Find Your Seat!

Warm Up

*Grab a note card and answer the following questions.

1) What will **YOU** need to do in order to be successful this semester (maybe different from last semester)?

2) What will Mrs. Allender need to do to help you be successful this semester?

3) Tell us something fun you did over break...

My Expectations

*No phones out unless I say you can have them out.

-Please use a classroom calculator if you don't have one.

* Be respectful to yourself, others, and me.

-Raise your hand to be called on

* Food is ok unless it becomes an issue.

* If you have a question: "Ask three than me."

* Quiet Signal?

Signing Out

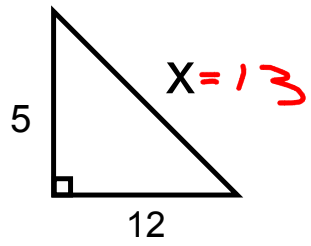
Warm Up

1) What is the Pythagorean Theorem?

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

$\sin x = \frac{OPP}{HYP}$

2) Find x.



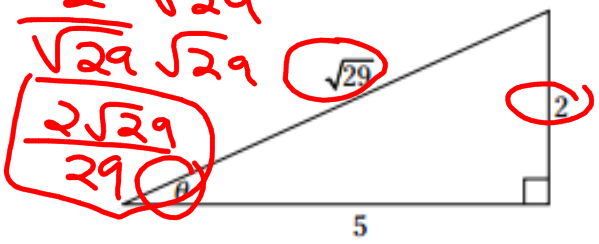
$x = 13$

$5^2+12^2=x^2$

$25+144=x^2$

$169=x^2$

3) In the following figure, $\sin\theta =$



$\frac{2}{\sqrt{29}} \quad \frac{\sqrt{29}}{\sqrt{29}}$

$\frac{2\sqrt{29}}{29}$

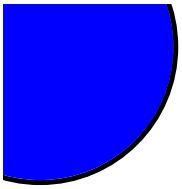
(A) $\frac{2}{5}$

(B) $\frac{5}{2}$

(C) $\frac{\sqrt{29}}{2}$

(D) $\frac{\sqrt{29}}{5}$

(E) $\frac{2\sqrt{29}}{29}$

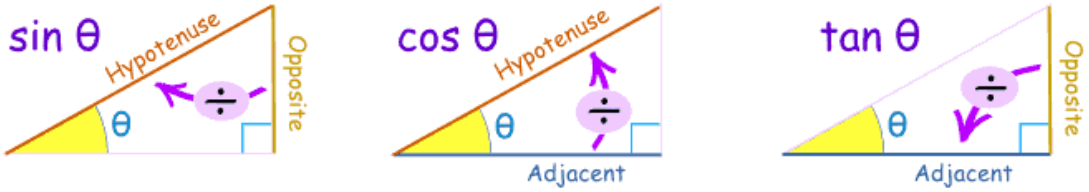


What do you remember about trig?

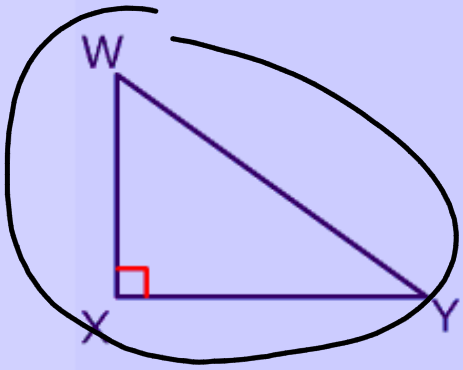
What is the acronym to remember your trig functions?

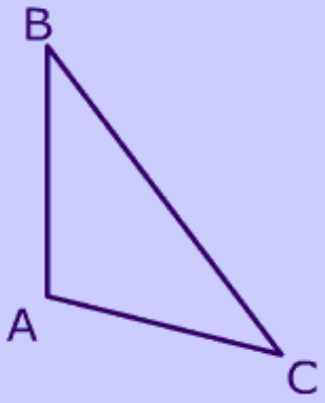
SOH CAH TOA

$S\frac{O}{H}$ $C\frac{A}{H}$ $T\frac{O}{A}$



To which triangle(s) below does SOHCAHTOA apply?

