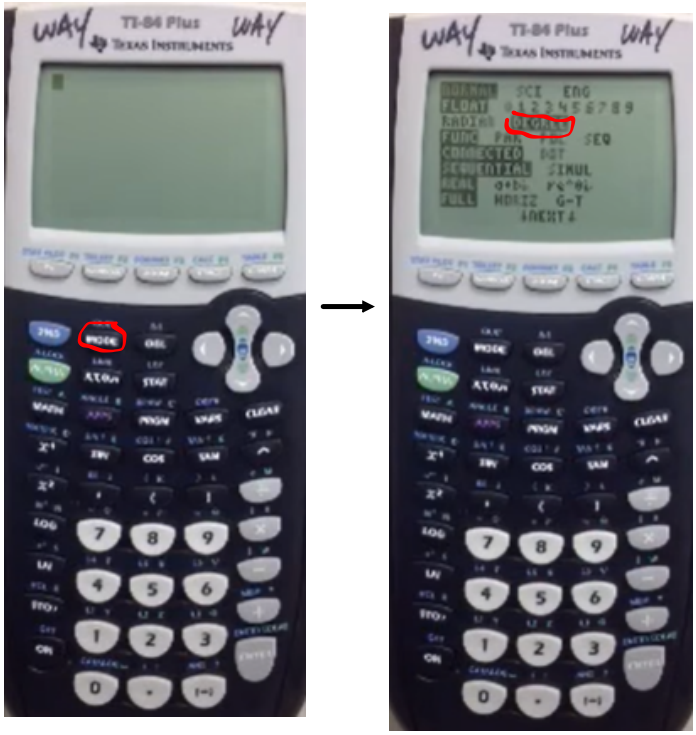
$15.3 = x$



$x = 25\sin(42)$

You type:

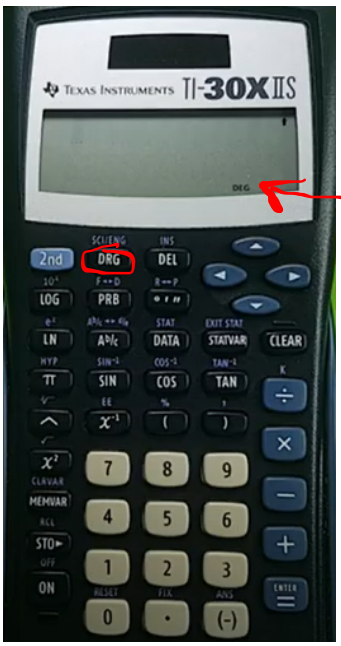
25*sin(42) = 16.73



$x = 25\sin(42)$

You type:

25*sin(42)

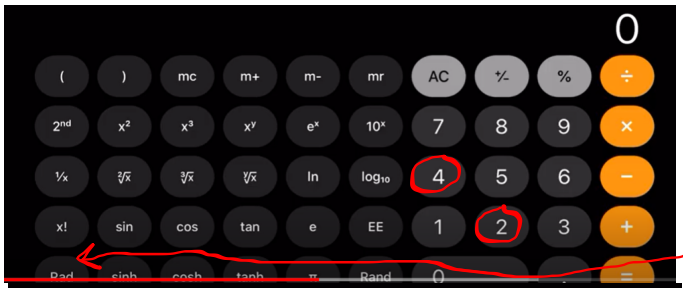


Look to see that Deg is on the bottom-right of the screen.

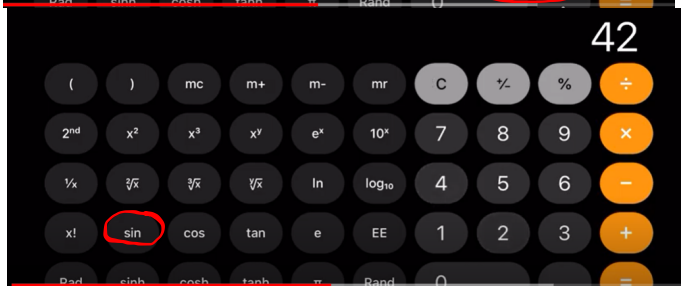
$x = 25\sin(42)$

You type:

25*sin(42)



