Pythagorean Theorem Study Guide **SHOW ALL WORK ON SEPARATE SHEET***

Student _____

1.

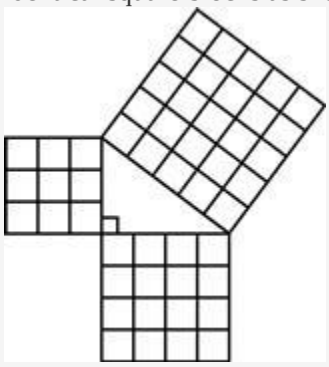
a) What is the formula for Pythagorean Theorem?

_____

b) Determine whether or not each set of numbers is a Pythagorean Triple (Show ALL work).

a. 3, 4, 5
b. 5, 7, 9
c. 6, 8, 10
d. 2, 15, 17

2. A right triangle is formed by squares made up of identical square blocks as shown.



Which statement best describes what the figure shows?

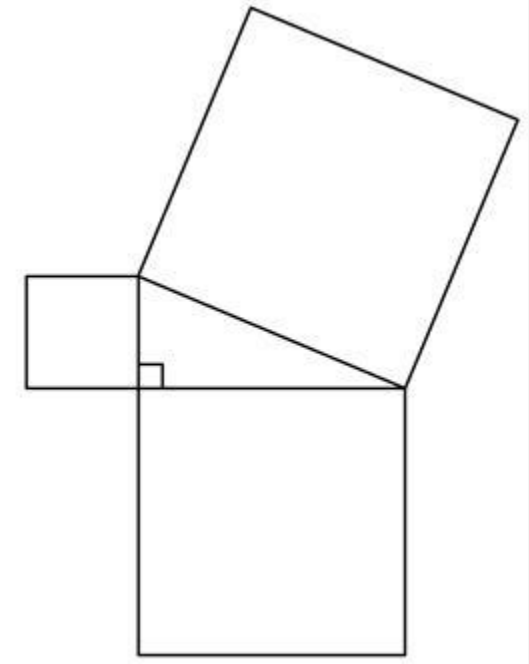
A. Three plus four equals five.

B. Three plus four equals five squared.

C. Three squared plus four squared equals five.

D. Three squared plus four squared equals five squared.

3. Landon draws a right triangle. He then creates three squares, using each side of the triangle as shown.



Which method could Landon use to prove the Pythagorean Theorem?

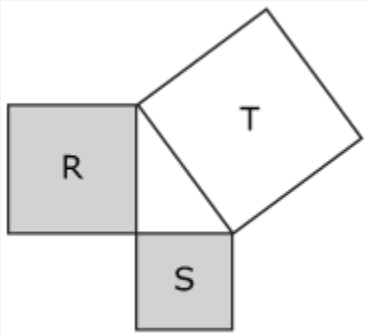
A. prove that the area of the two smaller squares combined is equal to the area of the larger square

B. prove that the perimeter of the two smaller squares combined is equal to the perimeter of the larger square

C. prove that the area of the two smaller squares, combined with the area of the triangle, is equal to the area of the larger square

D. prove that the perimeter of the two smaller squares, combined with the perimeter of the triangle, is equal to the perimeter of the larger square

4. A triangle is formed by arranging squares R, S, and T. The area of square S is 36 square units. The side length of square T is 10 units.



Which statement explains one method to determine if the triangle is a right triangle?

A. Determine if the sum of 10^2 and 6 is equivalent to the area of square R.

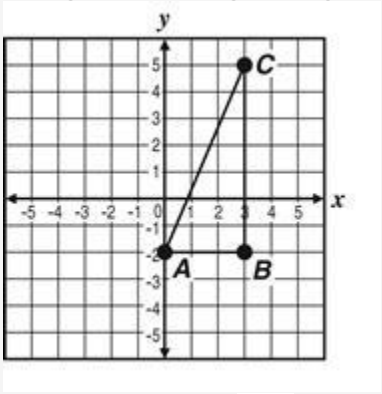
B. Determine if the sum of 10^2 and 36 is equivalent to the area of square R.

C. Determine if the difference between 10^2 and 6 is equivalent to the area of square R.

D. Determine if the difference between 10^2 and 36 is equivalent to the area of square R.

5. What is the length, in units, of the line segment with endpoints at (1, 4) and (3, 7)? Round your answer to the nearest tenth.

6. Triangle *ABC* is a right triangle.



What is the length of $\overline{AC}$?

