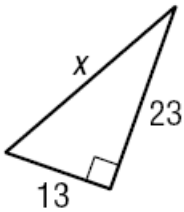
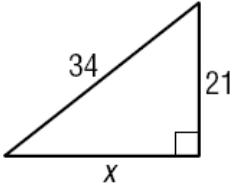
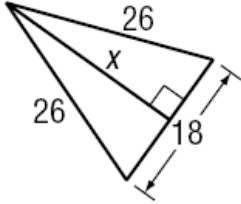
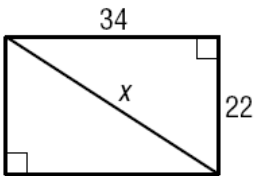
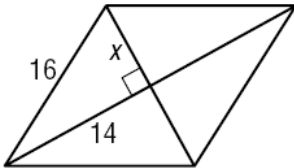
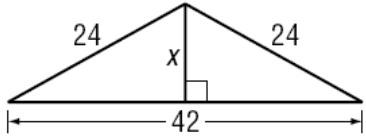


8.1 The Pythagorean Theorem and its Converse

ASSIGNMENT

For #1-6, find the value of x . Round your answer to 2 decimal places, if needed.

| | | |
|--|--|--|
| <p>1.</p>  | <p>2.</p>  | <p>3.</p>  |
| <p>4.</p>  | <p>5.</p>  | <p>6.</p>  |

For #7-10, determine whether each set of measures can be the measures of the sides of a right triangle. Then state whether the sides form a Pythagorean triple. Justify your answer mathematically.

7. 9, 40, 41

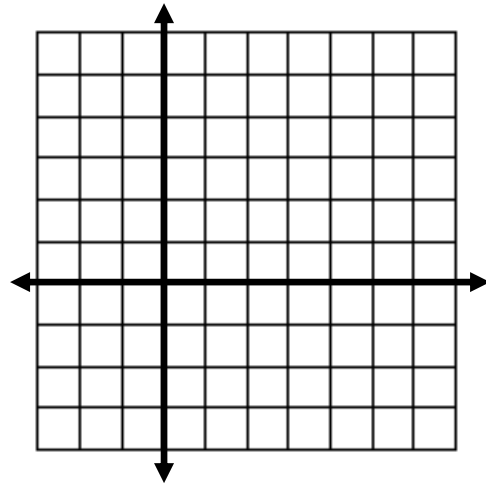
8. 29, 7, 28

9. 24, 40, 32

10. 2, $\sqrt{12}$, $\sqrt{8}$

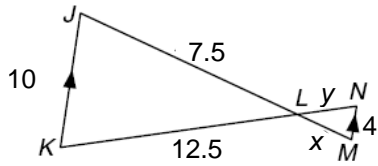
For #11 determine whether $\triangle GHI$ is a right triangle for the given vertices.
Justify your answer mathematically.

11. $G(2, -1), H(5, 4), I(6, -3)$



12. Solve: $\frac{x+5}{4} = \frac{x-7}{2}$

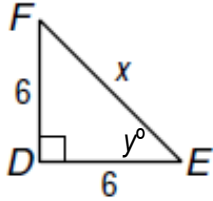
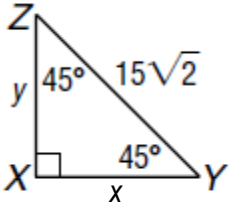
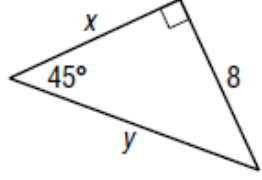
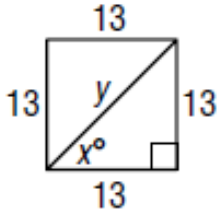
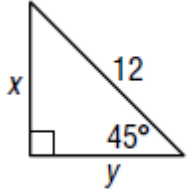
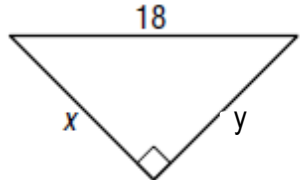
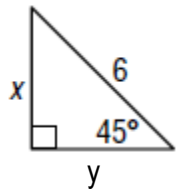
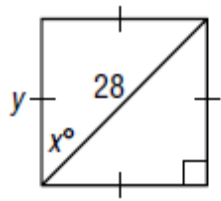
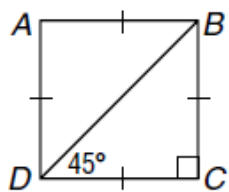
13. Find the values of x and y .



