

Name: _____

Class: _____

Topic: _____

Date: _____

Main Ideas/Questions

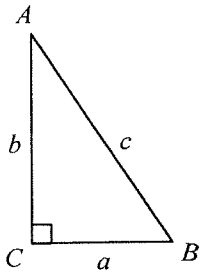
Notes

What is TRIGONOMETRY?

The study of triangle measurement

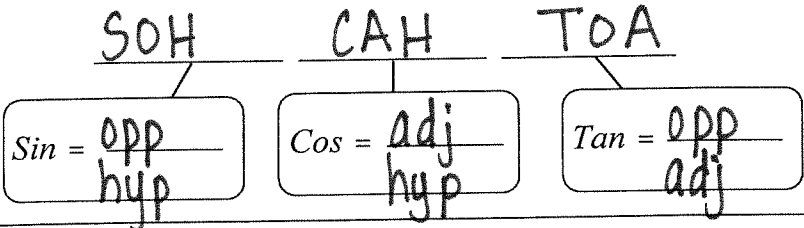
TRIGONOMETRIC RATIOS

Each acute angle of a right triangle has the following trigonometric ratios:



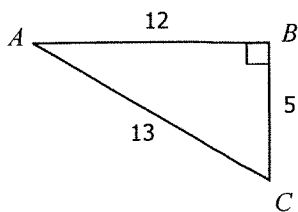
SINE	The ratio of the leg opposite the angle to the hypotenuse .	<ul style="list-style-type: none"> • $\sin A = \frac{a/c}{b/c}$ • $\sin B = \frac{b/c}{a/c}$
COSINE	The ratio of the leg adjacent to the angle to the hypotenuse .	<ul style="list-style-type: none"> • $\cos A = \frac{b/c}{a/c}$ • $\cos B = \frac{a/c}{b/c}$
TANGENT	The ratio of the leg opposite the angle to the leg adjacent to the angle.	<ul style="list-style-type: none"> • $\tan A = \frac{a/b}{b/a}$ • $\tan B = \frac{b/a}{a/b}$

* REMEMBER!! *



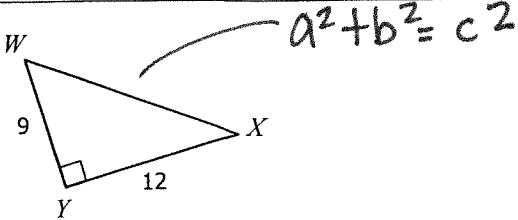
Practice! Give each trigonometric ratio as a fraction in simplest form.

1.



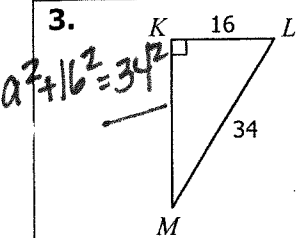
- $\sin A = \underline{\hspace{2cm}}$
- $\sin C = \underline{\hspace{2cm}}$
- $\cos A = \underline{\hspace{2cm}}$
- $\cos C = \underline{\hspace{2cm}}$
- $\tan A = \underline{\hspace{2cm}}$
- $\tan C = \underline{\hspace{2cm}}$

2.



- $\sin W = \underline{\hspace{2cm}}$
- $\sin X = \underline{\hspace{2cm}}$
- $\cos W = \underline{\hspace{2cm}}$
- $\cos X = \underline{\hspace{2cm}}$
- $\tan W = \underline{\hspace{2cm}}$
- $\tan X = \underline{\hspace{2cm}}$

3.

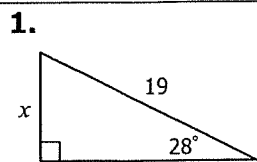


- $\sin L = \underline{\hspace{2cm}}$
- $\sin M = \underline{\hspace{2cm}}$
- $\cos L = \underline{\hspace{2cm}}$
- $\cos M = \underline{\hspace{2cm}}$
- $\tan L = \underline{\hspace{2cm}}$
- $\tan M = \underline{\hspace{2cm}}$

FINDING MISSING SIDES WITH TRIG RATIOS

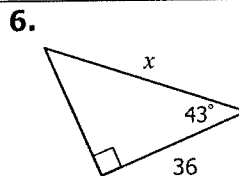
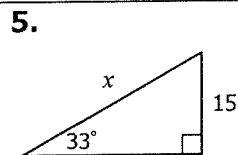
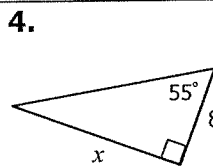
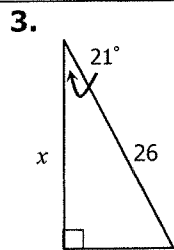
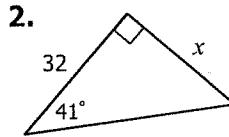
NOTE!
Make sure your calculator is in **DEGREE MODE!**

Directions: Solve for x . Round to the nearest tenth.