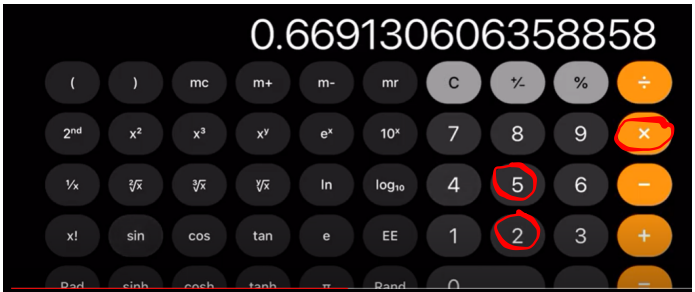
The bottom-left button says Rad

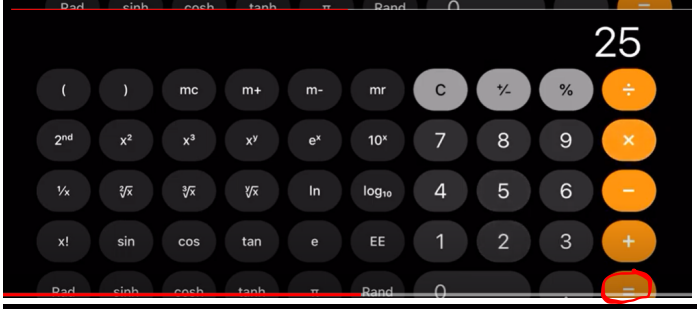


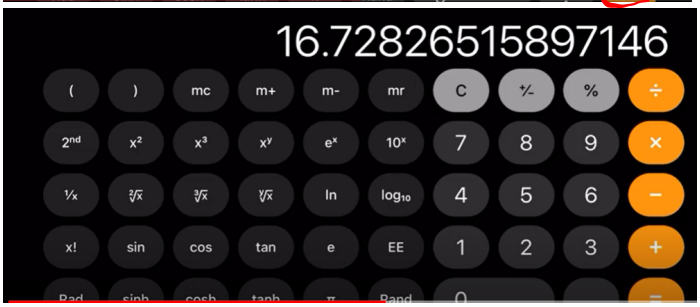
$x = 25\sin(42)$

You type:

42 sin * 25 =





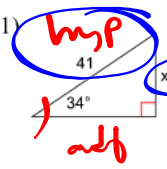


SOHCAHTOA

H. Geometry Name_____ ID: 1

Missing Side Lengths Practice Date_____ Period____

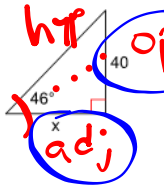
Find the missing side. Round to the nearest tenth.

1) 

$\sin(34°) = \frac{x}{41}$

$41 \cdot \sin(34) = x$

$x = 22.9$

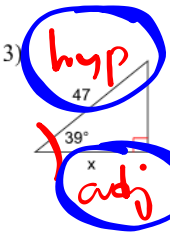
2) 

SOHCAHTOA

$\tan(46) = \frac{40}{x}$

$x = \frac{40}{\tan(46)}$

$x = 38.6$

3) 

SOHCAHTOA

$47 \cdot \cos(39) = \frac{x}{47}$

$x = 36.5$

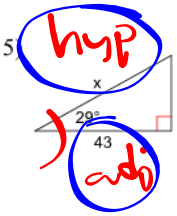
4) 

SOHCAHTOA

$\tan(66) = \frac{27}{x}$

$x = \frac{27}{\tan(66)}$

$x = 12.0$

5) 

SOHCAHTOA

$\cos(29) = \frac{43}{x}$

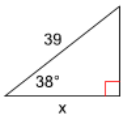
$x = \frac{43}{\cos(29)} = 49.2$

6) 

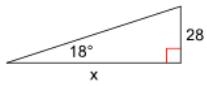
7)

8)

9)



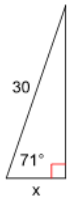
10)



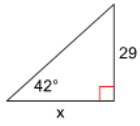
11)

12)

13)



14)

