Name _____ Date _____ Pd _____

☑ *Use when you get it right all by yourself*

*S Use when you did it all by yourself, but made a silly mistake*

*H Use when you could do it alone with a little help from teacher or peer*

*G Use when you completed the problem in a group*

*X Use when a question was attempted but wrong (get help)*

*N Use when a question was not even attempted*

| CONCEPTS | BASIC | INTERMEDIATE | ADVANCED |
|---|---|---|---|
| Solving Right Triangles | 1 – 3, 11 - 13 | 14 - 16 | 19 |
| Pythagorean Triple | 1 - 3 | | |
| Classifying Triangles: Obtuse, Right, Acute | | 4 - 9 | |
| Pythagorean Theorem | 1 – 3, 11 - 13 | 4, 5 | 10, 19 |
| Real-World Application | | | 10, 19, 31 |
| Is it a triangle? | 6 - 9 | | |
| 45-45-90 Proportions | | 11 - 13 | 19 |
| 30-60-90 | | | 14 – 16, 19 |
| Area of polygons | 17, 18 | | |
| Properties of polygons | | 17, 18 | 31 |
| Writing similarity statements | | 20, 21 | |
| Geometric Mean, Altitude & Leg Theorem | 28 | 29 | 30 |
| Geometric Mean | 25 | 26 | 27 |
| Right Triangle Similarity Theorem | | | 22 - 24 |

## 9.1 Pythagorean Theorem and Triples

*Find the value of x. Then tell whether the side lengths form a Pythagorean triple.*
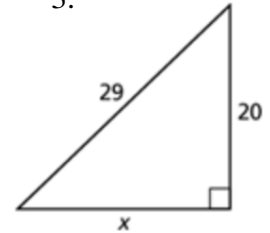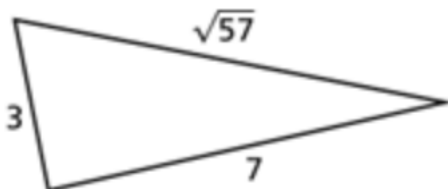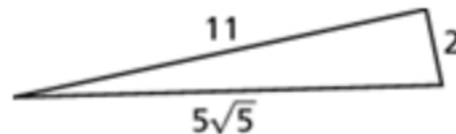
1.
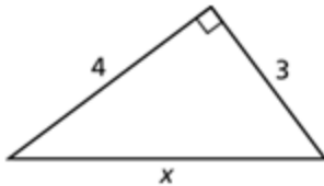


2.
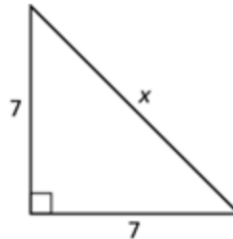


3.



*Tell whether the triangle is a right triangle.*

4.



5.

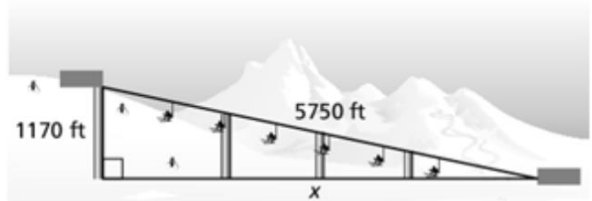*Verify that the segment lengths form a triangle. Is the triangle acute, right, or obtuse?*

6. 5, 12, & 13
7. 5, 7, & 8
8. 2, 10, & 11
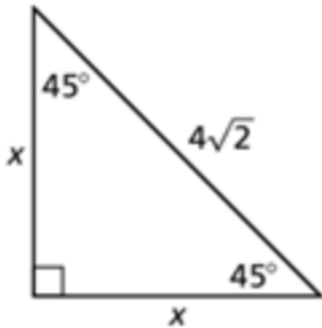9. $\sqrt{8}, 4, \& 6$

10. A ski lift forms a right triangle, as shown. Use the Pythagorean Theorem to approximate the horizontal distance traveled by a person riding the ski lift. Round your answer to the nearest whole foot.
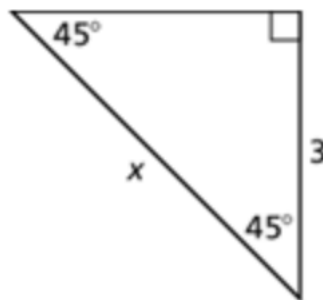


5750 ft

1170 ft

x

## 9.2 Special Right Triangles
*Find the value of x. Write your answer in simplest exact form. Show work for full credit.*

11.



45°

45°

$4\sqrt{2}$

x

x

12.



45°

x

3

45°

13.



5

5

45°

45°

x

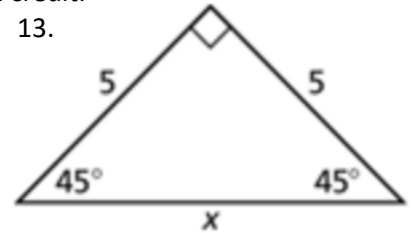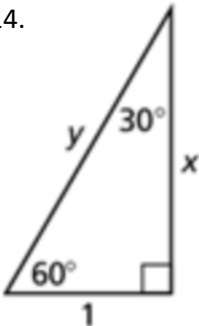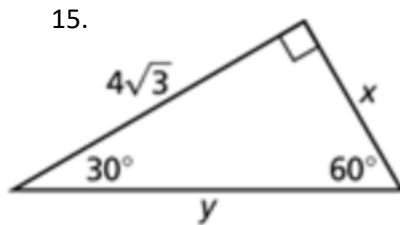*Find the values of x and y. Write your answers in simplest exact form. Show work for full credit.*

14.



