Math 2 Unit 2 Name _____
After Radicals Test Date _____

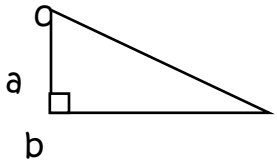
# Worksheet 2A- part 1

Right Triangle Review/Prep for Trig Unit

**The Pythagorean Theorem states:**

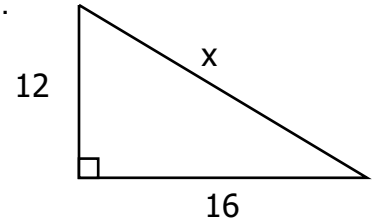
In a right triangle the sum of the _____ of the legs is equal to the square of the _____.

That is to say, $a^2 + b^2 = c^2$



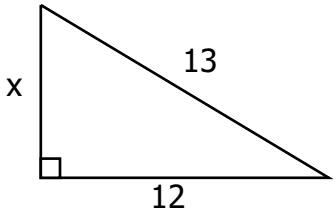

In questions 1-3, use the **Pythagorean theorem** to solve for the indicated variables.

1.



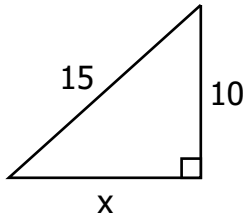

x = _____

2.




x = _____

3.




x = _____

## Special Right Triangle Review

**Key**
S.L.=short leg
Hyp= hypotenuse
L.L=long leg

**Summary:**

**45-45-90**
2 legs are ≅

Hyp= $\sqrt{2} \bullet$ LEG

Leg= $\frac{hyp}{\sqrt{2}}$

**30-60-90**
**S.L is your reference leg (always find it FIRST)**

L.L=S.L$\bullet\sqrt{3}$

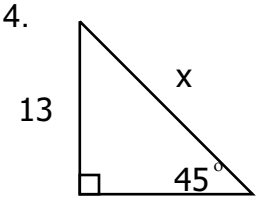
HYP=S.L$\bullet 2$

S.L= $\frac{L.L}{\sqrt{3}}$

S.L= $\frac{hyp}{2}$

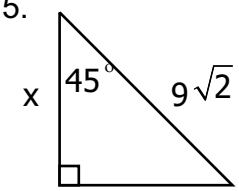
In questions 4-12 , use what we learned about **special right triangles** to find the value of x and y. ***Show your work for full credit.***

4.



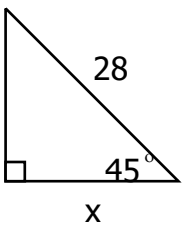

x = _____

5.



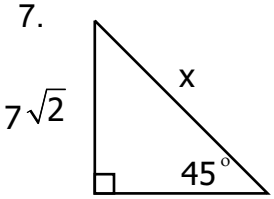

x = _____

6.



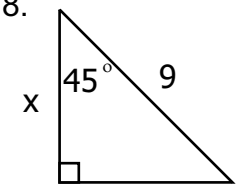

x = _____

7.



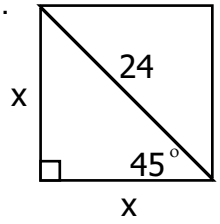

x = _____

8.



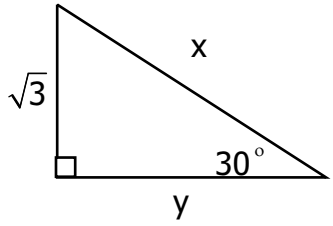

x = _____

9.




x = _____

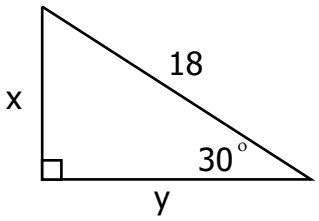
10.




x = _____

y = _____

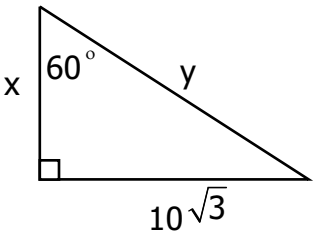
11.




x = _____

y = _____

12.




x = _____

y = _____

Name _____ Date _____

# Worksheet 2A- part 2

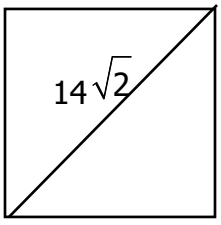
(If you didn't finish Worksheet 9A – given out after the Unit 8 Test – make sure you do that now!)

A. Find the 5 **HIGHLIGHTED** Pythagorean Triples on the notes page, and write them here (these are known by some as Pythagorean PRIMITIVES.) Then write 4 more triples that are multiples of the PRIMITIVES – these are also TRIPLES and are very handy to know / be able to recognize for trig work.

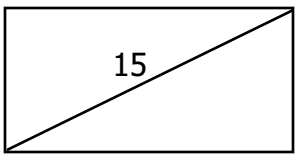
1) 2) 3)

4) 5)

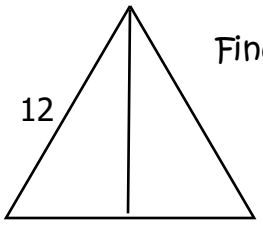
B. We have practiced plenty of simpler examples of PYTHAGOREAN THEOREM and SPECIAL RIGHT TRIANGLES – now apply that work to the following problems:

6. 