$x = \underline{\hspace{2cm}}$ $y = \underline{\hspace{2cm}}$

ASSIGNMENT

Find the values of x and y . Write your answer in simplest radical (square root) form.

| | | |
|---|---|---|
| <p>1.</p>  | <p>2.</p>  | <p>3.</p>  |
| <p>4.</p>  | <p>5.</p>  | <p>6.</p>  |
| <p>7.</p>  | <p>8.</p>  | <p>9. The perimeter of ABCD is 20 cm. Find BD.</p>  |

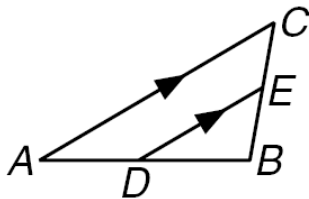
For #10-11, determine whether each set of measures can be the measures of the sides of a right triangle. Then state whether the sides form a Pythagorean triple. Justify your answer mathematically.

10. 7, 12, 20

11. 5, 5, $\sqrt{50}$

12. A building casts a 210-foot shadow. A nearby tree that measures 6.5 feet casts a 4-foot shadow. **Make a sketch of the situation.** Write a proportion that could be used to determine the height of the building. Then solve the proportion.

13. If $AD = 24$, $DB = 15$, and $EB = 10$, find CB .

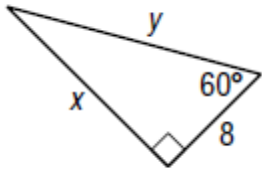


14. The ratio of the measures of the three sides of a triangle is 3:4:6. If the perimeter is 91 cm, find the measure of the longest side.

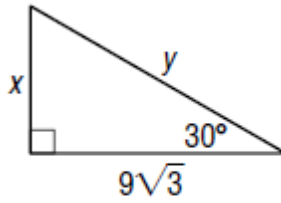
ASSIGNMENT

Find the values of x and y . Write your answer in simplest radical (square root) form.

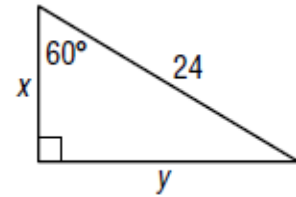
1.



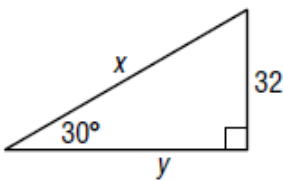
2.



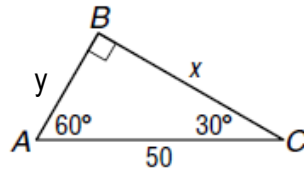
3.



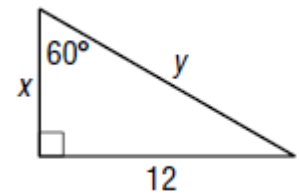
4.



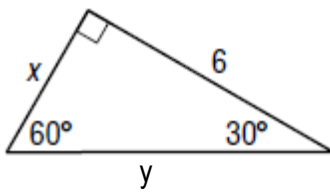
5.



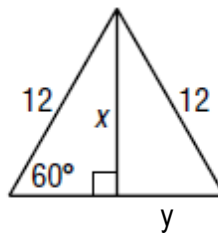
6.



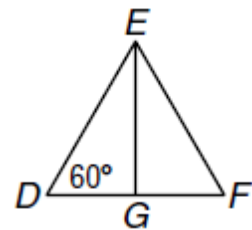
7.



8.

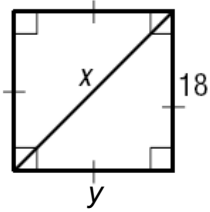


9. The altitude of an equilateral triangle is $10\sqrt{3}$. Find the perimeter of the triangle.

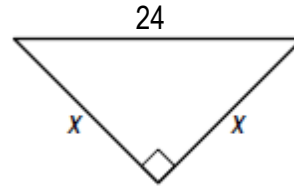


Find the missing length(s) in each figure below. Give exact (radical) answers, where appropriate.

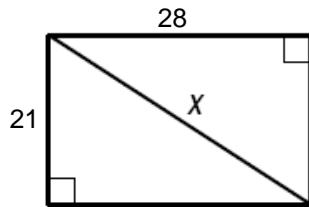
10.



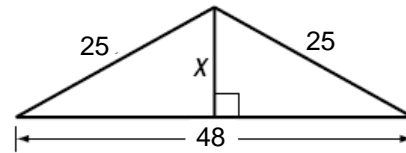
11.



12.



13.