30°

y

x

60°

1

15.



$4\sqrt{3}$

30°

x

60°

y

16.



30°

10

x

60°

y

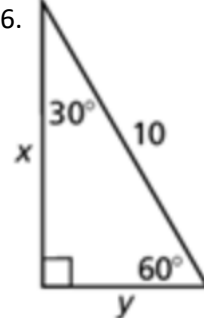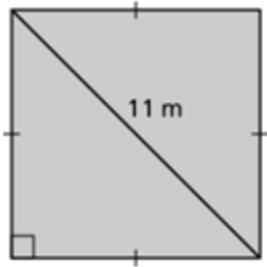*Find the area of the figure. Leave answers exact and round decimal answers to the nearest tenth.*
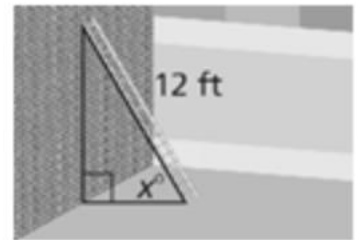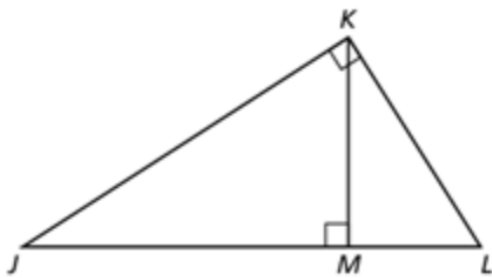
17.



11 m

18.



20 yd

19. A 12-foot ladder is leaning up against a wall, as shown. How high does the ladder reach up the wall when x is 30°? 45°? 60°? Round decimal answers to the nearest tenth, if necessary.
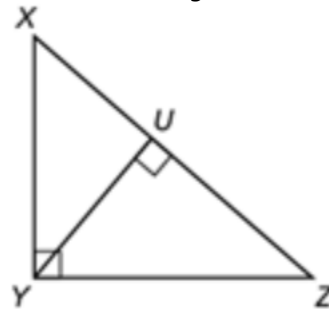


12 ft

x

**9.3 Geometric Mean**

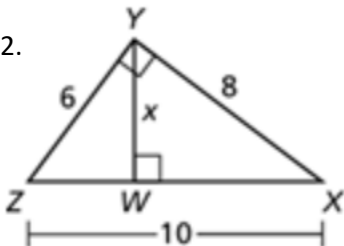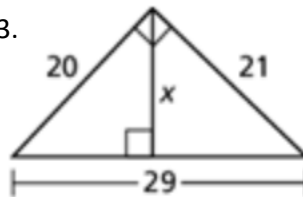*Identify the similar triangles by writing similarity statements for all three triangles.*

20.



K

J    M    L

21.



X

U

Y    Z

*Find the value of x. Show your set up and work for full credit.*

22.



Y

6    8

x
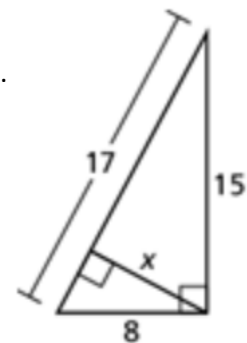
Z    W    X

10

23.



20    21

x

29

24.



17    15

x

8

*Find the geometric mean of the two numbers. Show the set up to earn full credit.*
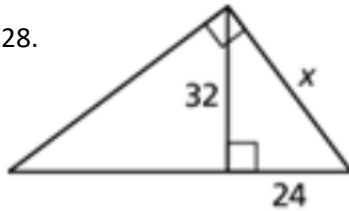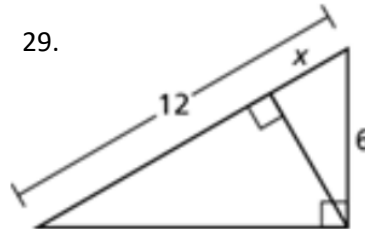
25. 3 & 12

26. 4 & 14

27. 10 & 24

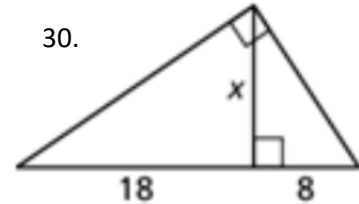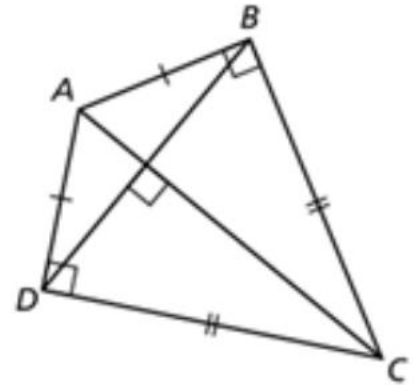*Find the value of x. Show the set up and work to earn full credit.*

28.



29.



30.



31. You are designing a diamond-shaped kite. You know that AB = 38.4 centimeters, BC = 72 centimeters, and AC = 81.6 centimeters. You want to use a straight crossbar $\overline{BD}$. About how long should it be?



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**CYU Reflection:** *How far can you go: basic, intermediate, or advanced?*

**Rate your mastery level!**
How confident are you with the skills this CYU covered? Circle the score you would give yourself.



| 1   2 | 3   4   5 | 6   7 | 8 |
| Basic | Intermediate | Advanced | Solved ALL! |