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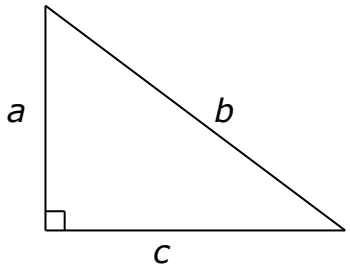
Pythagorean Theorem

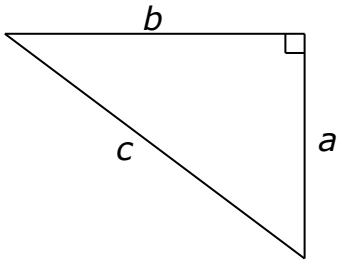
Lesson Quiz

1 Which figure best represents a triangle with sides *a*, *b*, and *c* in which the relationship $a^2 + b^2 = c^2$ is always true?

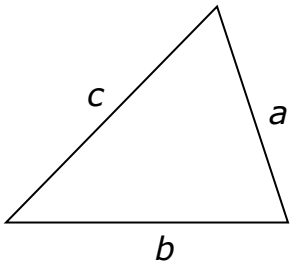
A



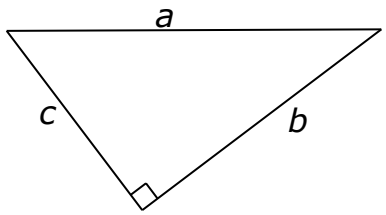
C



B



D



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2 A square tabletop has an area of 36 square feet. What is the length of the diagonal of the tabletop to the nearest tenth of a foot?

A 6.0 ft

B 8.5 ft

C 12.0 ft

D 24.3 ft

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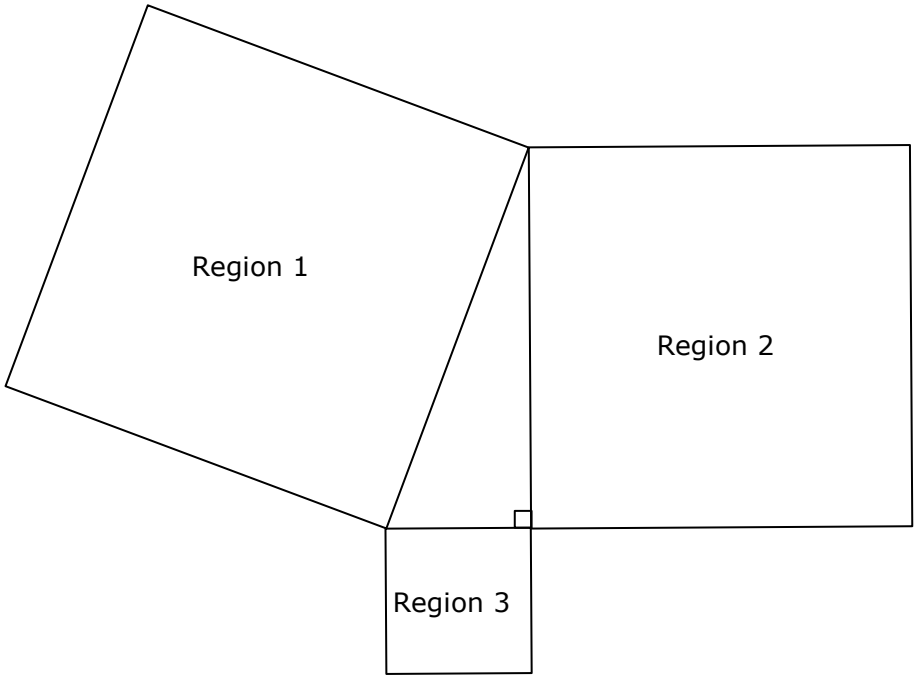
3 A quilter joined three square regions at their vertices to create the figure shown in the diagram.



The quilter will use small congruent fabric squares to cover each region without any gaps or overlaps. Based on the information, which statement is true?

A The number of fabric squares needed to cover Region 2 is the same as the number of fabric squares needed to cover both Region 1 and Region 3.

B The number of fabric squares needed to cover Region 1 is the same as the number of fabric squares needed to cover both Region 2 and Region 3.

C The number of fabric squares needed to cover Region 3 is the same as the number of fabric squares needed to cover both Region 1 and Region 2.

D None of these

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4 A 39-foot ladder leans against a building. The bottom of the ladder is 15 feet from the base of the building. How far up the side of the building does the ladder reach?

A 36 ft

B 27 ft

C 14 ft

D 8 ft

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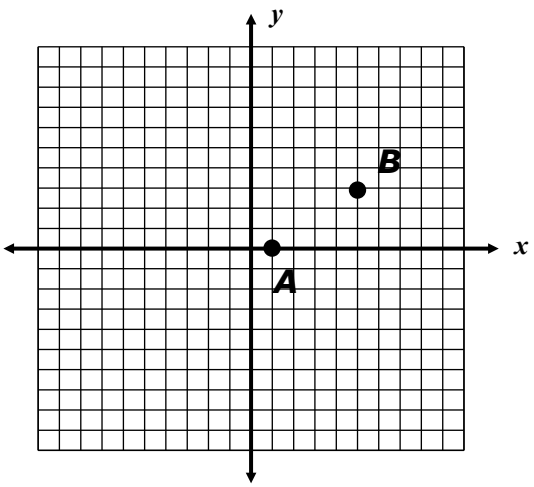
5 Point *B* is located at (5, 3) on a coordinate grid. Point *B* is translated 4 units to the left and 3 units down to create point *A*.