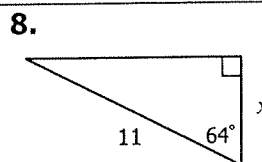
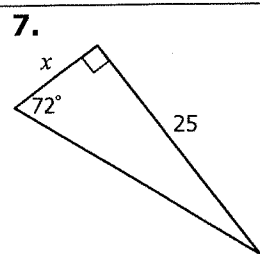
$$\sin 28 = \frac{x}{19}$$

$$x = 18(\sin 28)$$

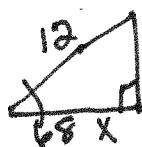


$$\cos 43 = \frac{36}{x}$$

$$\frac{x(\cos 43)}{\cos 43} = \frac{36}{\cos 43}$$



9. Jake leaned a 12-foot ladder against his house. If the angle formed by the ladder and the ground is 68° , how far from the base of the house did he place the ladder?



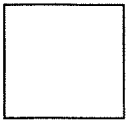
$$\cos 68 = \frac{x}{12}$$

$$12 \cdot \cos 68 = x$$

10. A ramp is used to load suitcases on an airplane. If the cargo door is 7 feet from the ground and the angle formed by the end of the ramp and the ground is 25° , how long is the ramp?

Name: _____

Unit 8: Right Triangles & Trigonometry



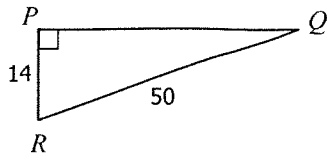
Date: _____ Bell: _____

Homework 3: Trigonometry:
Ratios & Finding Missing Sides

**** This is a 2-page document! ****

Directions: Give each trig ratio as a fraction in simplest form.

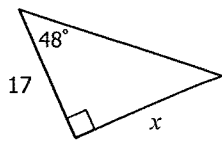
1.



- $\sin Q = \underline{\hspace{2cm}}$
- $\sin R = \underline{\hspace{2cm}}$
- $\cos Q = \underline{\hspace{2cm}}$
- $\cos R = \underline{\hspace{2cm}}$
- $\tan Q = \underline{\hspace{2cm}}$
- $\tan R = \underline{\hspace{2cm}}$

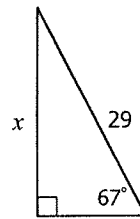
Directions: Solve for x . Round to the nearest tenth.

2.

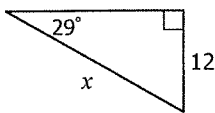


$$\begin{aligned} \tan 48 &= \frac{x}{17} \\ 17(\tan 48) &= x \\ 18.9 &= x \end{aligned}$$

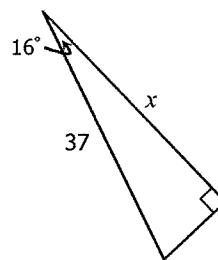
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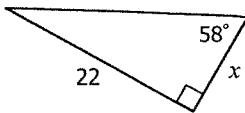
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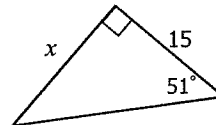
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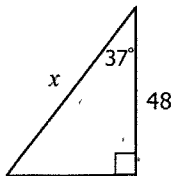
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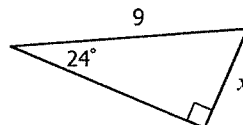
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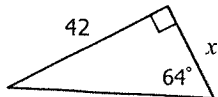
8.



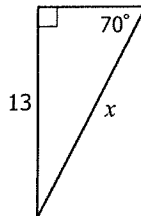
9.



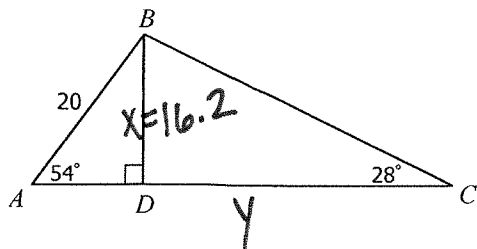
10.



11.



12. Find DC .



$$\sin 54 = \frac{x}{20}$$

$$x = 20(\sin 54)$$

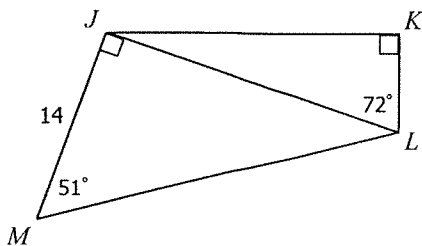
$$x = 16.2$$

$$\tan 28 = \frac{16.2}{y}$$

$$y = \frac{16.2}{\tan 28}$$

$$y = 30.5$$

13. Find KL .



14. A wire is attached from the top of a 30 foot telephone pole to a stake in the ground. If the angle formed by the wire and the pole is 48° , what is the length of the wire?

15. An airplane climbs at an angle of 12° with the ground. Find the horizontal distance it has traveled once it has reached an altitude of 500 feet.