14. $\triangle ABC \sim \triangle STR$, so $\frac{AB}{CA} =$ _____

- A. $\frac{AB}{BC}$ B. $\frac{ST}{RS}$ C. $\frac{TR}{RS}$ D. $\frac{RS}{ST}$

15. Find the length of \overline{MN} under a dilation with a scale factor of $\frac{2}{3}$ if $M'N' = 18$.

Geometry B
8.4 Trigonometry

ASSIGNMENT

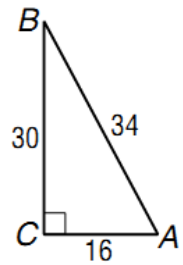
Name _____

Find each indicated trigonometric ratio as a reduced fraction.

1. $\sin B$

2. $\cos B$

3. $\tan B$



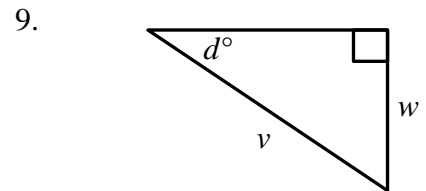
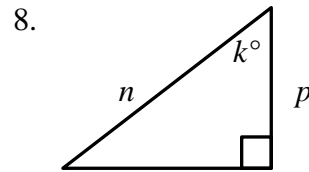
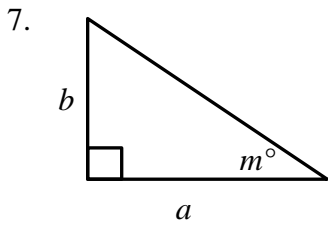
Use a calculator to find the following values to the nearest hundredth.

4. $\sin 5$

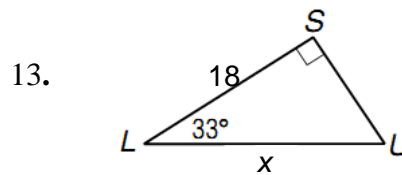
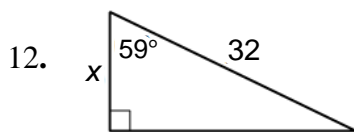
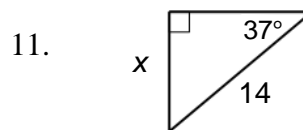
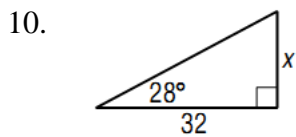
5. $\tan 23$

6. $\cos 61$

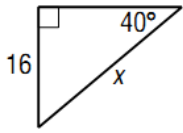
For questions 7-9, decide if sin, cos or tan would be best.



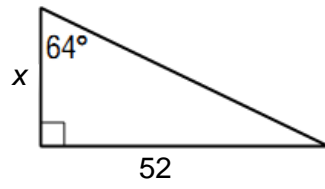
Find x . Round to the nearest tenth.



14.

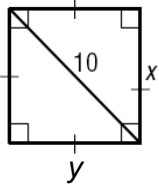


15.

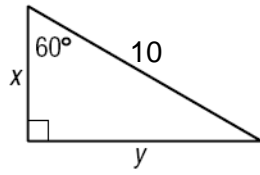


Find x and y in each figure below. Give exact (radical) answer for #16 and 17.

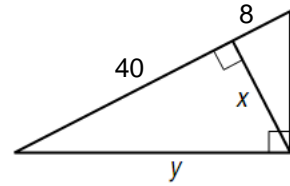
16.



17.



18.



Geometry B
8.5 Solving for a Missing Angle

Name _____
ASSIGNMENT

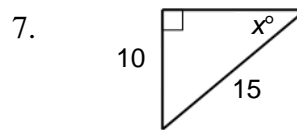
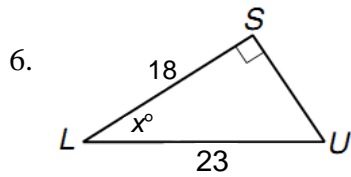
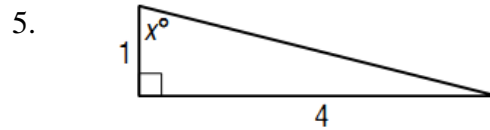
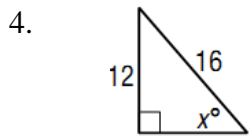
Find the measure of each acute angle to the nearest degree.

1. $\cos B = 0.2985$

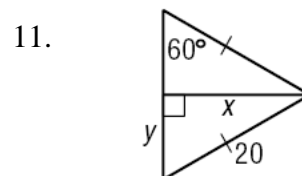
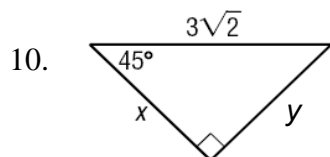
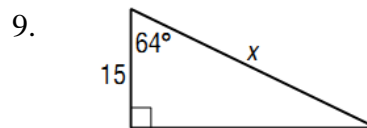
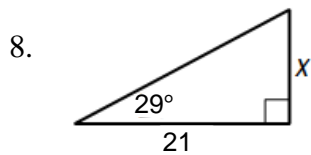
2. $\tan M = 0.3894$

3. $\sin J = 0.1176$

Find x . Round to the nearest degree.



