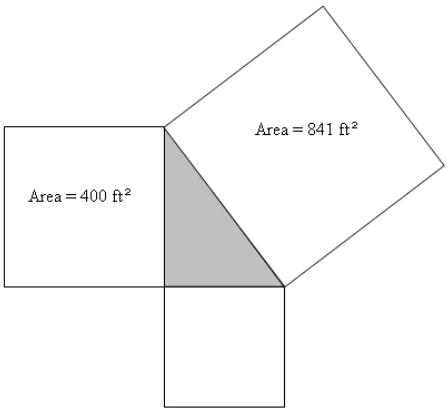
8.G.6 Explain a proof of the Pythagorean Theorem and its converse.

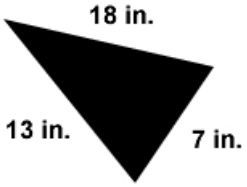
A right triangle is shaded in the diagram. The area of two squares is shown. What is the area of the third square?



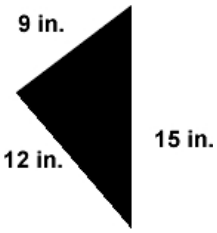
A) 21 ft^2 B) 35 ft^2
C) 441 ft^2 D) 1,241 ft^2

Alyssa is building a birdhouse. She needs a right triangle for the roof. Which triangle below should you use?

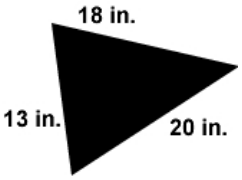
A)



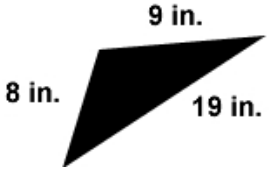
B)



C)

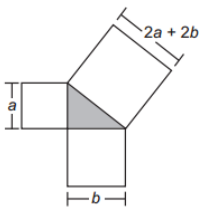


D)

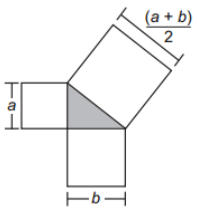


Renee is creating a diagram to prove that a certain triangle is a right triangle. In her diagram she uses three white quadrilaterals that are squares. Which diagram could be the one that Renee is creating?

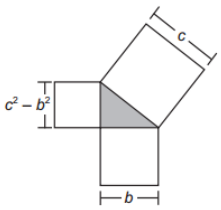
A.



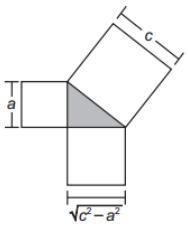
B.



C.



D.



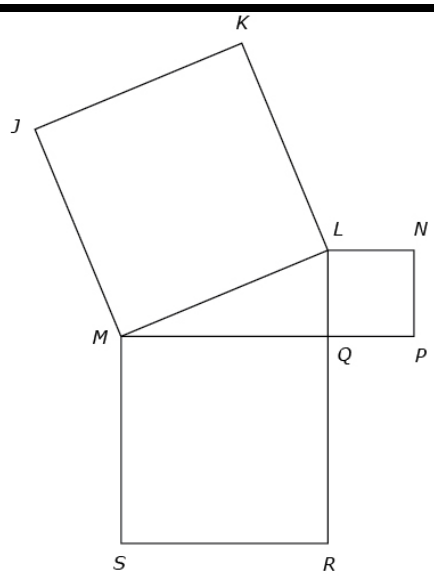
Given the lengths of the sides of a triangle, which of the following is *NOT* a right triangle?

A) 3, 4, 5

B) 5, 12, 13

C) 6, 8, 10

D) 10, 12, 15



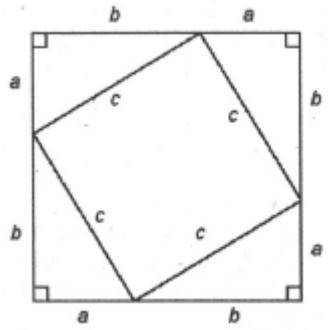
The figure includes squares JKLM, LNPQ, and MQRS, and a right triangle LQM. Square JKLM has an area of 169 square inches. Side MQ has a length of 12 inches and side LQ has a length of 5 inches.

Part A: Find the areas of LNPQ and MQRS. Describe the relationship among the areas of the three squares. How does this support the Pythagorean Theorem?

Part B: Construct a figure similar to the one above that includes three squares making one right triangle. Label the areas of each square and the side lengths of each square. Show your work and explain your answer.

8.G.6 Explain a proof of the Pythagorean Theorem and its converse.

The diagram below is used to prove the Pythagorean Theorem. What expression represents the length of the side of the larger square in the diagram?



(A.) a + b

(B.) a - b

(C.) b - a

(D.) c

Given that a triangle satisfies the Pythagorean Theorem, which statement must be true about the triangle?

(A.) All of the sides are equal.

(B.) The sum of the lengths of the two shorter sides equals the length of the longest side.

(C.) One of the angles of the triangle must be a right angle.

(D.) The triangle is an isosceles triangle

You know the following facts about a triangle:
-It is a right triangle
-The longest side has a length of 10
-One of the other sides has a length of 7

Can you determine the length of the third side?

(A.) Yes, the length of the third side is $10 - 7$
(B.) Yes, the length of the third side is $\sqrt{100 + 49}$
(C.) Yes, the length of the third side is $\sqrt{100 - 49}$
(D.) No, the length of the third side cannot be determined.

Which set of side lengths would not form a right triangle?

A. 3 cm, 5 cm, 6 cm

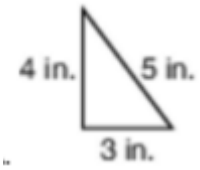
B. 5 cm, 12 cm, 13 cm

C. 6 cm, 8 cm, 10 cm

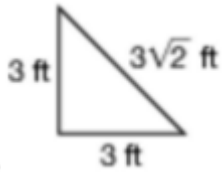
D. 8 cm, 15 cm, 17 cm

Which is not a right triangle?

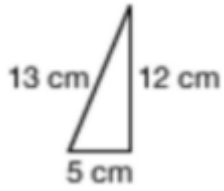
A



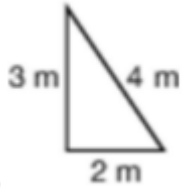
B



C



D



Liam drew a right triangle, triangle DEF, with side lengths of 7 inches, 24 inches, and 25 inches.

A. Use the converse of the Pythagorean Theorem to prove that triangle DEF is a right triangle. Show your work.

B. Use a model to verify the Pythagorean Theorem.