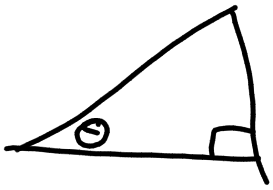




What is θ represent?

theta

Angle



Sinθ =

https://www.youtube.com/watch?v=t2uPYYLH4Zo

$$1+2 \times 34 +5 \times 6 \times (7 \times 8 +9) = ?$$

$1+2\times34+5\times6\times(5\ 6+9)$

$1+2\times34+5\times6\times65$

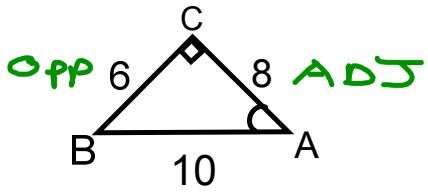
$1+68+\ 30\times65$

$1+68+1950$

2019

SOH CAH TOA

Find sin A, cos A, and tan A. Leave your answers as a fraction.



OPP ADJ HYP

$\sin A = \frac{6}{10}$ $\cos A = \frac{8}{10}$ $\tan A = \frac{6}{8}$

Find all six trig identities.

$\sin = \frac{OPP}{HYP}$ $\csc = \frac{HYP}{OPP}$

$\cos = \frac{ADJ}{HYP}$ $\sec = \frac{HYP}{ADJ}$

$\tan = \frac{OPP}{ADJ}$ $\cot = \frac{ADJ}{OPP}$

#Now you can do problem 2!

$\sin A = \frac{9}{15}$ $\cos A = \frac{12}{15}$ $\tan A = \frac{9}{12}$

SOH CAH TOA

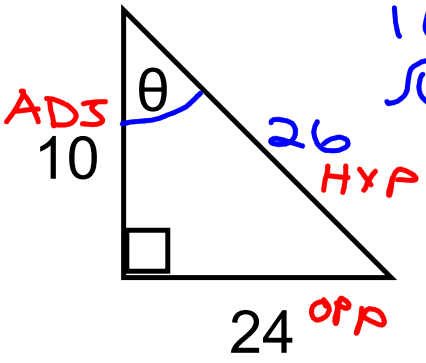
Evaluate the six trigonometric functions of the angle θ.

$10^2 + 24^2 = c^2$

$100 + 576 = c^2$

$\sqrt{676} = \sqrt{c^2}$

$c = 26$



$\sin\theta = \frac{24}{26}$ $\quad \csc\theta = \frac{26}{24}$

$\cos\theta = \frac{10}{26}$ $\quad \sec\theta = \frac{26}{10}$

$\tan\theta = \frac{24}{10}$ $\quad \cot\theta = \frac{10}{24}$

Let θ be an acute angle of a right triangle. Find the values of the other five trigonometric functions of θ.

$5^2 + b^2 = 6^2$

$25 + b^2 = 36$

$\sqrt{b^2} = \sqrt{11}$

$\sin\theta = \frac{5}{6}$ OPP / HYP

$\cos\theta = \frac{\sqrt{11}}{6}$

$\tan\theta = \frac{5}{\sqrt{11}} \cdot \frac{\sqrt{11}}{\sqrt{11}} = \frac{5\sqrt{11}}{11}$

