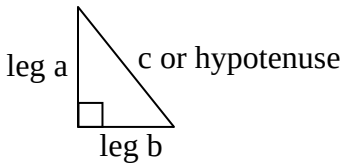
The PYTHAGOREAN FORMULA in RIGHT TRIANGLES



Use this formula when you see the words <u>hypotenuse</u> and <u>legs</u>.

$$a^2 + b^2 = c^2$$

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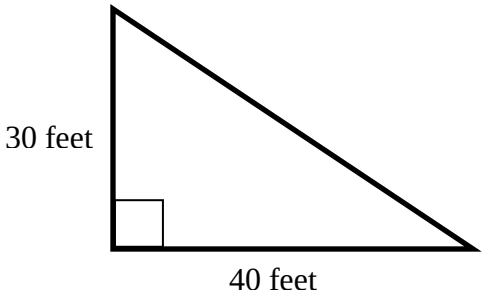
1. Find the **<u>hypotenuse</u>** of the right triangle below.

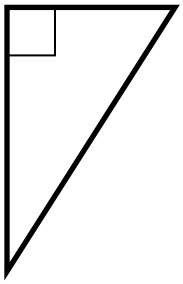


Use the formula.

$$a^2 + b^2 = c^2$$

(1) 25 feet
(2) 35 feet
(3) 45 feet
(4) 50 feet
(5) 55 feet

2. One **<u>leg</u>** of a right triangle measures 10 inches. The other **<u>leg</u>** measures 24 inches. Find the length of the **<u>hypotenuse</u>**.

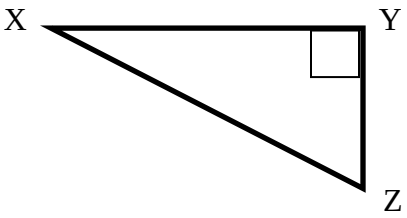


Use the formula.

$$a^2 + b^2 = c^2$$

(1) 22 inches
(2) 26 inches
(3) 30 inches
(4) 36 inches
(5) 40 inches

3. In triangle XYZ, side XY = 12 inches and side YZ = 5 inches. Find the length of **<u>XZ</u>**.

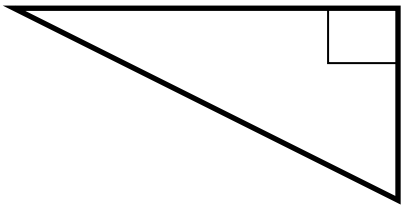


Use the formula.

$$a^2 + b^2 = c^2$$

(1) 13 inches
(2) 14 inches
(3) 15 inches
(4) 16 inches
(5) 17 inches

4. What is the length of the **<u>hypotenuse</u>** of a right triangle whose **<u>legs</u>** measure 12 yards and 16 yards?



Use the formula.

$$a^2 + b^2 = c^2$$

(1) 18 yards
(2) 20 yards
(3) 22 yards
(4) 24 yards
(5) 38 yards

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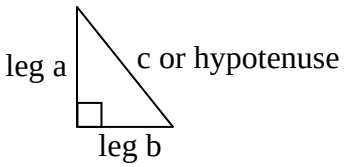
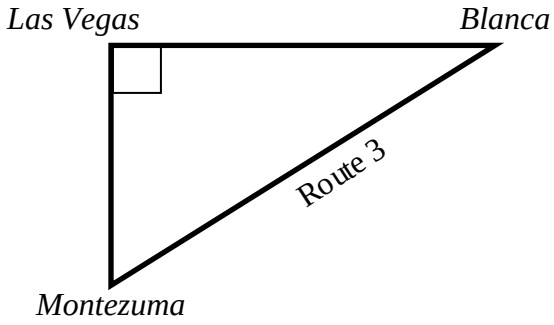


Use this formula when you see the words <u>hypotenuse</u> and <u>legs</u>.

$$a^2 + b^2 = c^2$$

5. Rudy drove 60 miles west from Blanca to Las Vegas then 45 miles south to Montezuma. He returned to Blanca on Route 3. How far is it from Montezuma to Blanca along **Route 3**?

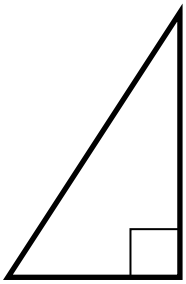


Use the formula.

$$a^2 + b^2 = c^2$$

(1) 55 miles
(2) 65 miles
(3) 70 miles
(4) 75 miles
(5) 83 miles

6. One **<u>leg</u>** of a right triangle measures 18 yards. The **<u>hypotenuse</u>** measures 30 yards. What is the length of the other **<u>leg</u>**?

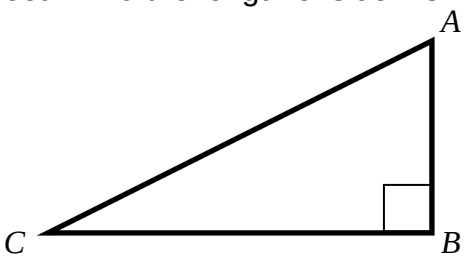


Use the formula.

$$a^2 + b^2 = c^2$$

(1) 10 yards
(2) 12 yards
(3) 24 yards
(4) 43 yards
(5) 50 yards

7. In triangle ABC, AB = 16 feet and AC = 34 feet. Find the length of side BC.

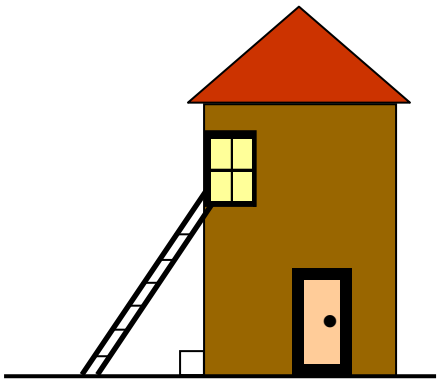


Use the formula.

$$a^2 + b^2 = c^2$$

(1) 20 feet
(2) 25 feet
(3) 30 feet
(4) 32 feet
(5) 40 feet

8. A 17 foot ladder touches the bottom of a window. The bottom of the ladder is 8 feet from the base of the building. Find the distance from the ground to the bottom to the window.