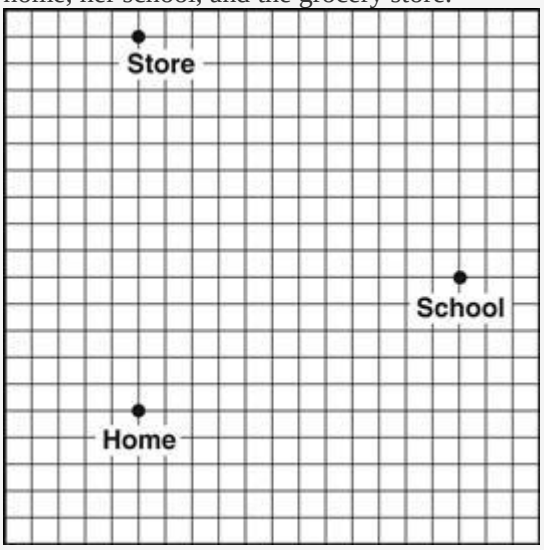
A. $\sqrt{20}$

B. $\sqrt{21}$

C. $\sqrt{40}$

D. $\sqrt{58}$

7. Kati drew this scale map showing the location of her home, her school, and the grocery store.



If the distance from home to school is 1.3 miles, what is the distance, in miles, from her school to the grocery store? Round to the nearest tenth.

8. Leo placed a ladder against the back of his store building to paint a sign. The top of the ladder was 9 feet above the ground and the bottom of the ladder was 3 feet from the base of the building. What is the length, to the nearest tenth of a foot, of the ladder?

9. The lengths of the legs of a right triangle are 6 yards and 8 yards. What is the length, in yards, of the third side of the triangle?

10. Which of the following could be the lengths of the sides of a right triangle?

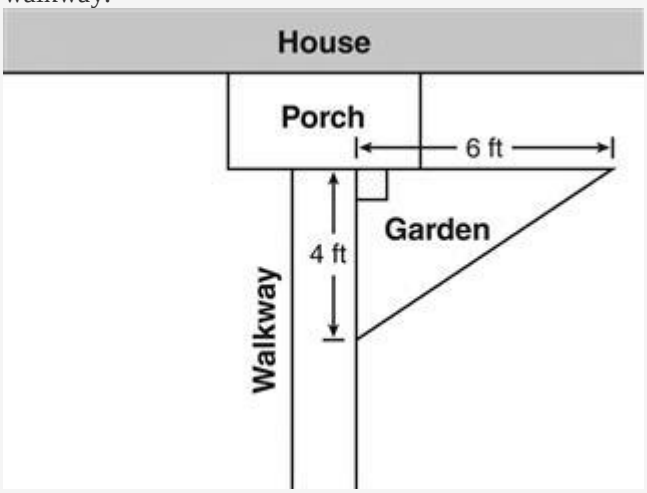
A. 0.9 cm, 0.6 cm, 1.5 cm

B. 0.9 cm, 1.2 cm, 1.5 cm

C. 0.9 cm, 1.2 cm, 1.8 cm

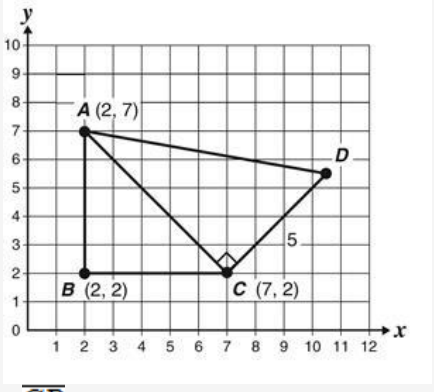
D. 0.9 cm, 1.5 cm, 1.5 cm

11. Gilbert wants to build a triangular flower garden by the front porch of his house. The garden will be 6 feet long near the front of the house and 4 feet long next to the walkway.



What will be closest to the length, in feet, of the longest edge of his garden? Round to the nearest tenth.

12. Polygon *ABCD* is shown on the grid below.



If $\overline{CD}$ has a length of 5 units, what is the length of $\overline{AD}$?

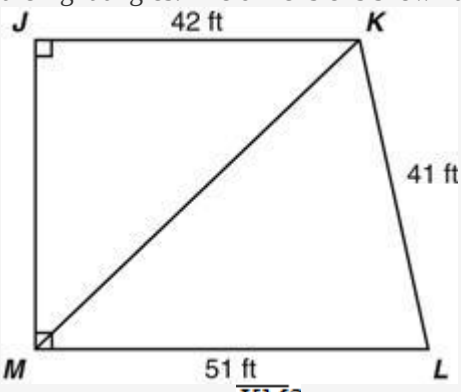
A. 5.0 units

B. $5\sqrt{2}$ units

C. 8.5 units

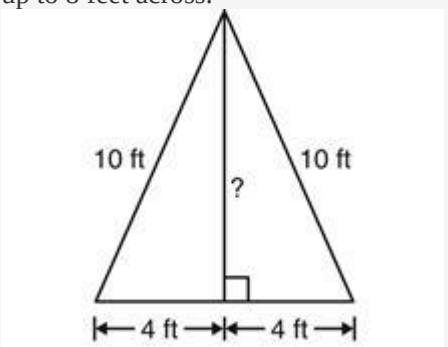
D. $5\sqrt{3}$ units

13. In Quadrilateral *JKLM* below, $\angle KJM$ and $\angle JML$ are right angles. The dimensions shown are in feet.



What is the length of $\overline{KM}$? Round to the nearest foot.