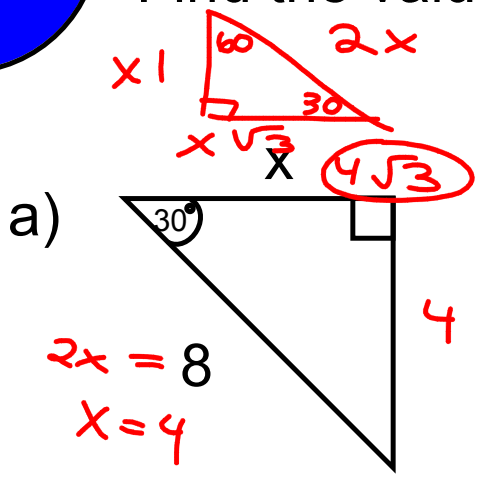
$\csc\theta = \frac{6}{5}$

$\sec\theta = \frac{6}{\sqrt{11}} \cdot \frac{\sqrt{11}}{\sqrt{11}} = \frac{6\sqrt{11}}{11}$

$\cot\theta = \frac{\sqrt{11}}{5}$

Find the value of x and y.

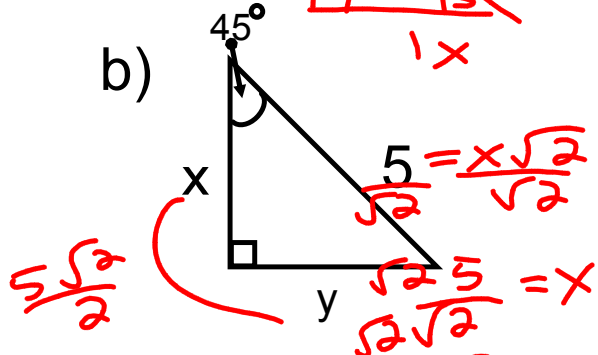
a)



$2x = 8$

$x = 4$

b)



$\frac{5}{\sqrt{2}} = \frac{x\sqrt{2}}{\sqrt{2}}$

$\frac{5\sqrt{2}}{2}$

$\frac{\sqrt{2}\,5}{\sqrt{2}\sqrt{2}} = x$

$\frac{5\sqrt{2}}{2} = x$

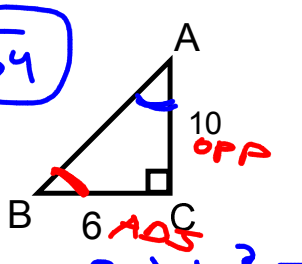
*Now you can do problems 3 and 4.

Find the following using the diagram.

1) AB= $\sqrt{136}$ $\sqrt{4}\sqrt{34}$ $2\sqrt{34}$

2) m<A= $\tan A^{-1}\left(\frac{6}{10}\right)$ 30.96°

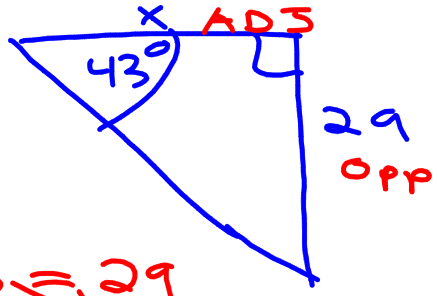
3) m<B= $\tan B^{-1}\left(\frac{10}{6}\right)$ 59.04°



$6^2 + 10^2 = c^2$

then look at #10-12

(3)



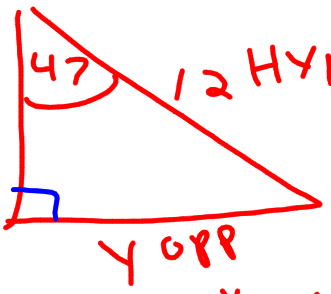
$\tan \frac{O}{A}$

$\tan 43 = \frac{29}{x}$

$x \cdot \tan 43 = 29$

$\frac{x \cdot \tan 43}{\tan 43} = \frac{29}{\tan 43}$

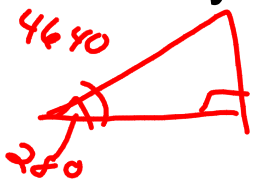
(4)