Use the formula.

$$a^2 + b^2 = c^2$$

(1) 12 feet
(2) 15 feet
(3) 18 feet
(4) 20 feet
(5) 25 feet

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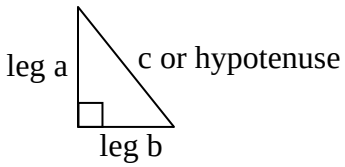

Use this formula when you see the words <u>hypotenuse</u> and <u>legs</u>.

$$a^2 + b^2 = c^2$$

9. Julie drove 48 miles directly north and then 36 miles directly west. Find the shortest distance in miles from the point where she ended to her starting point. Pick a starting point, and draw straight lines. You will have a right triangle.

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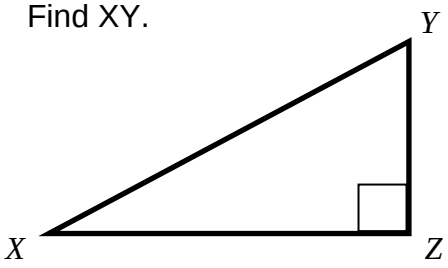
Use the formula.

$$a^2 + b^2 = c^2$$

(1) 24 miles
(2) 36 miles
(3) 48 miles
(4) 60 miles
(5) 72 miles

10. In the triangle below, XZ = 16 centimeters and YZ = 12 centimeters. Find XY.



Use the formula.

$$a^2 + b^2 = c^2$$

(1) 14 centimeters
(2) 18 centimeters
(3) 20 centimeters
(4) 22 centimeters
(5) 24 centimeters

11. On a bike trip Stan rode 15 miles directly west and 36 miles directly south. Find the shortest distance in miles from the point where he started to the point where he ended his trip. Pick a starting point, and draw straight lines. You will have a right triangle.

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Use the formula.

$$a^2 + b^2 = c^2$$

(1) 23 miles
(2) 36 miles
(3) 39 miles
(4) 40 miles
(5) 53 miles

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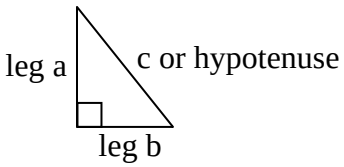
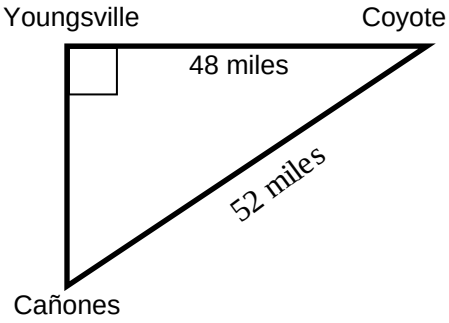


Use this formula when you see the words <u>hypotenuse</u> and <u>legs</u>.

$$a^2 + b^2 = c^2$$

12. Youngsville is directly west of Coyote, and Cañones is directly south of Youngsville. Find the distance from Youngsville to Cañones?

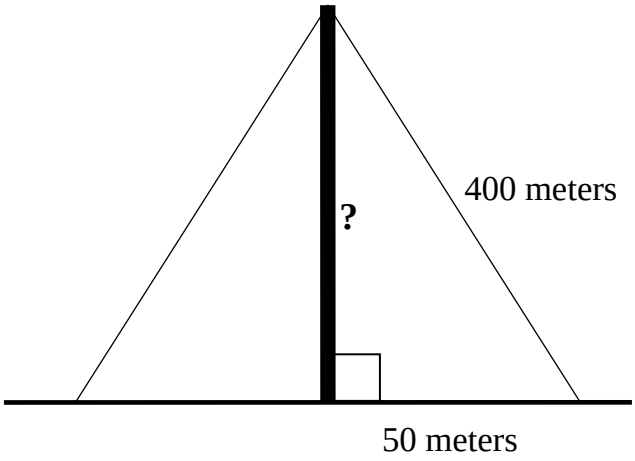


Use the formula.

$$a^2 + b^2 = c^2$$

(1) 15 miles
(2) 20 miles
(3) 35 miles
(4) 45 miles
(5) 55 miles

13. A pole is anchored to the ground with 400 meter cables. About how many meters above the ground is the top of the pole? Round your answer to the nearest whole meter.



Use the formula.

$$a^2 + b^2 = c^2$$

	⊘	⊘	⊘	
⊙	⊙	⊙	⊙	⊙
⓪	⓪	⓪	⓪	⓪
①	①	①	①	①
②	②	②	②	②
③	③	③	③	③
④	④	④	④	④
⑤	⑤	⑤	⑤	⑤
⑥	⑥	⑥	⑥	⑥
⑦	⑦	⑦	⑦	⑦
⑧	⑧	⑧	⑧	⑧
⑨	⑨	⑨	⑨	⑨