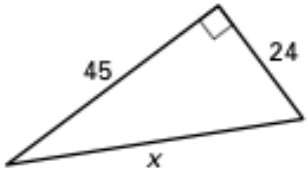
Honors Geometry

Review WS 7.1 - 7.3

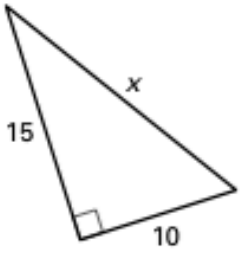
Name _____

Find the length of the hypotenuse of the right triangle. Write your answer in simplest radical form.

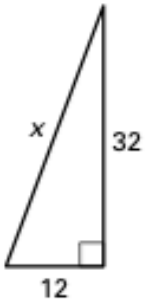
1.



2.

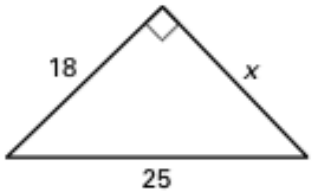


3.



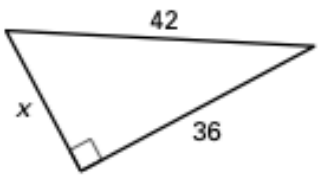
Find the unknown leg length *x*. Write your answer in simplest radical form.

4.



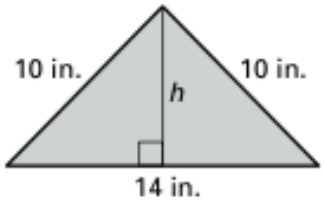
5.

6.

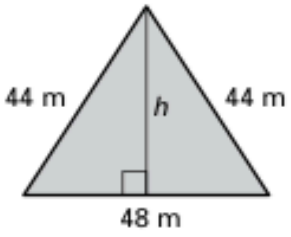


Find the area of the isosceles triangle. Write your answer in simplest radical form.

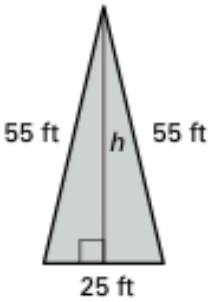
7.



8.



9.



10. Multiple Choice What is the length of the hypotenuse of a right triangle with leg lengths of 21 inches and 28 inches?

A. 30 inches **B.** 35 inches **C.** 40 inches **D.** 42 inches

The given lengths are two sides of a right triangle. All three side lengths of the triangle are integers and together form a Pythagorean triple. Find the length of the third side and tell whether it is a leg or the hypotenuse.

11. 24 and 32 **12.** 24 and 45 **13.** 40 and 85

14. 49 and 168 **15.** 72 and 78 **16.** 72 and 153

Find the area of a right triangle with given leg ℓ and hypotenuse h. Round decimal answers to the nearest tenth.

17. $\ell = 13$ cm, $h = 19$ cm **18.** $\ell = 17$ ft, $h = 25$ ft **19.** $\ell = 7.5$ in., $h = 42$ in.

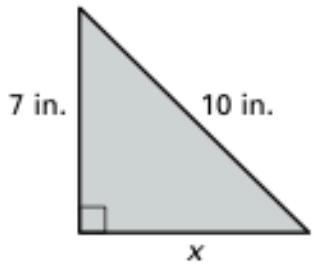
20. $\ell = 8.4$ mi, $h = 29$ mi **21.** $\ell = 18$ in., $h = 32$ in. **22.** $\ell = 30$ m, $h = 60$ m

23. Multiple Choice One leg of a right triangle is twice as long as the other leg. The area of the triangle is 49 square feet. What is the length of the shorter leg?

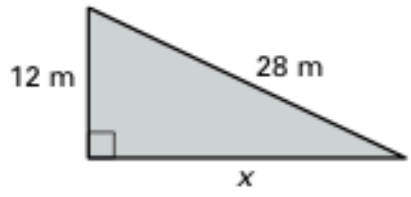
A. 5 ft **B.** 6 ft **C.** 7 ft **D.** 8 ft

Find the area of the right triangle. Write your answer in simplest radical form.

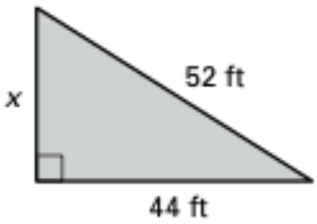
24.



25.

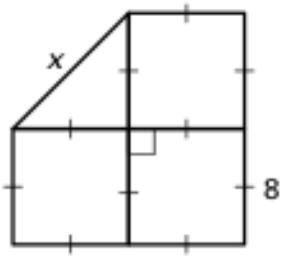


26.

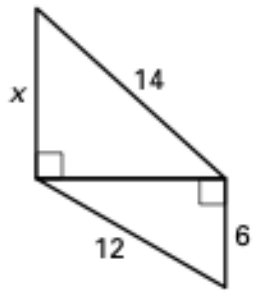


Find the unknown side length x. Write your answer in simplest radical form.

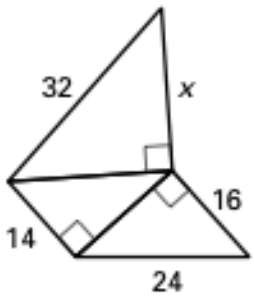
27.



