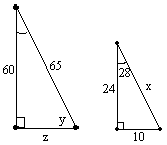
**RIGHT**

**TRIANGLE TRIGONOMETRY**

**PART 1** Similarity Review. Trigonometry is based on triangle similarity. The two triangles shown are similar, use what you have learned about similarity to answer the following questions.

**1-1.** Solve for X:



**1-2.** Solve for Z:

**1-3.** What is y?

**1-4.** What is the scale factor?

**PART 2** The two triangles shown are similar. They are both 35-55-90 triangles. Use a ruler to

measure and record the lengths of each side, then complete the tables.

|  |  |
| --- | --- |
| **Small Triangle** | |
|  |  |
|  |  |
|  |  |

|  |  |
| --- | --- |
| **Large Triangle** | |
|  |  |
|  |  |
|  |  |

2.15cm

3.75cm

350

550

550

350

3.05cm

**2-1.** How are the two triangles alike?

**2-2.** How are they different?

**PART 3** Next, you are going to create your own triangle that is similar to the ones used in part 2.

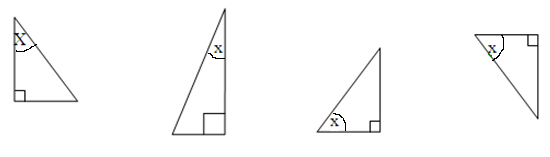
|  |  |
| --- | --- |
| **Third Triangle** | |
|  |  |
|  |  |
|  |  |

**3-1.** Did the pattern the appeared in the first two

triangles continue in this one?

**3-2.** What do all these triangles have in common?

**PART 4** Labeling the sides. For each of the following triangles, label the three sides O, A, and H



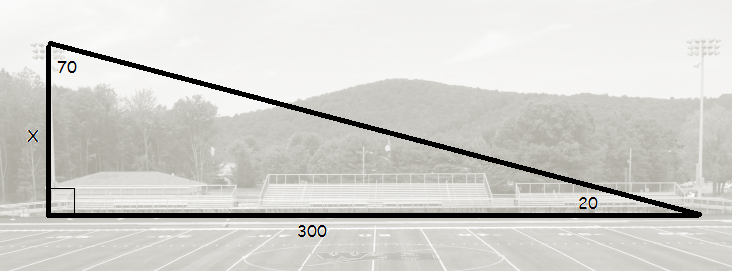
**4-1.**

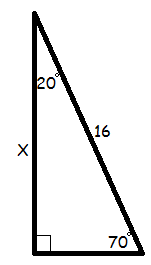
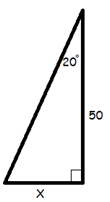
**PART 5** Solving problems using *similar triangles*.

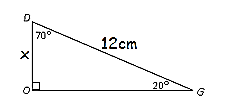
**5-1**.

**Each of the following triangles is a 20-70-90 triangle.**

**Use the ratios you created in 5-1 to find the missing side:**

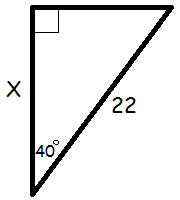
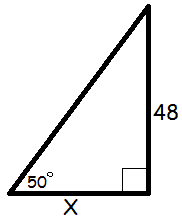
**1. **

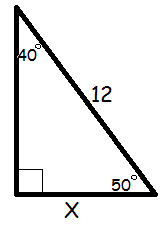
**2.  3. 4.**

****

**5-2**

**40-50-90 triangle: Draw a 40-50-90 triangle, measure the sides, find the ratios and use your triangle to solve the rest of the problems on this page.**

**5. 6. 7.**

****

Make sure to pick the correct angle

TRIGONOMETRIC RATIOS:

