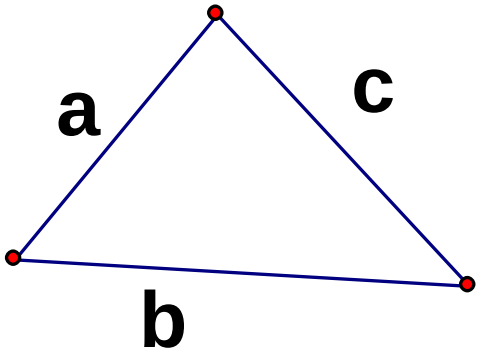
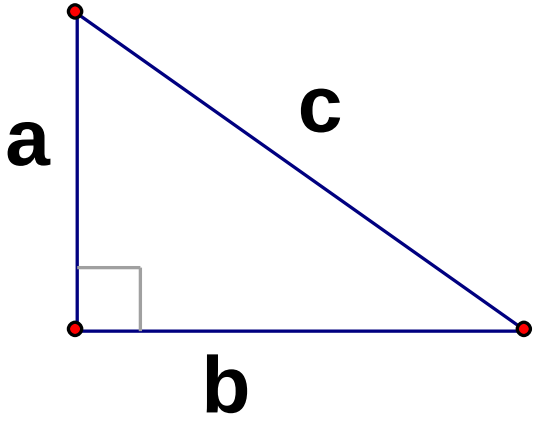
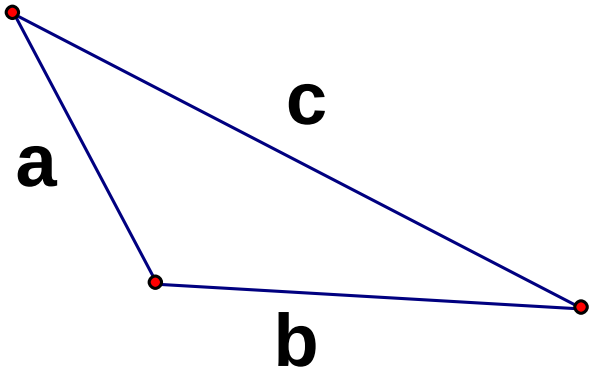
Day 3

Practice with
Special Right Triangles and
Pythagorean Theorem & Converse







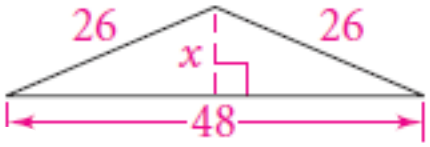
Tuesday, Day 3

Warm-Up Part 1

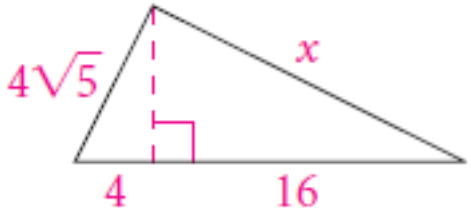
1) Each leg of an isosceles right triangle has measure 10 cm. To the nearest tenth of a centimeter, what is the length of the hypotenuse?

Find the value of x. Leave your answer in simplest radical form.

2)



3)



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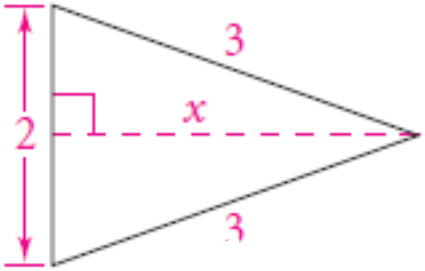


Warm-Up Part 2

Compare the boxed quantity in Column A with the boxed quantity in Column B.
Choose the best answer.

A. The quantity in Column A is greater.
B. The quantity in Column B is greater.
C. The two quantities are equal.
D. The relationship cannot be determined from the information given.