Which measurement is closest to the distance between point *A* and point *B*?

A $\sqrt{11}$ units

B $\sqrt{7}$ units

C 7 units

D 5 units

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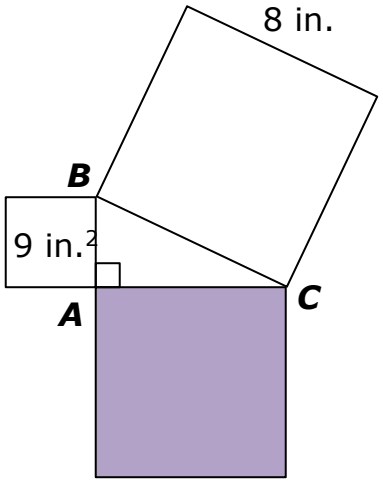
6 Look at the drawing shown below.



If Δ*BAC* is a right triangle formed by the placement of 3 squares, what is the area of the shaded square?

A 73 in.^{2}

B 55 in.^{2}

C 25 in.^{2}

D 17 in.^{2}

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7 Sergio folded the diagonal of a rectangular piece of paper in his art class. The original paper measured 9 inches by 13 inches. What is the approximate length of the diagonal?

A 22 in.

B 15.8 in.

C 15.2 in.

D 9.4 in.

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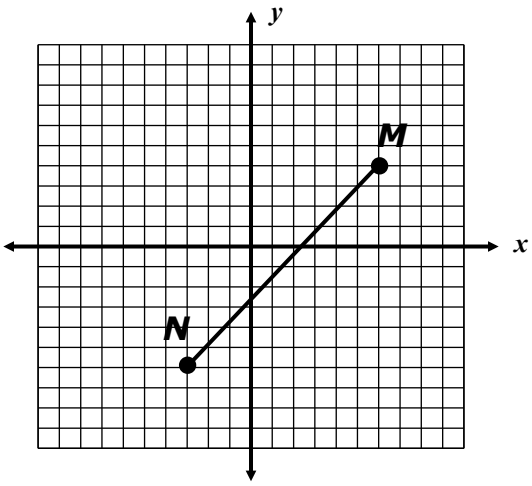
8 What is the length of segment *MN* to the nearest tenth?



A 9.0 units

B 9.5 units

C 13.5 units

D 19.0 units

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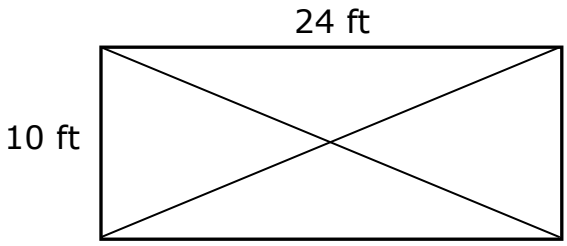
9 Mrs. Johansen wants to divide a rectangular garden into 4 different areas along both diagonals, as shown below.



If she plans to use rope to divide the garden, what is the minimum length of rope Mrs. Johansen will need?

A 26 ft

B 34 ft

C 52 ft

D 68 ft

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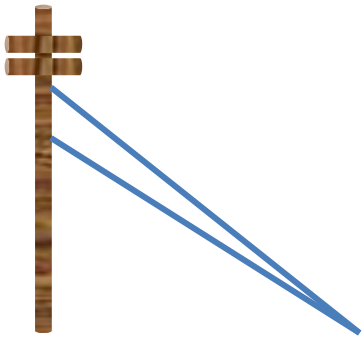
10 A telephone pole is supported by two wires as shown in the diagram.



Both wires attach to the ground 12 feet from the telephone pole. The lower wire attaches to the telephone pole 8 feet above the ground, and the higher wire attaches to the telephone pole 10 feet above the ground. What is the combined length, to the nearest foot, of the two wires?

A 14 ft

B 16 ft

C 21 ft

D 30 ft

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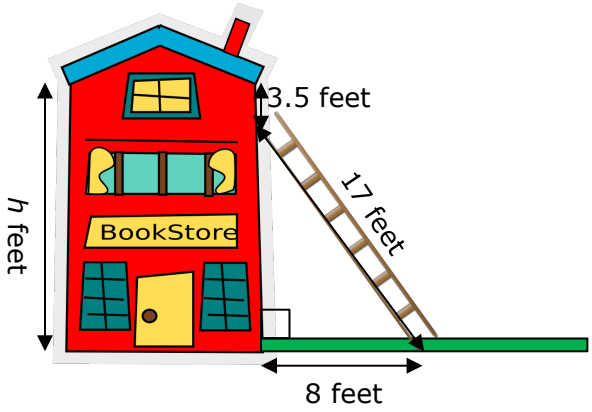
11 A painter placed a 17-foot ladder against a building that needed to be painted. The bottom of the ladder touched the ground 8 feet away from the base of the building. The top of the ladder touches the building 3.5 feet from the top of the building.



What is *h*, the total height of the building, in feet?

Record your answer and fill in the bubbles on your answer document. Be sure to use the correct place value.