Find the perimeter of the square with the given diagonal.

7. 

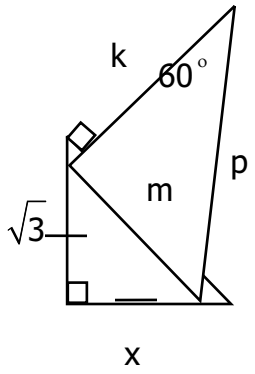

Find the perimeter of the rectangle.

8. 

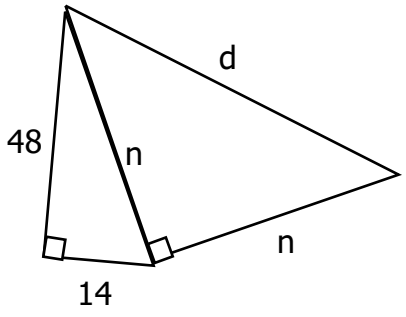
Find the altitude of this equilateral triangle.

HINT: What are the measures of the angles in an equilateral triangle?

9. Find the missing lengths




10. Find the missing lengths.

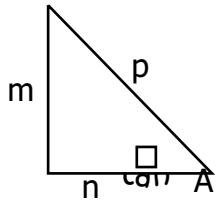


Name _____ Date _____

# Math 2 Unit 2 Lesson 2.6A Trigonometric Ratios

Use the definitions of the three trig ratios to complete each statement.

1.

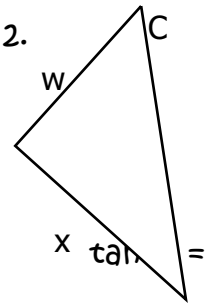



sin A = _____

cos A = _____

tan A = _____

2.

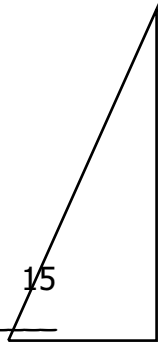



sin C = _____

cos C = _____

tan = _____

3.




sin B = _____

cos B = _____

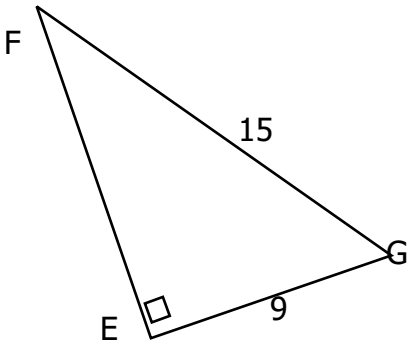
tan B = _____

sin A = _____

cos A = _____

tan A = _____

4.




sin F = _____

cos F = _____

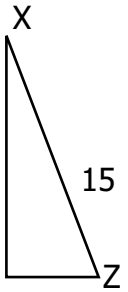
tan F = _____

sin G = _____

cos G = _____

tan G = _____

5.

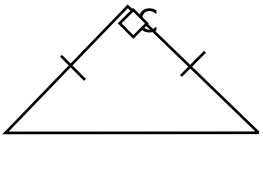



sin Z = _____

cos Z = _____

tan Z = _____

6.




sin B = _____

cos B = _____

tan B = _____

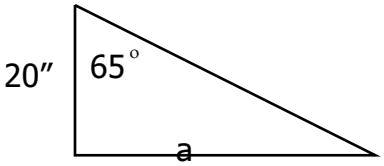
sin A = _____

cos A = _____

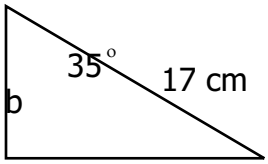
tan A = _____

Use trig ratios and your calculator to approximate each length to the nearest tenth (these are all RIGHT triangles).

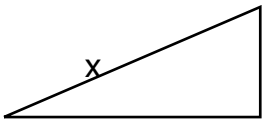
7.



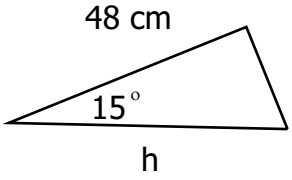

8.



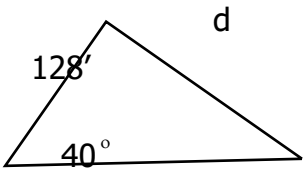

9.



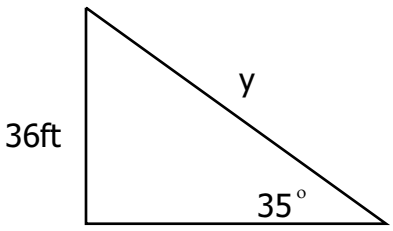

10.




11.




12.

