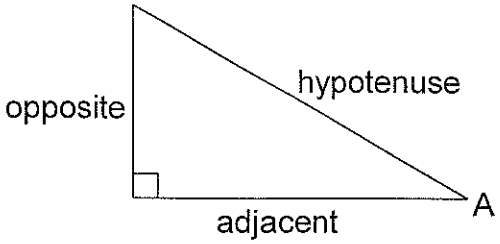
Name _____
ACT Review ~ Right Angle Trigonometry

If you know the length of **ONE** of the sides of a **RIGHT TRIANGLE** and the measure of **ONE** of the angles, you can use the **TRIGONOMETRY** to solve for the length of the unknown side.



SOH CAH TOH

Sin A = opposite / hypotenuse

Cos A = adjacent / hypotenuse

Tan A = opposite / adjacent

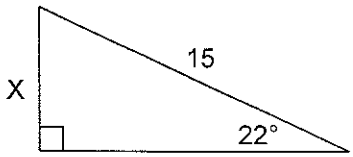
** The opposite and adjacent sides depend on where the angle is

For **EVERY** problem involving trigonometry, you need to go thru the following steps:

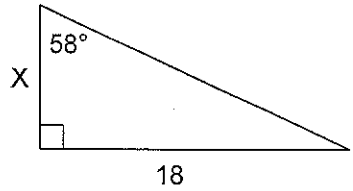
1) Label the sides of the triangle relative to the angle that you know (opposite, adjacent, hypotenuse)
2) Based on the parts of the triangle that you are dealing with, what is the trig. function (sin A, cos A, tan A)
3) Set up the trig. ratio and substitute in the information that you know
4) Cross multiply and get "x" by itself on one side of the equation
5) THEN use your calculator to solve for "x"

Examples

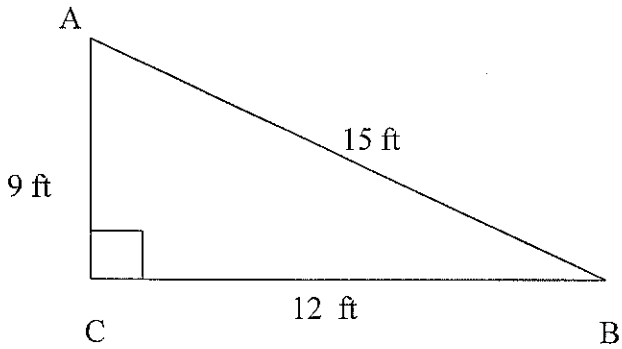
a)



b)



Practice: Give the trig ratio for the given triangle:

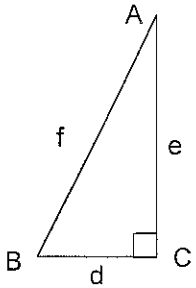


sin A = _____ sin B = _____

cos A = _____ cos B = _____

tan A = _____ tan B = _____

Give the trig ratio for the given triangle:



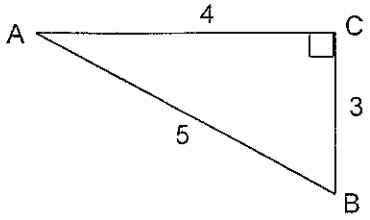
sin A = _____ sin B = _____

cos A = _____ cos B = _____

tan A = _____ tan B = _____

Trigonometry

Give the trig ratio for the given triangle:



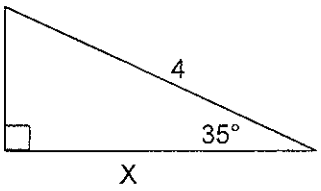
$\sin A =$ _____ $\sin B =$ _____

$\cos A =$ _____ $\cos B =$ _____

$\tan A =$ _____ $\tan B =$ _____

Use trigonometry to solve for the missing side. **YOU MUST SHOW ALL WORK**
Round to one decimal place.

1)



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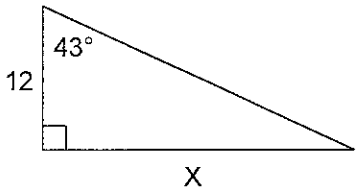

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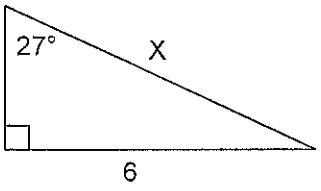

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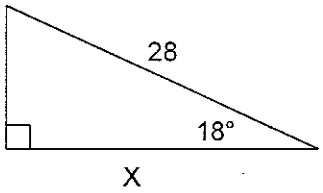

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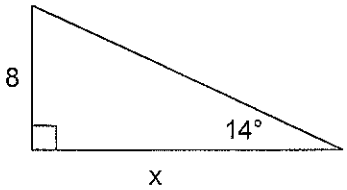

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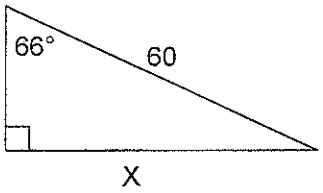