	Column A	Column B
42.	the length of the diagonal of a square with sides of length 3	the length of a leg of a 45°-45°-90° triangle with hypotenuse of length 3
43.	the length of the shorter leg of a 30°-60°-90° triangle with hypotenuse of length 4	the length of the hypotenuse of a 30°-60°-90° triangle with longer leg of length $\sqrt{3}$
44.	the length of an altitude of an equilateral triangle	the length of the shorter leg of a 30°-60°-90° triangle

45. What is the length of a diagonal of a square with sides of length 4?
A. 2 B. $\sqrt{2}$ C. $2\sqrt{2}$ D. $4\sqrt{2}$

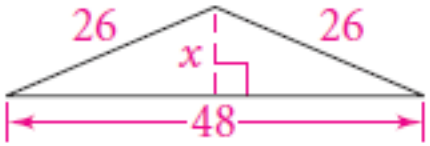
46. An isosceles right triangle has area 16 m^2.
a. Find the length of each leg. Leave your answer in simplest radical form. Justify your answer.
b. Find the length of the hypotenuse. Justify your answer.

Warm-Up Part 1 Answers

1) Each leg of an isosceles right triangle has measure 10 cm. To the nearest tenth of a centimeter, what is the length of the hypotenuse? 14.1

Find the value of x. Leave your answer in simplest radical form.

2)



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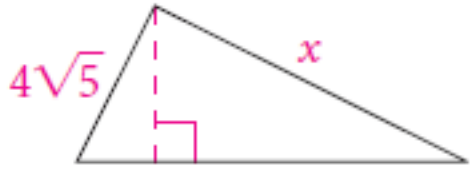
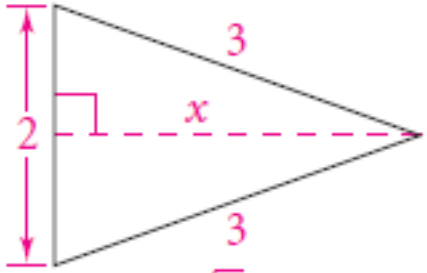
3)



$8\sqrt{5}$

4)



$2\sqrt{2}$

Warm-Up Part 2 Answers

Compare the boxed quantity in Column A with the boxed quantity in Column B.
Choose the best answer.

A. The quantity in Column A is greater.
B. The quantity in Column B is greater.
C. The two quantities are equal.
D. The relationship cannot be determined from the information given.

	Column A	Column B
A 42.	the length of the diagonal of a square with sides of length 3	the length of a leg of a 45°-45°-90° triangle with hypotenuse of length 3
C 43.	the length of the shorter leg of a 30°-60°-90° triangle with hypotenuse of length 4	the length of the hypotenuse of a 30°-60°-90° triangle with longer leg of length $\sqrt{3}$
D 44.	the length of an altitude of an equilateral triangle	the length of the shorter leg of a 30°-60°-90° triangle

45. What is the length of a diagonal of a square with sides of length 4? D
A. 2 B. $\sqrt{2}$ C. $2\sqrt{2}$ D. $4\sqrt{2}$

46. An isosceles right triangle has area 16 m^2.
a. Find the length of each leg. Leave your answer in simplest radical form. Justify your answer. $4\sqrt{2}\ m$
b. Find the length of the hypotenuse. Justify your answer. $8\ m$

HW Discussion

- Sheet on Weebly “HW After Unit 4B Test”

Remember to study for the quiz!

- One focus for your studying should be on what cues to look for in problems to know <u>what method to use</u>

- Use the Working a Right Triangle sheet as a reference ☺

Practice for the quiz!

- Working a Right Triangle sheet
  (skip the bottom one for now)