****

****

****

****

****

****

****

****

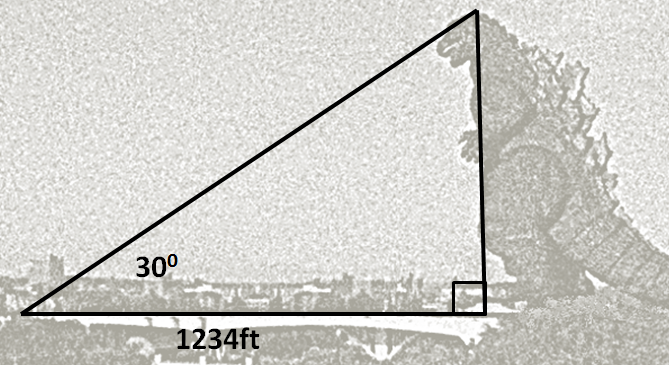
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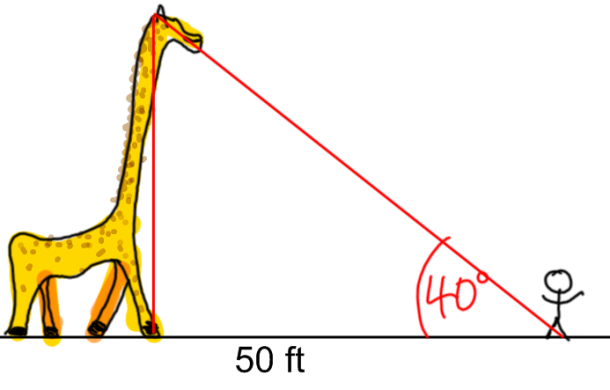
**PART 6** Use the triangles you created on the previous pages to find the missing side in each of the

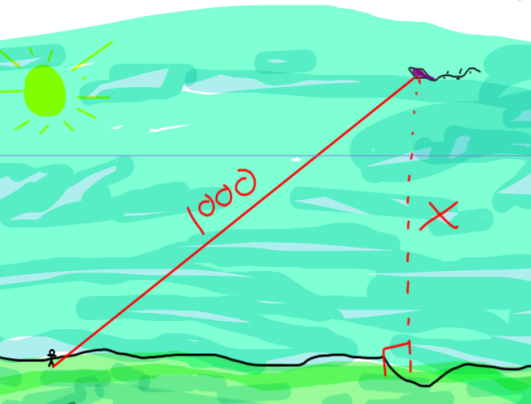
following .

#1



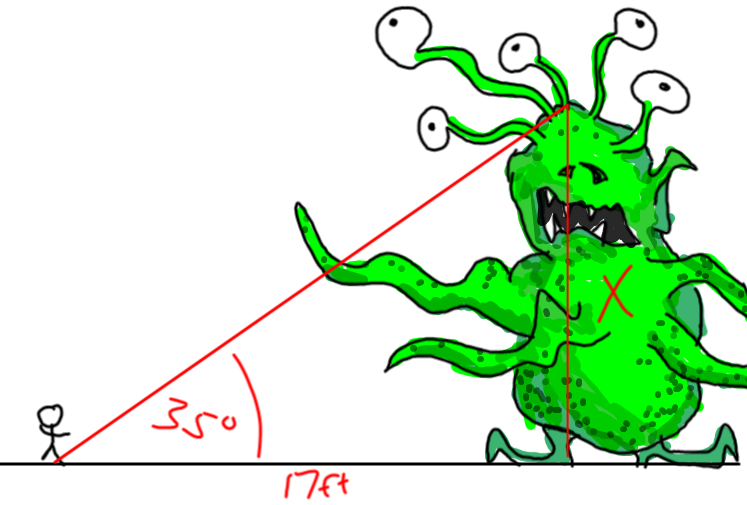
#2



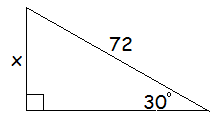
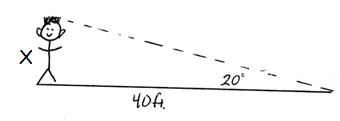


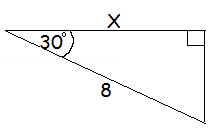
#3

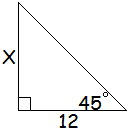
45

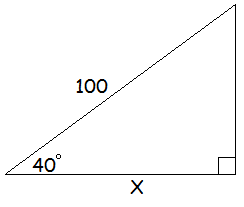
#4

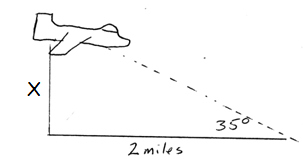
**#5. #6.**

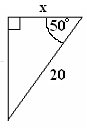
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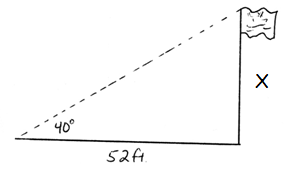
**#7. #8.**

****

****

**#9 #10.**

****

****

**#11. #12.**

**PART 7** SOH-CAH-TOA

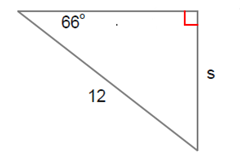
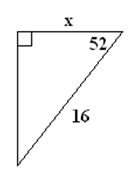
**7-1.** What is the definition of **sine**?