Find the missing lengths in each triangle.

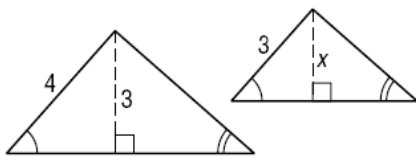


For #12-13, determine whether each set of measures can be the measures of the sides of a right triangle. Then state whether the sides form a Pythagorean triple. Justify your answer mathematically.

12. 33, 65, 56

13. 3, 4, $\sqrt{7}$

14. The two triangles below are similar. Find x .



16. A car has a length of 8 feet and a width of 4.8 feet. If the width of a model of the car is 6 inches, what is the length of the model?

17. The perimeter of a rectangle is 336 inches. The ratio of the length to the width is 9:5. Find the length of the rectangle.

8.6 Angles of Elevation and Depression ASSIGNMENT

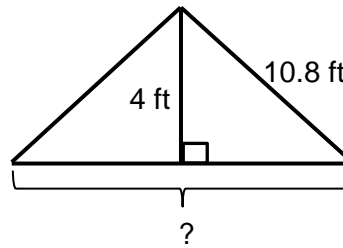
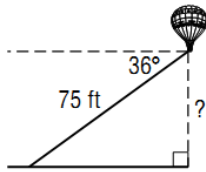
For each problem, draw and label a picture (if not provided). Show all work.

1. A ladder leaning against a building makes an angle of 81° with the ground. If the ladder is 20 feet long, how far up the building will the ladder reach? Round to the nearest tenth.

2. Suppose the sun casts a shadow off a 35-foot tall building. What is the angle of elevation to the sun if the shadow is 22 feet long? Round to the nearest tenth of a degree.

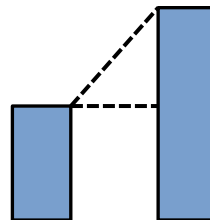
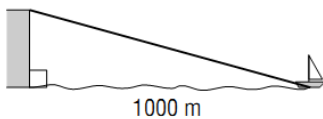
3. The angle of depression from a balloon on a 75-foot string to the person on the ground is 36° . How high is the balloon?

4. A builder makes a simple truss for a roof (see below). How wide is base of the truss?

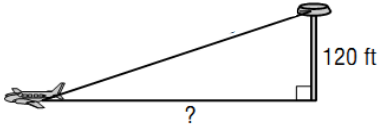


5. A boat is 1000 meters from a cliff. If the angle of depression from the top of the cliff to the boat is 10° , how tall is the cliff? Round to the nearest tenth.

6. From a window 24 feet above the ground, the angle of elevation to the top of a second building is 38° . The distance between the buildings is 63 feet. Find the height of the second building to the nearest tenth of a foot.

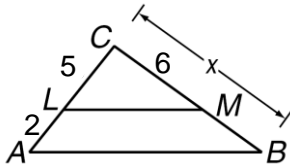


7. From the top of a 120-foot control tower, an air-traffic controller looks down at a plane sitting 500 feet down the runway from the base of the tower. What is the angle of depression from the top of the tower to the plane?



8. The perimeter of an equilateral triangle is 30 meters. Find the exact length of an altitude of the triangle.

9. Find x so that $\overline{LM} \parallel \overline{AB}$.



10. Solve: $\frac{4x-2}{8} = \frac{x+2}{4}$

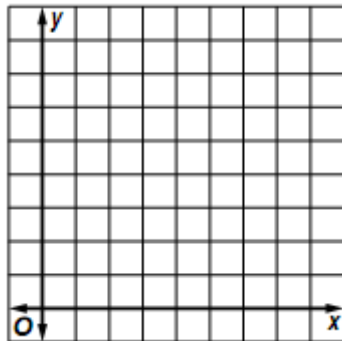
11. Graph the polygon that has the following vertices. Then find and graph the image of the polygon after a dilation centered at the origin with a scale factor of 1.5.

$$A(0, 2) \rightarrow A'$$

$$B(4, 6) \rightarrow B'$$

$$C(6, 3) \rightarrow C'$$

$$D(2, 0) \rightarrow D'$$



12. A photograph 5 inches wide and 3 inches tall is enlarged to make a poster. The poster is 4 feet wide. Find the height of the poster.