$12 \cdot \sin 47 = \frac{y}{12} \cdot 12$

Matching Game

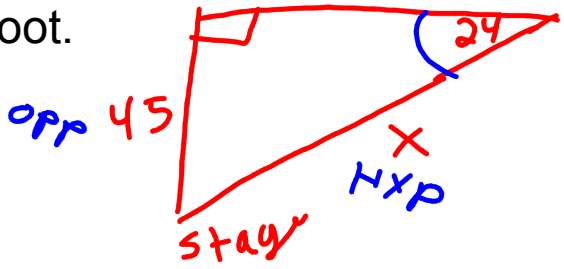
5) A chair lift on a ski slope has an ~~angle of elevation~~ of 28 degrees and covers a total distance of 4640 feet. To the nearest foot, what is the vertical height h covered by the chair lift?



$4640 \sin 28 = \frac{h}{4640} \cdot 4640$

$2178 \text{ ft} = h$

14) You attend a music concert with some friends and sit halfway up the bleachers in the arena. The ~~angle of depression~~ from your horizontal line of sight to the stage is 24 degrees. If your seat is 45 feet above the stage level, what is your actual distance d from the stage? Round to the nearest foot.



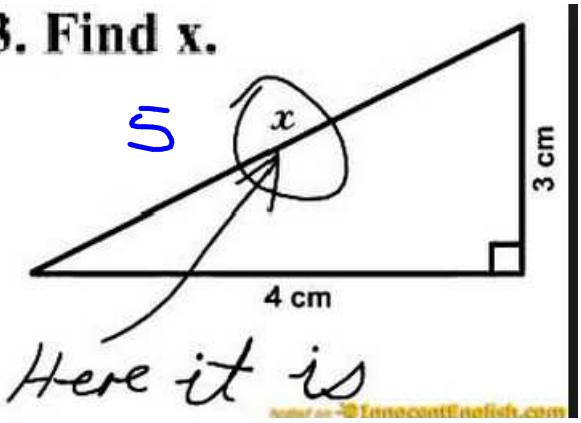
$\sin 24 = \frac{45}{x}$

$x = \frac{45}{\sin 24}$

$x = 111$ ft

13) You lean a 20 foot ladder against a wall. The base of the ladder is 4 feet from the wall. What angle θ doe the ladder make with the ground?

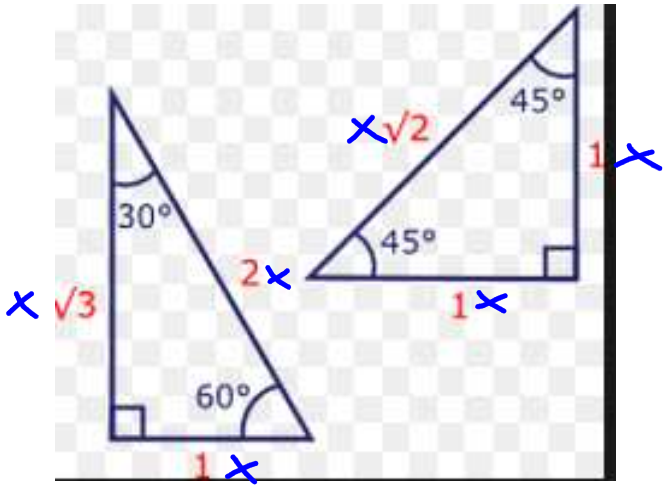
3. Find x.



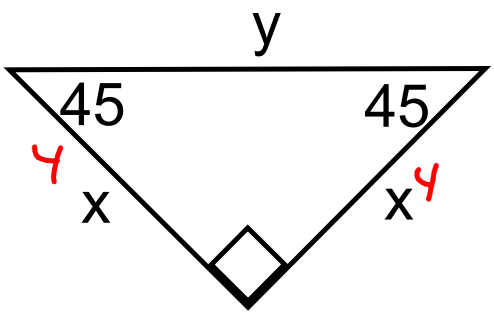
Here it is

Any questions on numbers 6-9?