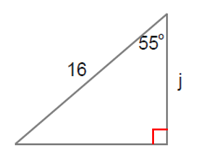
**7-3.** What is the definition of **cosine**?

**7-2.** What is the definition of **tangent**?

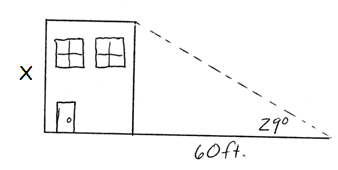
**7-4.** What does **SOHCAHTOA** stand for?

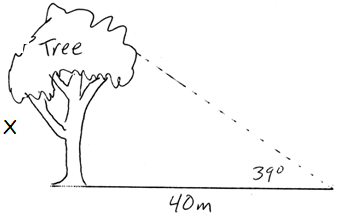
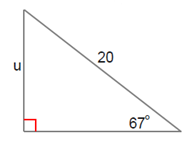
**PART 8** Solving for missing lengths using trigonometry.

**8-1. 8-2.**

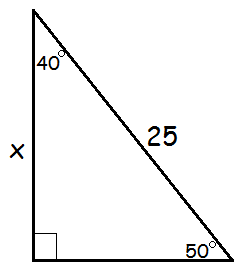
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**8-3. 8-4.**

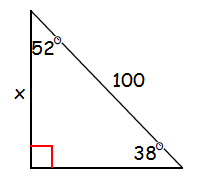
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**8-5. 8-6. **

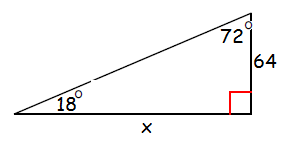
**PART 9** What to do if you are given BOTH angles in a triangle.

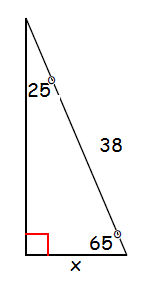


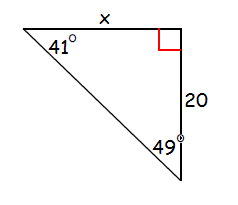
**9-1.**

****

**9-2. 9-3.**

****

****

****

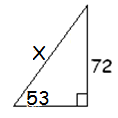
**9-4. 9-5.**

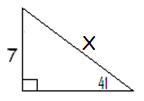
**PART 10** Algebra Review. Solve for x.

**10-1.  10-2.  10-3. **

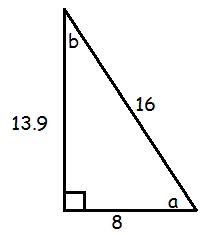
**10-4.  10-5.  10-6. **

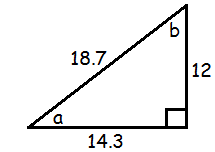
**PART 11** How to solve a trigonometry problem with x in the denominator.

**11-1. 11-2.**



**PART 12** Finding the angle using similar triangles. Find the measures of the missing angles.



**12-1. 12-2.**

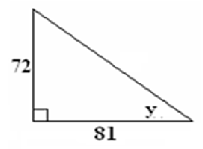
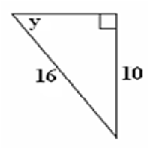
**PART 13** Finding the angle using inverse trigonometry..

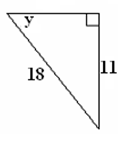
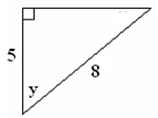
**13-1.** What does **inverse** mean?

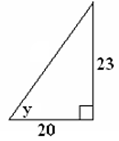
**13-2.** What are the symbols for…

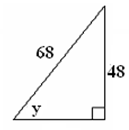
**a)** inverse sine? **b)** inverse cosine **c)** inverse tangent?