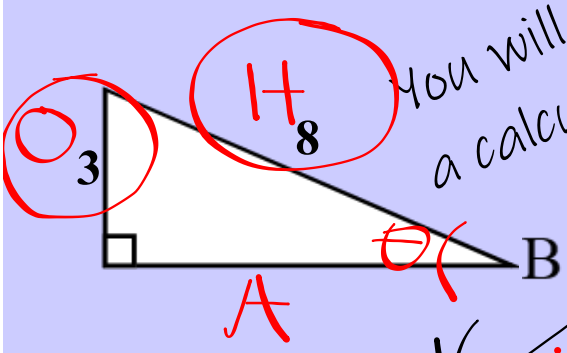


Finding Missing Angles

Finding Missing Angle

If you know the value of a specific trig ratio for an unknown angle, you can calculate the measure of the angle.

You will need a calculator!



$$\sin(B) = \frac{3}{8}$$

$$\sin^{-1}\left(\frac{3}{8}\right) = B$$

$$\angle B = 22.02°$$

$$\sin^{-1}(\sin(\theta)) = \sin^{-1}\left(\frac{3}{8}\right)$$

$$\theta = \sin^{-1}\left(\frac{3}{8}\right)$$

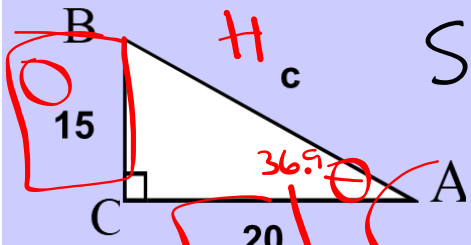
Regular

$$\text{trig}(\text{angle}) = \text{ratio}$$

Inverse

$$\text{trig}^{-1}(\text{ratio}) = \text{angle}$$

Problem-Solving Strategies



H c

S O/H C A/H T O/A

O 15

A 20

H c

$\theta = \tan^{-1}\left(\frac{15}{20}\right)$

$\theta = 36.9°$

$180 - 90 - 36.9 = 53.1°$

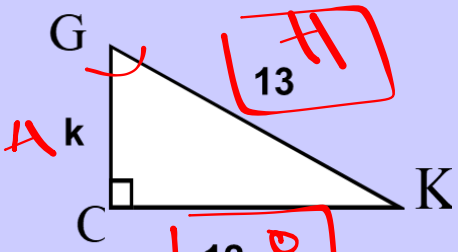
$a^2 + b^2 = c^2$

$15^2 + 20^2 = c^2$

$225 + 400 = c^2$

$\sqrt{625} = \sqrt{c^2}$

$c = 25$



H

13

A k

O 12

G: $\sin^{-1}\left(\frac{12}{13}\right) = 67.4$

$180 - 67.4 - 90 = 22.6$

$\angle K = 22.6°$

k = GC =

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

$12^2 + k^2 = 13^2$

$144 + k^2 = 169$

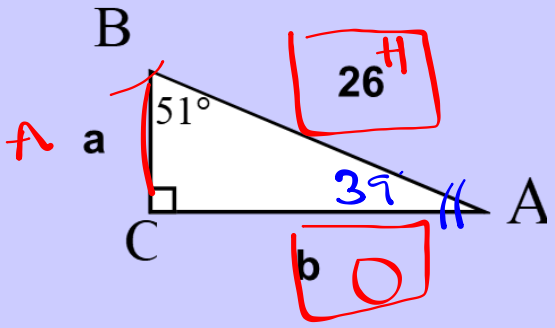
$-144 \quad -144$

$k^2 = 25$

$k = 5$

Problem-Solving Strategies

Find the other angle and the two other sides.



SOH CAH TOA

$\cos(51) = \frac{a}{26} \cdot 26$

$a = 26 \cdot \cos(51)$

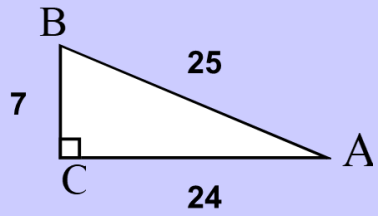
$a = 16.4$

$26 \cdot \sin(51) = \frac{b}{26} \cdot 26$

$b = 20.2$

Problem-Solving Strategies

Find the two non-right angles .