- Done early – start the practice sheet

Practice

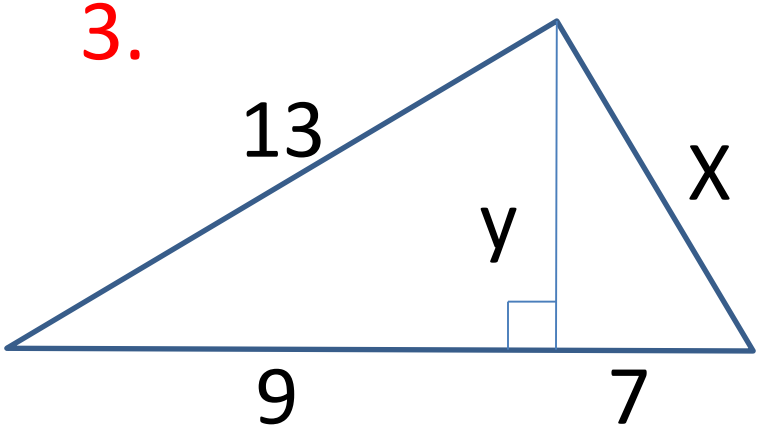
Classify the Triangle

1. $\frac{5}{12}, 1, \frac{13}{12}$

2. $2\sqrt{3}, 3\sqrt{2}, \sqrt{4}$

Solve for the variables

3.



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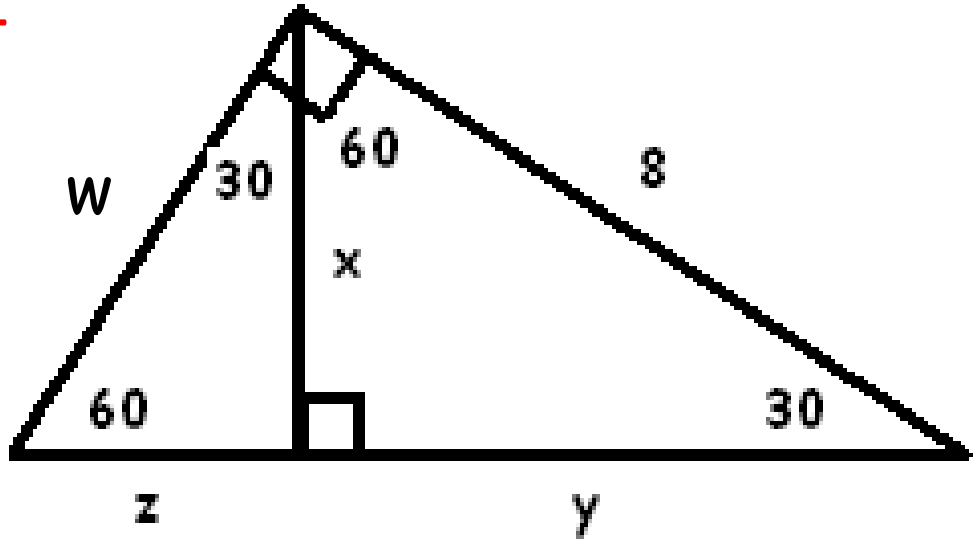


Practice Answers: Classify the Triangle

1) $\frac{5}{12}, 1, \frac{13}{12}$

These numbers are 5, 12, 13 all divided by the same number. Therefore, they are also a Pythagorean Triple and it is a **right triangle**.

2) $2\sqrt{3}, 3\sqrt{2}, \sqrt{4}$

Convert the numbers back to radicals → $\sqrt{12}, \sqrt{18}, \sqrt{4}$

OR Use calculator to find the biggest side.

$2\sqrt{3}, \sqrt{4}$ are the shortest lengths

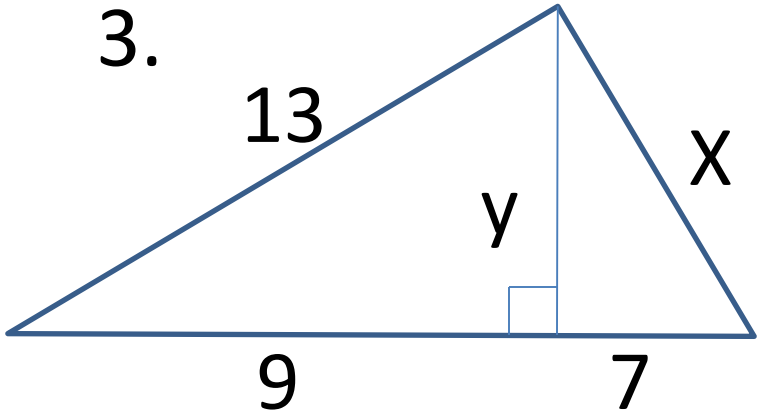
$\left(3\sqrt{2}\right)^2 \_\_\_ \left(2\sqrt{3}\right)^2 + \left(\sqrt{4}\right)^2$