28.



29.



LESSON
7.2

Decide whether the numbers can represent the side lengths of a triangle. If they can, classify the triangle as *acute*, *right*, or *obtuse*.

1. 26, 35, 62

2. 14, 18, 29

3. 30, 72, 78

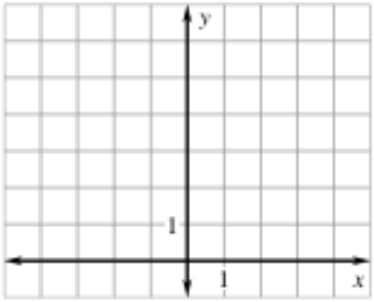
4. 17, 19, 22

5. 27, 36, 45

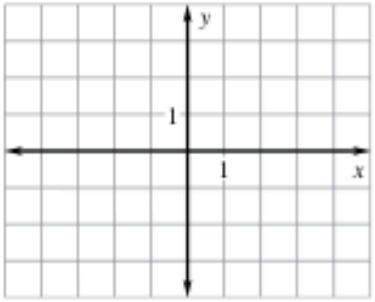
6. 25, 36, 49

Graph points *A*, *B*, and *C*. Connect the points to form $\triangle ABC$. Decide whether $\triangle ABC$ is *acute*, *right*, or *obtuse*.

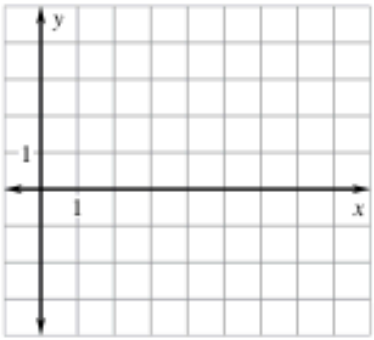
7. $A(-1, 4)$, $B(1, 1)$, $C(4, 3)$



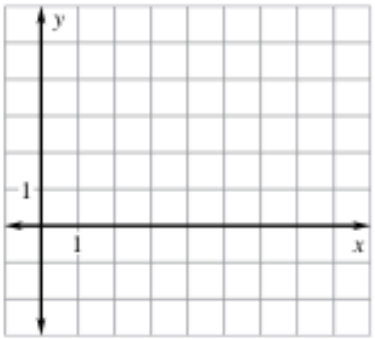
8. $A(-2, 2)$, $B(2, -3)$, $C(4, -1)$



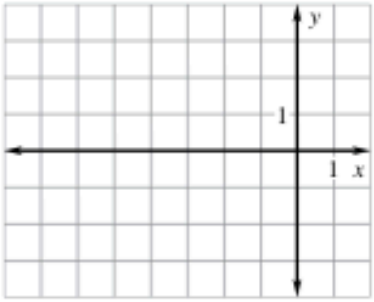
9. $A(2, 1)$, $B(3, -4)$, $C(6, 5)$



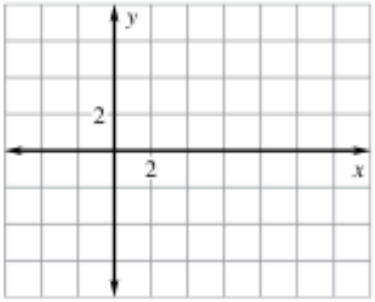
10. $A(3, 0)$, $B(1, -2)$, $C(3, 5)$



11. $A(-4, 3)$, $B(-5, -2)$, $C(-1, 1)$



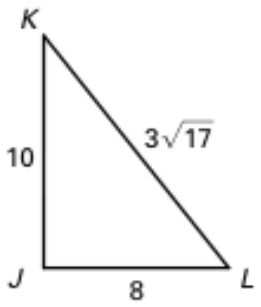
12. $A(-2, -3)$, $B(1, 5)$, $C(6, -5)$

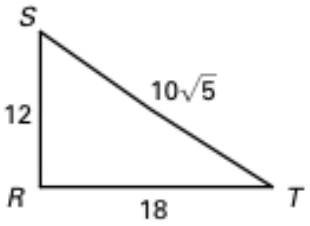


In Exercises 13 and 14, copy and complete the statement with <, >, or =, if possible. If it is not possible, *explain* why.

13. $m\angle J$ _?_ $m\angle R$

14. $m\angle K + m\angle L$ _?_ $m\angle S + m\angle T$

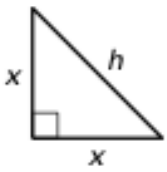




15. Multiple Choice What type of triangle has side lengths of 14, 11, and 25?

A. Acute **B.** Right **C.** Obtuse **D.** None

16. Right Isosceles Triangle A right isosceles triangle has two legs of the same length x and a hypotenuse of length h. What is the value of h in terms of x?



The sides and classification of a triangle are given below. The length of the longest side is the integer given. What value(s) of *x* make the triangle?