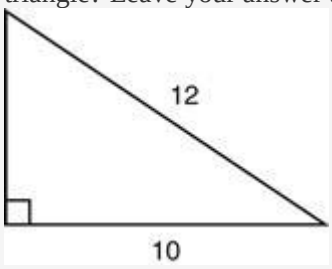
14. A tent has sides that are 10 feet in length and opens up to 8 feet across.



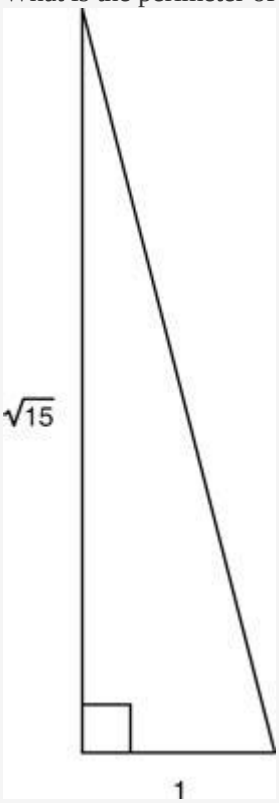
Note: Figure is not drawn to scale.

What is the height of the center support pole in feet? Round to the nearest tenth.

15. What is the length of the unlabeled side of this triangle? Leave your answer as a square root.



16. What is the perimeter of the triangle shown?



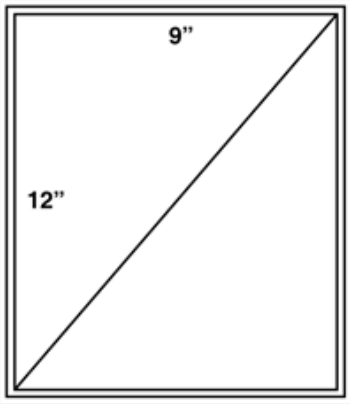
A. $\sqrt{15}$ units

B. $1 + \sqrt{15}$ units

C. $4 + \sqrt{15}$ units

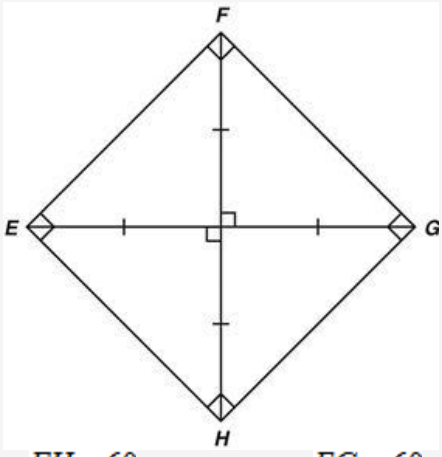
D. $5 + \sqrt{15}$ units

17. A rectangular glass window is divided into two equivalent right triangles by a diagonal brace.



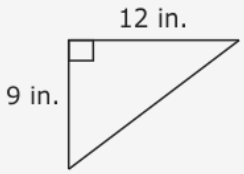
What is the length of the diagonal brace? Round to the nearest inch.

18. Connie and her friends are building a square kite as shown below.



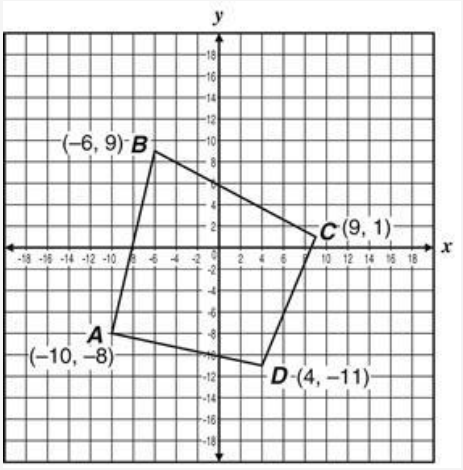
If $FH = 60$ centimeters and $EG = 60$ centimeters, what is the approximate length, in centimeters, of $\overline{EF}$? Round to the nearest centimeter.

19. What is the length of the hypotenuse in the right triangle below?



20. A rectangular reflection pond in a park is 16 feet long. The maintenance crew placed a string of flags 20 feet long across the pond diagonally. What is the width (w) of the pond, to the nearest foot?

21. Quadrilateral *ABCD* is graphed below.



Which line segment has a length of exactly 17 units?