$18 > 12 + 4$ The triangle is **obtuse**

Practice Answers

Solve for the variables

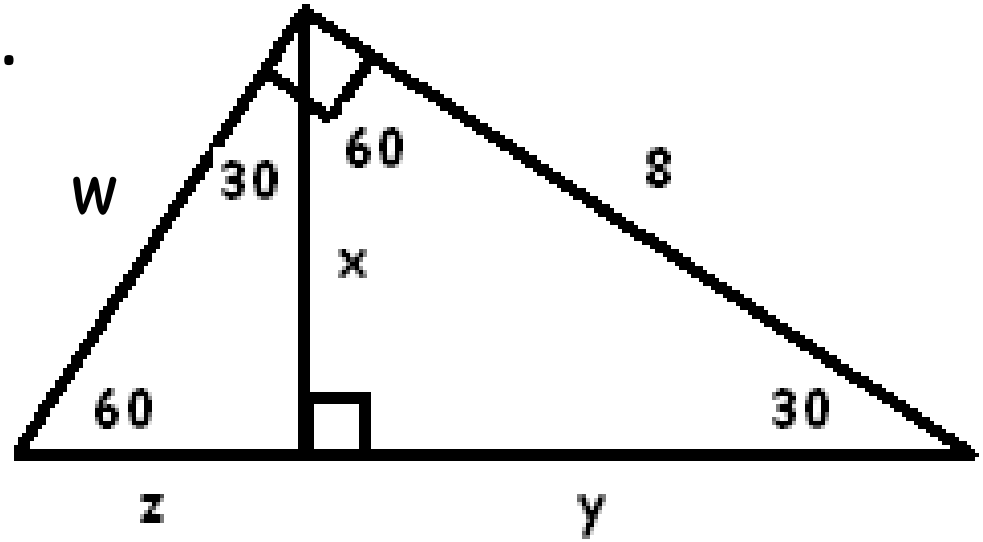
3.



$x = \sqrt{137}$

$y = 2\sqrt{22}$

4.



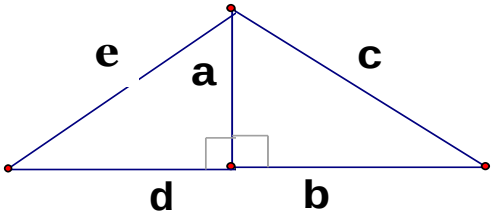
$x = 4$

$y = 4\sqrt{3}$

$z = \frac{4\sqrt{3}}{3}$

$w = \frac{8\sqrt{3}}{3}$

More Practice



Is the given triangle right, acute, obtuse, or not possible?

1. 3, $\sqrt{45}$,6

2. 10, 12, 16

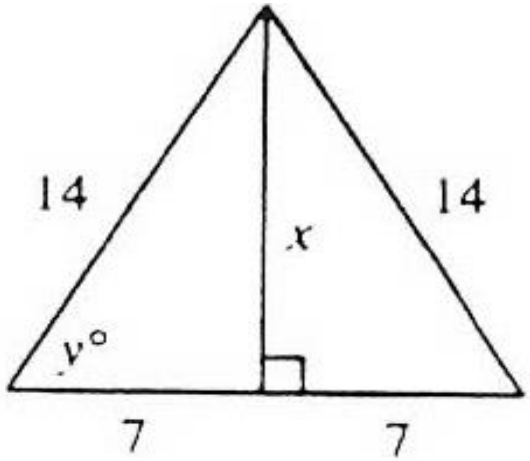
3. 3, 6, 9

4. An equilateral triangle has 16 cm sides. Find the altitude.

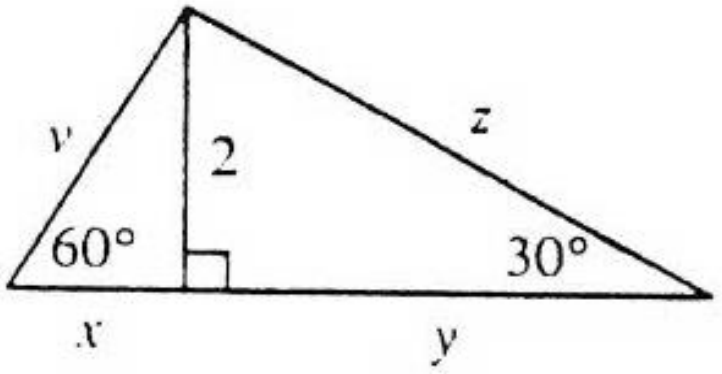
5. Find the perimeter of a square with a 15 inch diagonal.