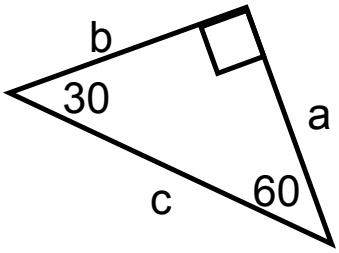
Special Right Triangles



Complete the charts



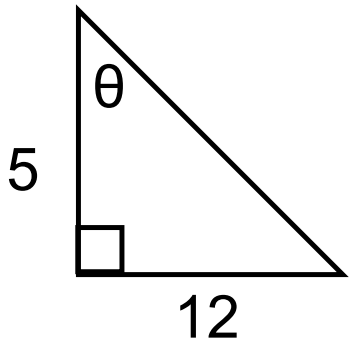
x	2	1	4	3	7
y	$2\sqrt{2}$	$\sqrt{2}$	$4\sqrt{2}$	$3\sqrt{2}$	$7\sqrt{2}$

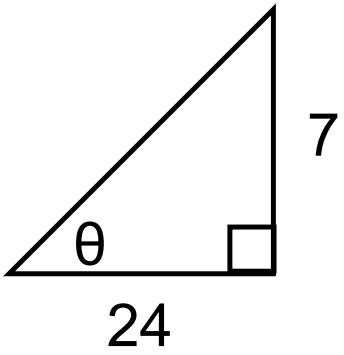


a					
b					
c					

#15-17 on the purple worksheet

Evaluate the 6 trig functions of angle θ.



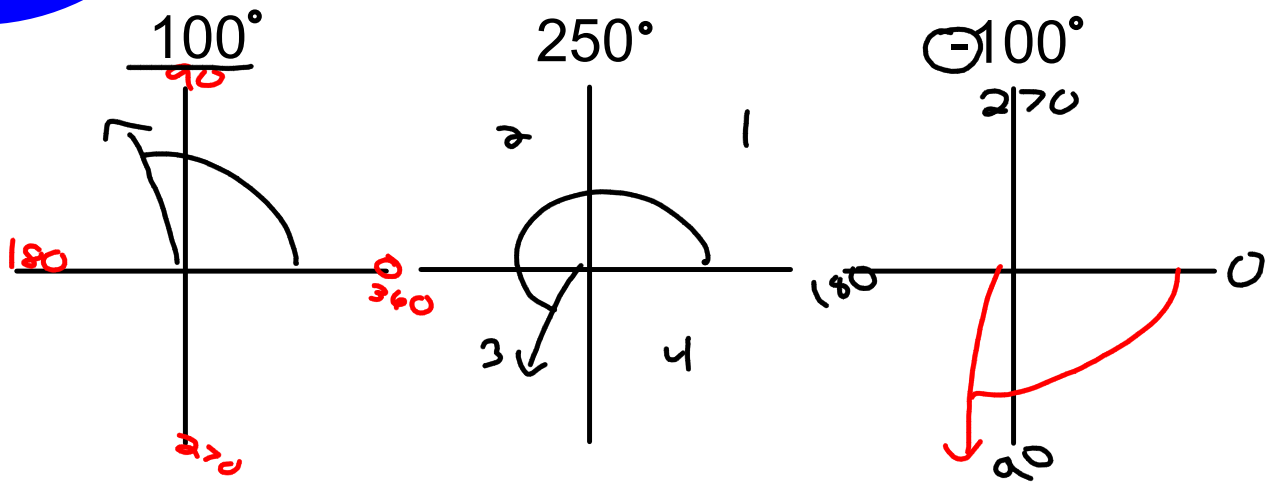


These are special triangles called Pythagorean Triples.

Grid Games

Quiz Quiz Trade

Draw an angle with the given measure in standard position.



Homework

*Finish the purple WS.

*Page 856 #4, 6, 9, 13, 17-20, 32, 33, 36

* Page 863 #6-9

The right angle from which to approach any problem is the "Try Angle."