**13-3.** By typing  into your calculator, what are you asking the calculator to find?

**13-4. 13-5.**

**13-6. 13-7.**

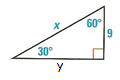
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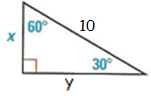
**13-8.  13-9.**

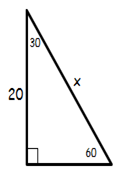
**PART 14** Special triangles.

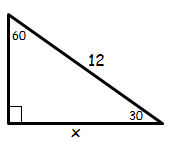
****

**14-1. 14-2.**

****

**14-3. 14-4**

**14-5. 14-6**.



A) 12 A) 

B) 6 B) 

C)  C) 

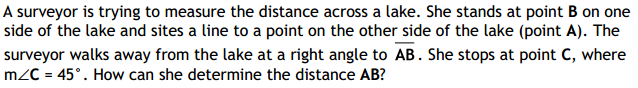
D)  D) 

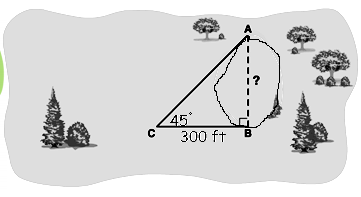
E) 24 E) 

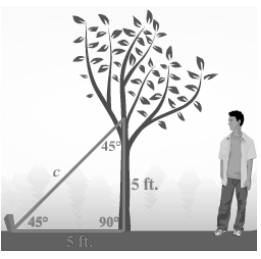
h

Geometry Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

WS Trig review Period \_\_\_\_\_

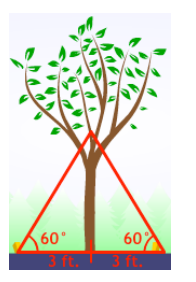
1. 



2. Carlos wants to attach a stabilizing wire 5 feet high on the trunk

of a new tree in his yard. He stakes the wire out 5 feet from the base

of the tree. How long is the wire?

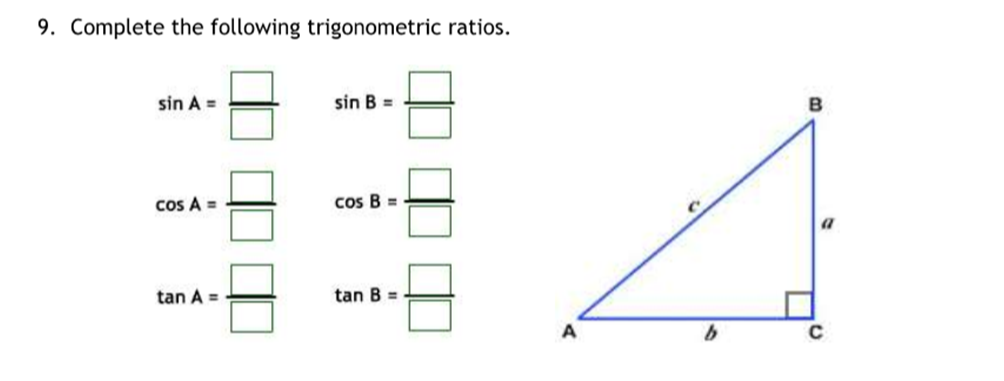
3. Carlos has to stabilize another tree but does not have room to move out 5 feet from

the base. He decides to use two wires, one on each side of the tree, each at an angle of

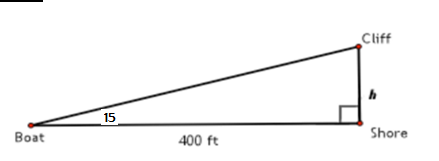
60º with the ground, staked 3 feet out from the base. How high up the tree should he

attach the wires.

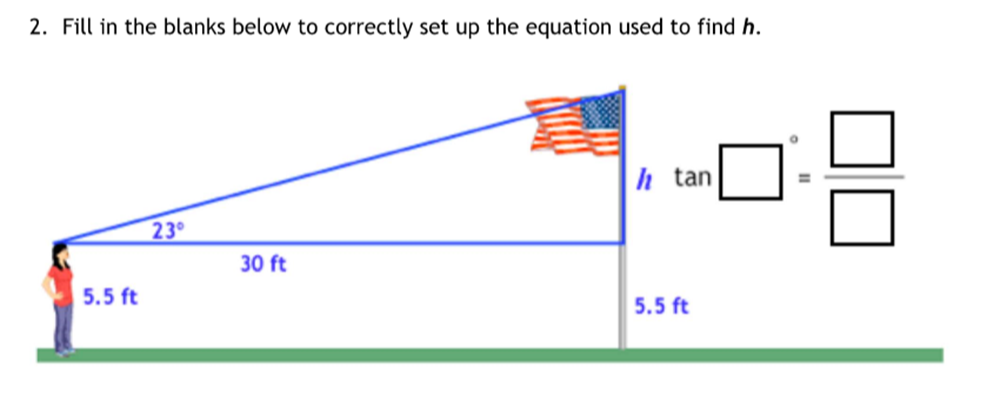
4. Complete the following trigonometric ratios.



