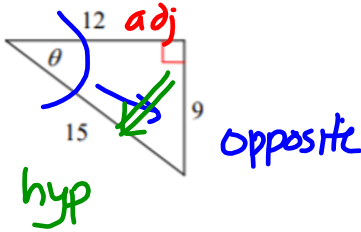


Lesson 9.4- SWBAT find the missing parts of triangles.

Kick off-

1) Find $\sin \theta$, $\cos \theta$, $\tan \theta$ of the triangle:



2) Complete the square: $x^2 + 4x - 32 = 0$

$$x^2 + 4x = 32$$

$$x^2 + 4x + 4 = 32 + 4$$

$$(x + 2)^2 = 36$$

$$\sqrt{(x + 2)^2} = \sqrt{36}$$

inverse ←

3) Simplify: $\sqrt{50} - 6\sqrt{2} + \sqrt{6}$

$$\sqrt{25 \cdot 2} - 6\sqrt{2} + \sqrt{6}$$

$$5\sqrt{2} - 6\sqrt{2} + \sqrt{6}$$

$$-1\sqrt{2} + \sqrt{6}$$

4) Find $f^{-1}(x)$ of $f(x) = 3x - 7$

$$y = 3x - 7$$

$$x = 3y - 7$$

$$x + 7 = 3y$$

$$\frac{x + 7}{3} = y = f^{-1}(x)$$

SOH CAH TOA

Trigonometric Ratios

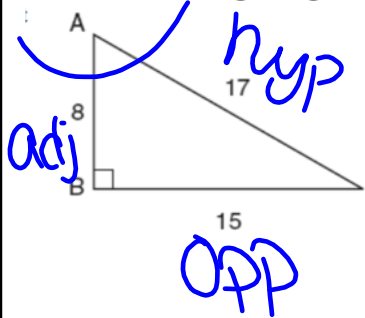
$$\sin \theta = \frac{O}{H}$$

$$\cos \theta = \frac{A}{H}$$

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

Examples:

1) Find $\sin A$, $\cos A$, and $\tan A$ of the following triangle:

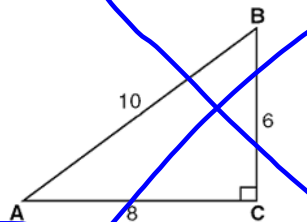


$$\sin A = \frac{8}{17}$$

$$\cos A = \frac{15}{17}$$

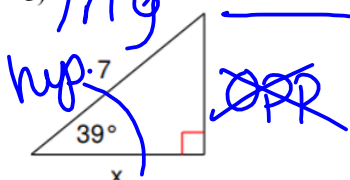
$$\tan A = \frac{8}{15}$$

2) Find $\sin B$, $\cos B$, and $\tan B$ of the following triangle:



Directions: Solve for the missing side. Round to the nearest tenth

3) Trig

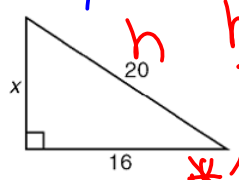


hyp. 7
39°
x

Adj
 $\cos 39 = \frac{x}{7}$

$x = 7 \cos 39$
 $x = 5.44 \rightarrow 5.4$

4) Pyth.

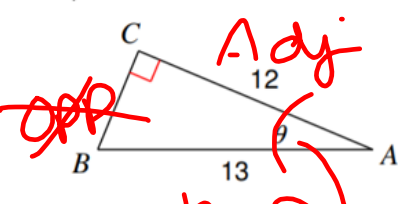


16
x
20
hyp.

$a^2 + b^2 = c^2$
 $16^2 + x^2 = 20^2$
 $256 + x^2 = 400$
 $-256 \quad -256$
 $\sqrt{x^2} = \sqrt{144}$
 $x = 12$

Directions: Solve for the missing angle. Round to the nearest degree.

5)

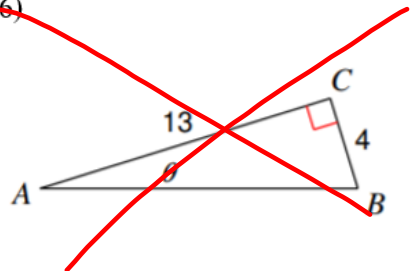


12
13
theta
Adj
hyp

$\cos \theta = \frac{12}{13}$

$\theta = \cos^{-1}(12/13)$
 $\theta = 22.6 = 23^\circ$

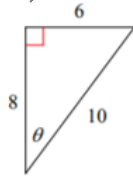
6)



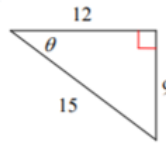
Practice:

Directions: Find $\sin \theta$, $\cos \theta$, and $\tan \theta$ for each of the following triangles. Write the ratio in simplest form.

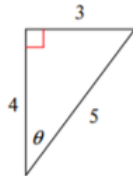
1)



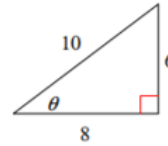
2)



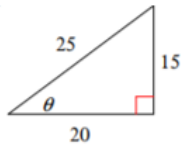
3)



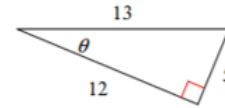
4)



5)

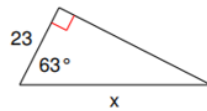


6)

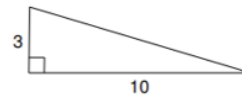


Directions: Find the missing side in each of the following triangles. Round to the nearest tenth.

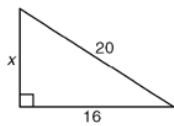
7)



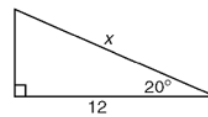
8)



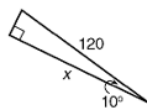
9)



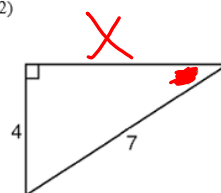
10)



11)

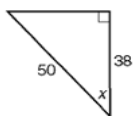


12)

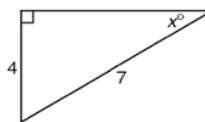


Directions: Solve for the missing angle. Round to the nearest degree.

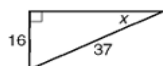
13)



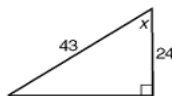
14)



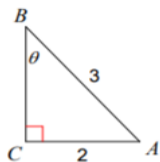
15)



16)



17)



18)