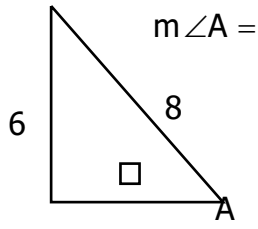



Name _____ Date _____

## Math 2 Unit 2 Lesson 2.6A Trigonometric Ratios, Angles

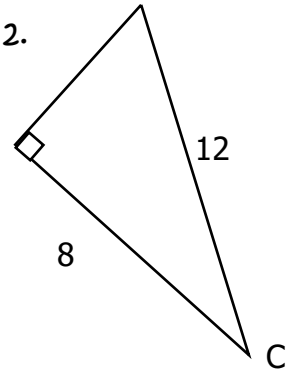
Write an equation using the appropriate trig ratio for finding the measure of the given angle(s). Then find the measure(s) to the nearest tenth.

1.



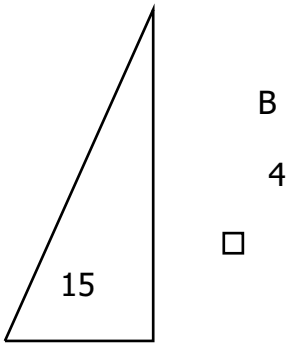

$m\angle A =$ _____

2.



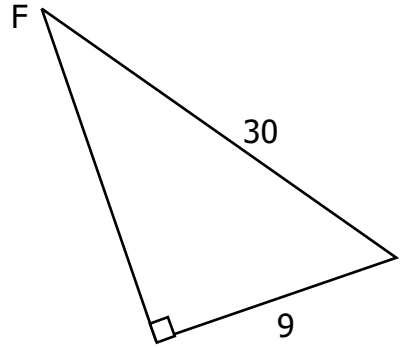

$m\angle C =$ _____

3.



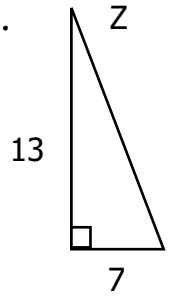

$m\angle B =$ _____

4.



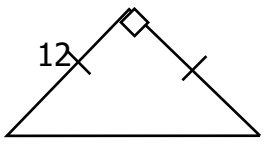

$m\angle F =$ _____

5.



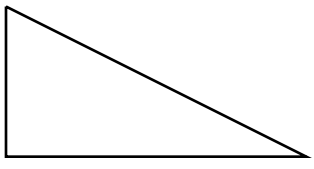

$m\angle Z =$ _____

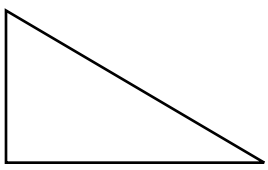
6.



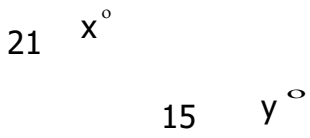

$m\angle G =$ _____

Use trig ratios and your calculator to approximate each length and angle measure to the nearest tenth (these are all RIGHT triangles).

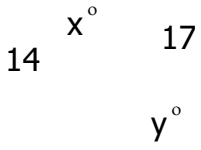




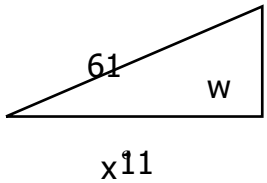
7.



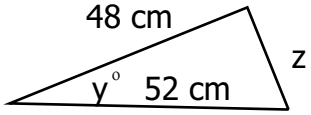

8.



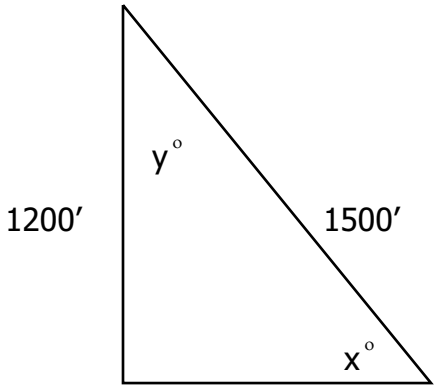

9.




10.




11.




Name _____ Date _____

# Math 2 Unit 2 Lesson 2.6B Trigonometric Ratios Aplications

For each problem, draw a picture/diagram showing the right triangle. Then write a trig ratio equation, and solve the equation to answer the problem.

***The angle between the HORIZONTAL and a line of sight is called an *angle of elevation* or an *angle of depression* (see notes for help).**

1. A 20-foot ladder is leaning against a wall. The base of the ladder is 3 feet from the wall. What angle does the ladder make with the ground?

2. How tall is a bridge if a 6-foot tall person standing 100 feet away can see the top of the bridge at an angle of 30 degrees to the horizon?

3. An air force pilot must descend 1500 feet over a distance of 9000 feet to land smoothly on an aircraft carrier. What is the plane's angle of descent?

4. An eagle spotted a mouse 20 feet below at an angle of 42 degrees with the horizon. If the eagle flies along its line of sight, how far will it have to fly to reach its prey?

5. In a movie theatre 150 feet long, the floor is sloped so there is a difference of 30 feet between the front and back of the theater. What is the angle of depression?

EXTRA CREDIT - @ teacher's discretion

Make up your own trig word problem and illustrate it (by hand or with computer art), and turn it in on a separate unlined 8 ½ by 11 sheet of paper. Include the correct solution on a separate sheet.