Find the value of the variables

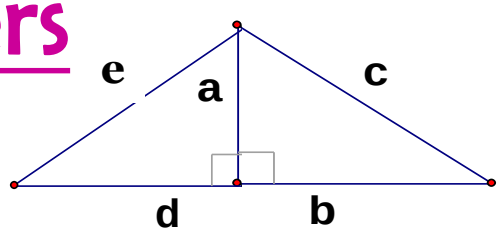
6.



7.



More Practice Answers



Is the given triangle right, acute, obtuse, or not possible?

1. 3, $\sqrt{45}$,6

right Δ

(*WATCH …sides may not be in order* !)

2. 10, 12, 16

obtuse Δ

3. 3, 6, 9

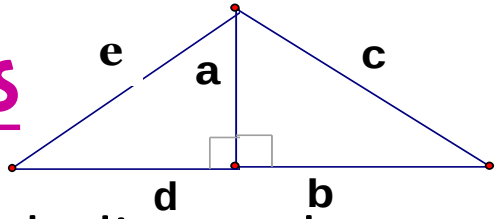
not possible

($3+6=9$, *but should be* $3+6>9$)

4. An equilateral triangle has 16 cm sides. Find the altitude.

$8\sqrt{3}\ cm$

More Practice Answers

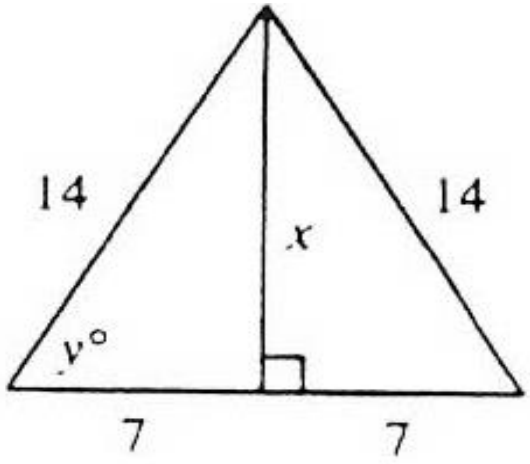


5. Find the perimeter of a square with a 15 inch diagonal.

$30\sqrt{2}$ *inches*

Find the value of the variables

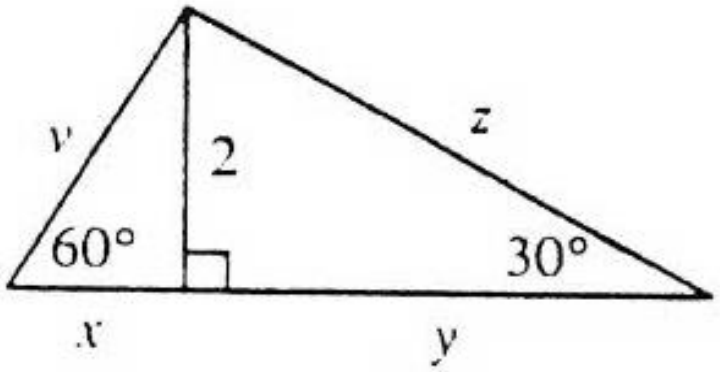
6.



$y = 60°$

$x = 7\sqrt{3}$

7.



$x = \frac{2\sqrt{3}}{3}$

$y = 2\sqrt{3}$

$z = 4$

$v = \frac{4\sqrt{3}}{3}$

Practice Day 3 Sheet

Do Right Side #8-18 first!!

(Practice with Special Right Triangles and Converse of Pythagorean Theorem and Related Theorems)