Name: _____   Date: _____

TAKS: What Did He Say?
Pythagorean Theorem
Student Worksheet

Everyone can say $a^2 + b^2 = c^2$ but not everyone can use it to answer questions. What did Pythagorus really say and how can you use a calculator to do the work?

Pythagorus said that similar figures attached to the sides of a right triangle (we use squares because they are easy) have a particular relationship. The sum of the areas of the two smaller ones equals the area of the largest one. Let's see how we can use that understanding to make easy work of questions about right triangles.

11 The drawing below shows three squares joined at their vertices to form a right triangle.

48 ft

35 ft
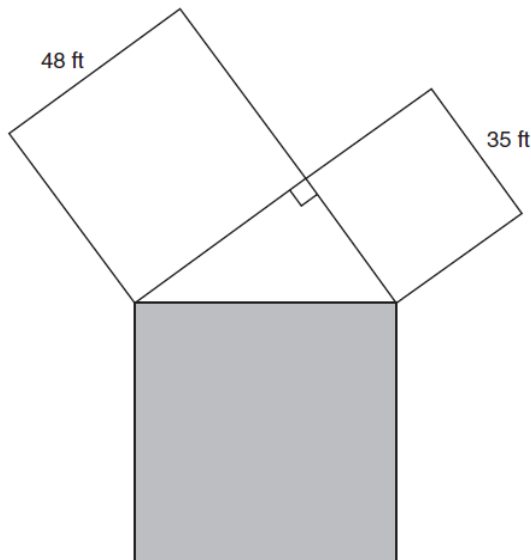
What is the area of the shaded square?

The relationship that is true for right triangles can be found easily using the home screen of the calculator.

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48²+35²
            3529
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The sum of the areas of the two smaller squares is the area of the larger square. Answer choice A is correct.

A   3529 ft ^{2}
B   1079 ft ^{2}
C   6889 ft ^{2}
D   169 ft ^{2}

Look at the question below. What is different about this question from the previous example?

How could you use a similar process to find the missing area?

49 The three squares shown below are joined at their vertices to form a right triangle.

369 cm^2

17 cm
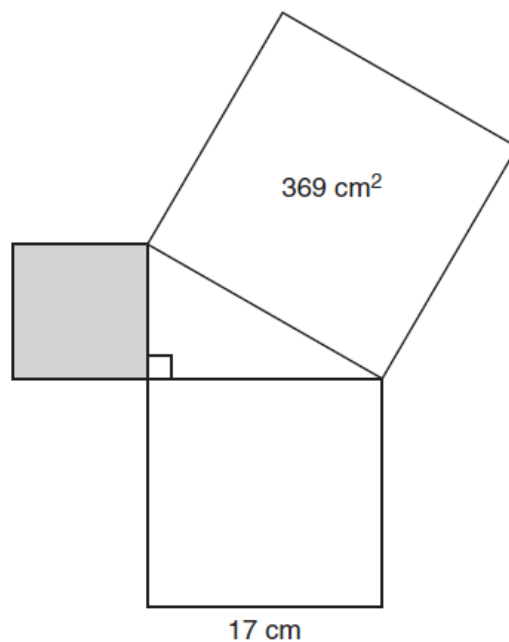
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What is the area of the shaded square?

A 80 cm^2

B 352 cm^2

C 2 cm^2

D 658 cm^2

The question below presents the information somewhat differently. How could you use the same basic strategy on the home screen to find the answer?

32 Which group of squares can be joined at their vertices to form a right triangle?
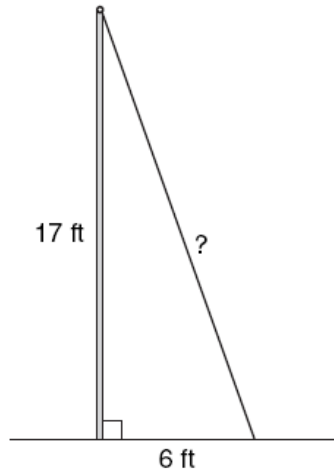
F 4 in.   8.5 in.   7.5 in.

H 3.6 in.   4.5 in.   2.8 in.

G 4.5 in.   8.5 in.   6 in.

J 6 in.   7.5 in.   2.5 in.
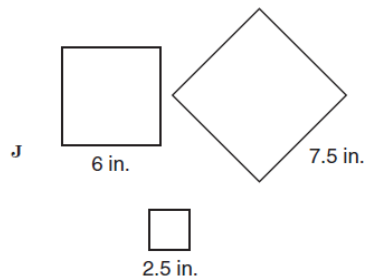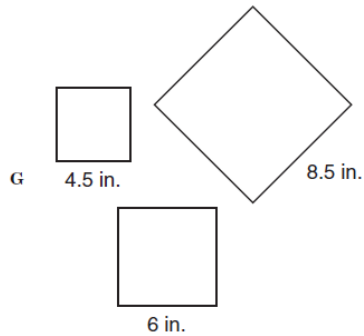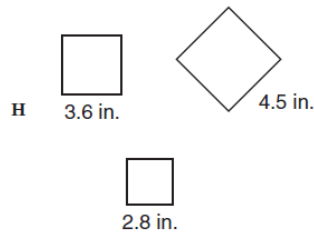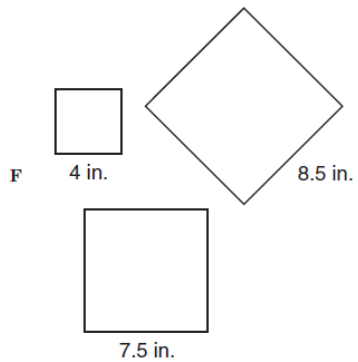
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Use what you have learned about the Pythagorean Theorem to find the length of the support wire.

8 A flagpole that is 17 feet tall is supported by a wire that is anchored 6 feet from the base of the flagpole.

17 ft

?

6 ft

Which best represents the length of the wire?

F 16 feet
G 23 feet
H 18 feet
J 20 feet