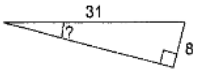


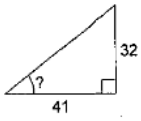
Analytic Geometry Name_____

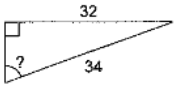
Finding Missing Angles & Sides

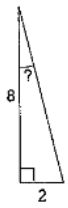
Date_____ Period____

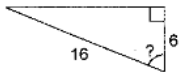
Find the measure of the indicated angle to the nearest degree.

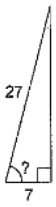
1) 

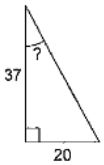
2) 

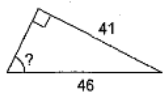
3) 

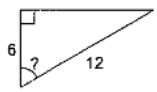
4) 

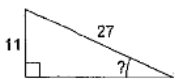
5) 

6) 

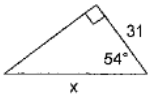
7) 

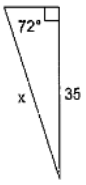
8) 

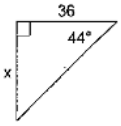
9) 

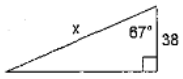
10) 

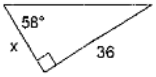
Find the missing side. Round to the nearest tenth.

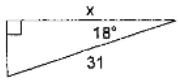
11) 

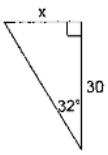
12) 

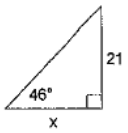
13) 

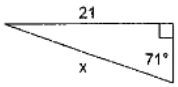
14) 

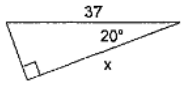
15) 

16) 

17) 

18) 

19) 

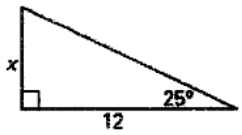
20) 

Geometry Similarity & Right Triangles Practice

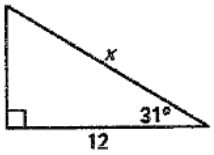
Name: _____ Date: _____

Using Trig Ratios to find Missing Sides or Angles

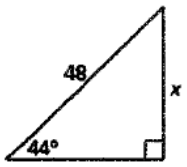
1.



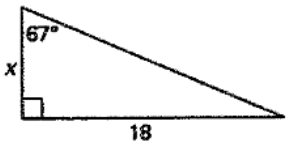
2.



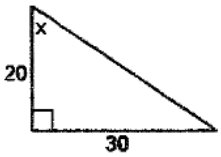
3.



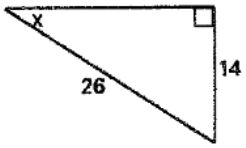
4.



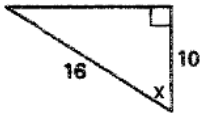
5.



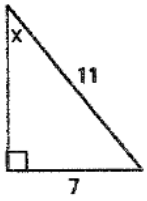
6.



7.

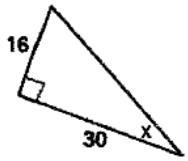


8.

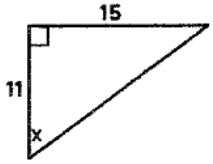


Geometry Similarity & Right Triangles Practice

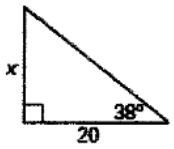
9.



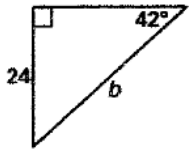
10.



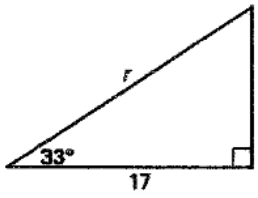
11.



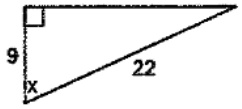
12.



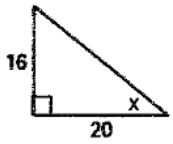
13.



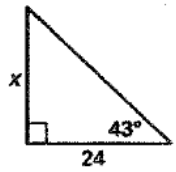
14.



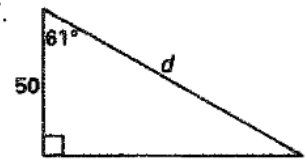
15.



16.



17.



18.