

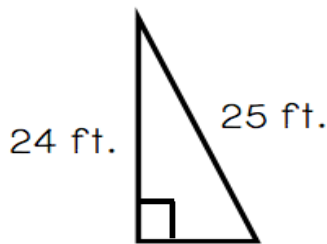
Answer each question, and be sure to show work. Round to the nearest tenth when necessary.

1. A rectangular parking lot has a length of 84 feet and a width of 56 feet. Which of the following could be used to find the diagonal distance across the parking lot?

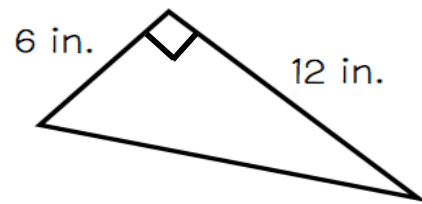
- A. $84^2 - 56^2 = c^2$
- B. $(84 + 56)^2 = c^2$

- C. $84^2 + b^2 = 56^2$
- D. $84^2 + 56^2 = c^2$

2. Find the missing side length of the right triangle below.

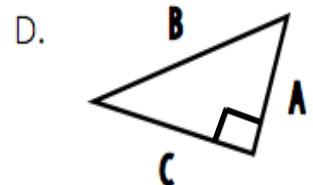
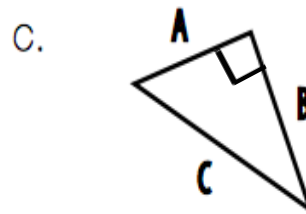
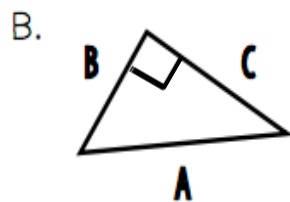
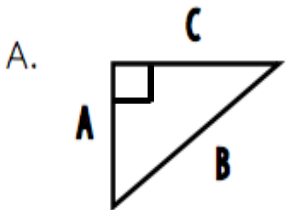


3. Find the missing side length of the right triangle below.



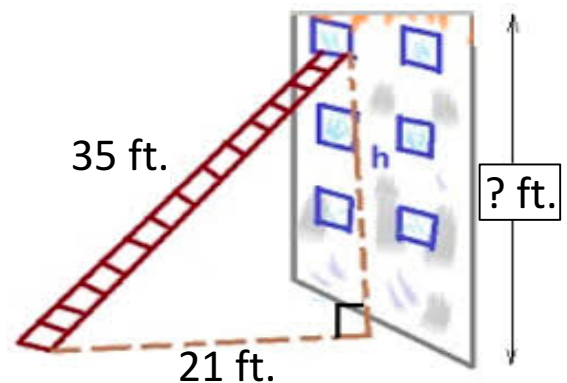
4. Which of the following shows the sides of a right triangle labeled correctly?

Use the Pythagorean Theorem ($a^2 + b^2 = c^2$)



5. Jack has a 35-foot ladder leaning against the side of his house.

If the bottom of the ladder is 21 feet away from his house, how many feet above the ground does the ladder touch the house?



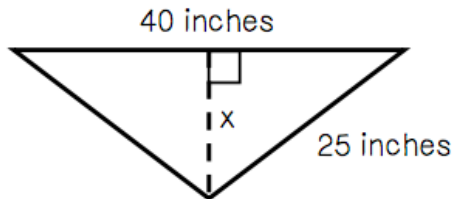
6. Which of the following three sets of lengths could be used to form a right triangle?

- A. 39, 15 and 36
- B. 12, 8 and 4
- C. 13, 17 and 9
- D. None of the above

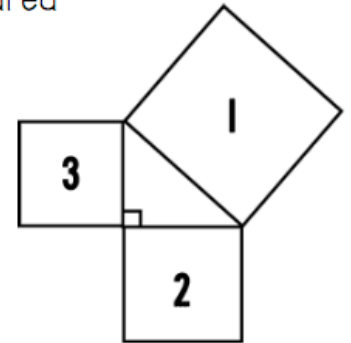
7. Why is it not possible to form a right triangle with the lengths 2, 4 and 7?

- A. Because $4^2 - 2^2 \neq 7^2$
- B. Because $2 + 4 \neq 7$
- C. Because $2^2 + 4^2 \neq 7^2$
- D. Because $2^2 + 7^2 \neq 4^2$

8. Find the value of x in the isosceles triangle.



9. In the figure below, the area of Square 1 is 169 cm^2 and the perimeter of Square 2 is 48 cm. What is the area of Square 3?



10. Andrew is using three pieces of scrap wood to build a wall shelf in his bathroom. The shelf will be shaped like a triangle, and the pieces of scrap wood measure 12 inches, 15 inches and 9 inches long. Will the shelf be shaped like a right triangle? Why or why not?

11. Clay went for a run to prepare for a long distance race coming up. From his house, he ran 6 miles directly north and then 8 miles directly west. From there, he ran the diagonal distance back to his house. How many total miles did Clay run?

12. The four cities on the map below form a square. About how many miles is the most direct route from Washington to Springfield?