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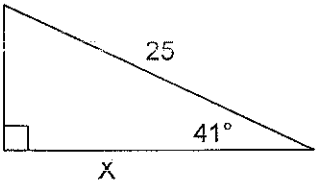

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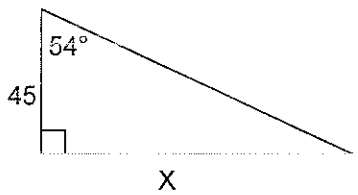


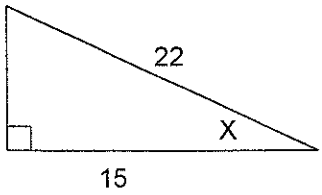
If you know the length of **TWO** of the sides of a **RIGHT TRIANGLE** and you are trying to determine the measure of the angles, you need to use the **INVERSE TRIG. FUNCTION.** (This is "undoing" taking the trig function.)

For **EVERY** problem where you are looking for the angle, you need to go thru the following steps:

1) Label the sides of the triangle relative to the angle that you know (opposite, adjacent, hypotenuse)
2) Based on the parts of the triangle that you are dealing with, what is the trig. function (sin A, cos A, tan A)
3) Set up the INVERSE trig. ratio and substitute in the information that you know
4) Use the light blue "2^{nd}" button before the trig. function to get the inverse trig. function and solve for the angle

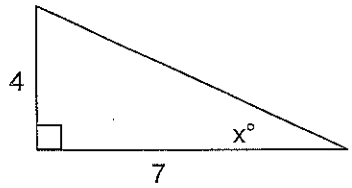
Example

a)



Use trigonometry to solve for the angle. **YOU MUST SHOW ALL WORK for the steps given above**. Round to one decimal place.

9)



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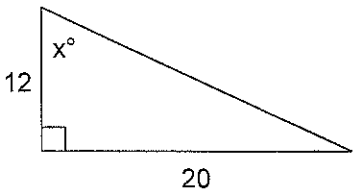

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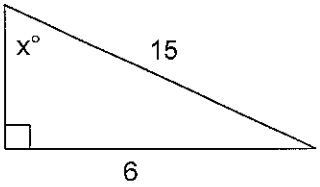

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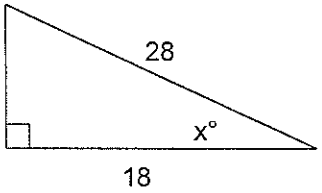

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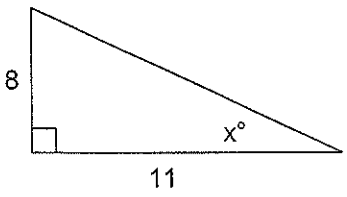

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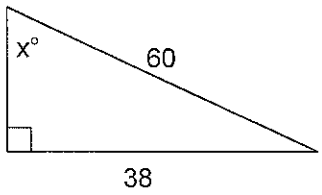

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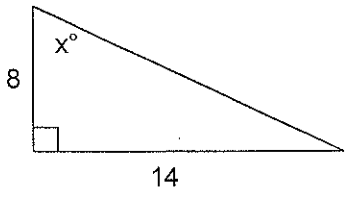

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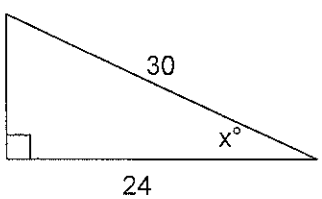
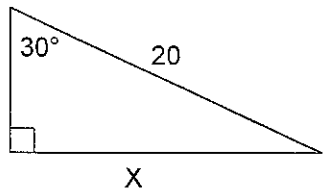


Trigonometry

Use trigonometry to solve for x (Show all work):

17)



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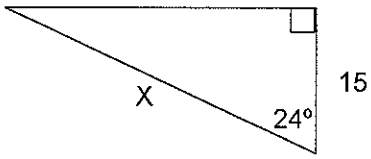

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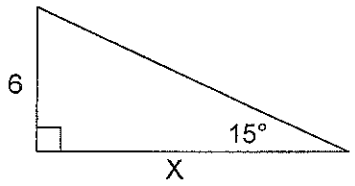

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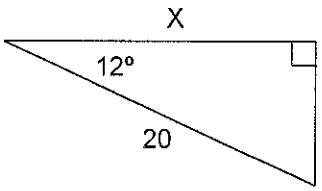

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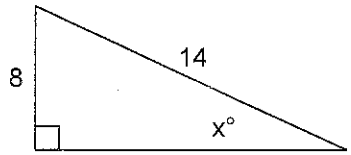

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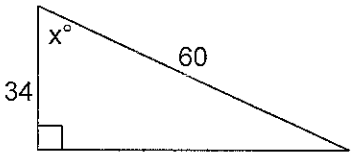

23) One day while lying on the grass in front of the school, you begin to wonder how tall the flag pole is. You estimate that the angle of inclination as you look at the top of the flagpole is 25°. If you are 30' from the flagpole, how tall is the flagpole. Draw a picture and show your work.

24) A ramp has a slope of 5° and a length of 22 feet. Use one of the trignometric ratios to find the length of x. Write the trignometric equation and find the value of x to the nearest inch. Show your work.