5. A boat is sailing about 400 feet from the cliff at the shore of a lake. A sailor on the boat uses a device to measure the angle of elevation between the lake level and the top of the cliff. He draws a diagram like the one below. Find the **height** of the cliff to the nearest tenth.



1. Fill in the blanks below to correctly set up the equation used to find **h.**



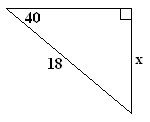
1. Now that Sarah has the correct equation, can you help her solve it?

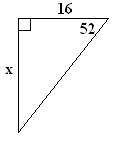
What is the value of ***h*** to the nearest hundredth?

***h = \_\_\_\_\_\_\_\_***

1. Now that you have found *h*, what is the actual height of the flagpole?

***height = \_\_\_\_\_\_\_\_\_***

For each of the following problems, find X:

1. 2.

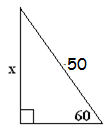
A) 9.9 A) 8.9

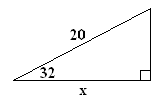
B) 12.6 B) 11.6

C) 15.2 C) 13.8

D) 20.5 D) 15.1

E) 24.8 E) 22.3



3. 4.

A) 9 A) 86.6

B) 11 B) 45.9

C) 12 C) 43.3

D) 15 D) 32.7

E) 17 E) 25

Solve for X:

7.  8.  9.  10. 

A) 5 A) 5 A) 3.8 A) 3.8

B) 7 B) 7 B) 5.9 B)5.9

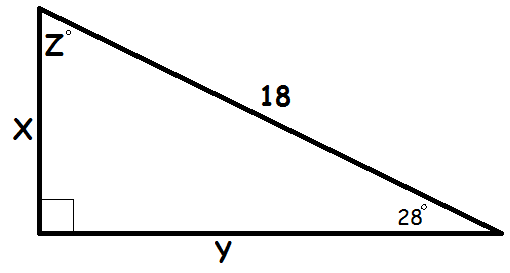
C) 9 C) 9 C) 6.5 C) 6.5

D) 12 D) 12 D) 8.1 D) 8.1

E) 20 E) 20 E) 10.8 E) 10.8

**SOLVING A TRIANGLE**

“Solving a triangle” is when you find the measures of all sides and angles. Follow the steps below to solve the triangle shown.



1. Find X using the sides X, 18

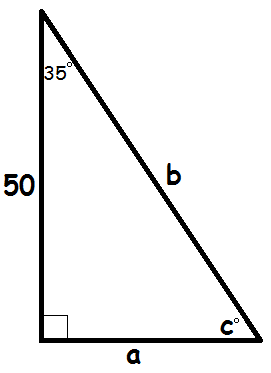
and sohcahtoa.

2. Find Y using the sides Y, 18

and sohcahtoa.

3. Find Z by making sure the angles add to 180.

4. Solve the following triangle. (Find a, b and c)



**Geometry Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**WS Trigonometry side-notes Period \_\_\_\_\_**

In each of the following equations, solve for x:

1.  2.  3.  4. 

5. Use a calculator to evaluate each of the following:

A)  D) 

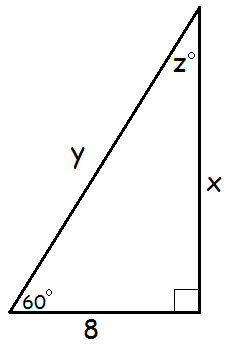
B)  E) 

C)  F) 

6. Which two problems (in #5) give the same answer?

7. Why?

8. Solve this triangle 9. What **2** equations could be used to solve for x?

Using sohcahtoa, write an equation to solve for x based on the 400 angle, then write another equation to solve for x using the 500 angle.