17. $x, x, 16$; right

18. $x, x, 10$; obtuse

19. $x, x, 15$; acute

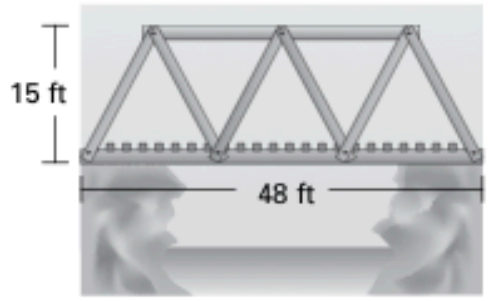
20. $x, x - 5, 24$; right

21. $x, x - 3, 33$; obtuse

22. $x - 4, x + 7, 45$; acute

In Exercises 23 and 24, use the diagram and the following information.

Railroad Bridge Many railroad bridges are designed using triangular structures like the one in the diagram. All five triangles in the design are congruent. The length of the bridge is 48 feet and the height is 15 feet.



23. Are the triangles in the structure *acute*, *right* or *obtuse* triangles?

24. How many feet of material are needed to build one side of the bridge as shown in the diagram?

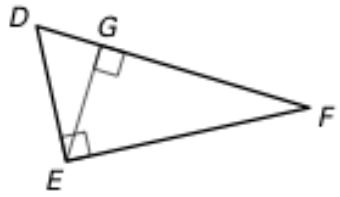
Pythagorean Theorem: _____

Pythagorean Triple: _____

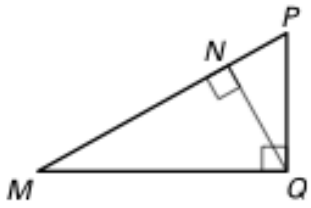
Geometric Mean: _____

Write a similarity statement for the three similar triangles in the diagram. Then complete the proportion.

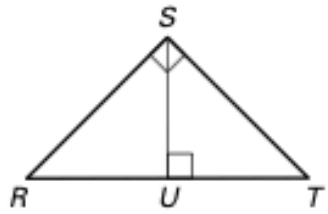
1. $\frac{DG}{EG} = \frac{?}{GF}$



2. $\frac{MQ}{PQ} = \frac{MN}{?}$

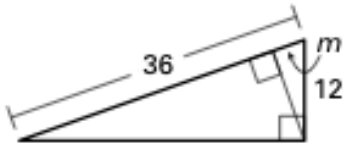


3. $\frac{?}{RU} = \frac{RT}{RS}$

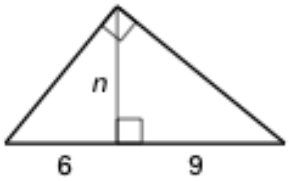


Find the value of the variable.

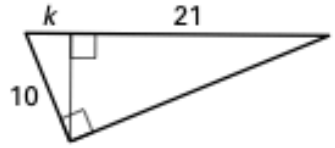
4.



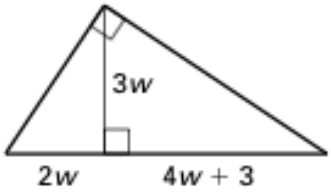
5.



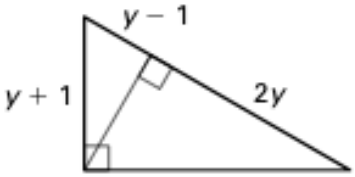
6.



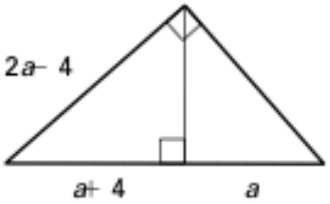
7.



8.

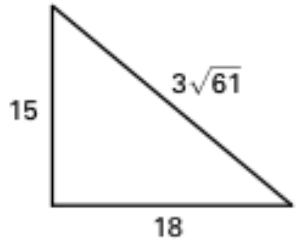


9.

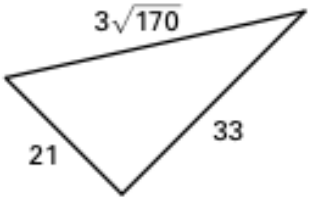


Tell whether the triangle is a right triangle. If so, find the length of the altitude to the hypotenuse. Round decimal answers to the nearest tenth.

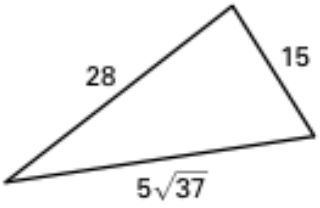
10.



11.

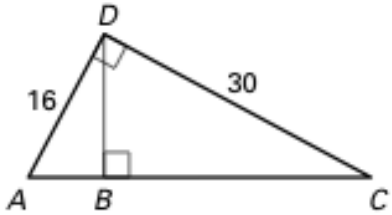


12.

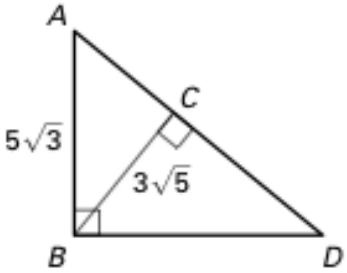


Use the Geometric Mean Theorems to find *AC* and *BD*.

13.



14.



15.