

Grade 8 · The Pythagorean Theorem · Test

Common Core 8.G.B.6, 8.G.B.7 · mathovore.fr

Name: _____ Date: ____/____/____ Score: _____

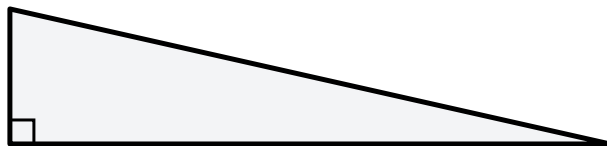
This 45-minute test covers Common Core standards 8.G.B.6 and 8.G.B.7. It has 9 questions worth 20 points in total. Show your work and include units. Calculators are allowed for square roots, but write the equation before using one.

Test information

- **Grade:** Grade 8
- **Chapter:** The Pythagorean Theorem
- **Common Core:** 8.G.B.6, 8.G.B.7
- **Time:** 45 minutes
- **Total:** 20 points (Question 1: 2 pts; Question 2: 2 pts; Question 3: 2 pts; Question 4: 3 pts; Question 5: 2 pts; Question 6: 2 pts; Question 7: 3 pts; Question 8: 2 pts; Question 9: 2 pts)

Question 1: Hypotenuse (2 points)

Find the length of the hypotenuse.



A right triangle.

Question 2: Missing leg (2 points)

A right triangle has a hypotenuse of 26 ft and one leg of 10 ft. Find the length of the other leg.

Question 3: Rounded hypotenuse (2 points)

The legs of a right triangle are 5 in. and 9 in. Find the hypotenuse to the nearest tenth of an inch.

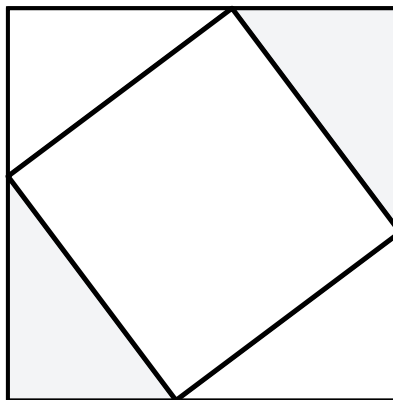
Question 4: Right triangle or not (3 points)

For each set of side lengths, decide whether the triangle is a right triangle. Show your calculation.

- a. 12 in., 35 in., 37 in. (1 point)
- b. 10 in., 24 in., 27 in. (1 point)
- c. 16 in., 30 in., 34 in. (1 point)

Question 5: Area proof (2 points)

A square with side length 7 in. is divided into four congruent right triangles with legs 3 in. and 4 in. and a tilted square in the middle.

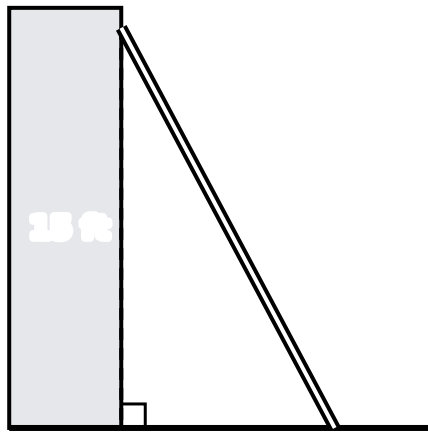


Four triangles and a tilted square.

- a. Find the area of the tilted square. (1 point)
- b. Find the side length of the tilted square. (1 point)

Question 6: Ladder (2 points)

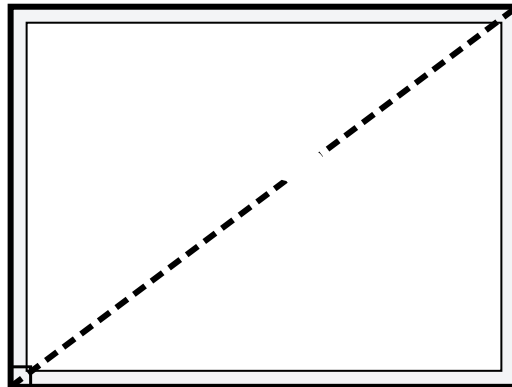
A 17-ft ladder reaches a window that is 15 ft above the ground. How far is the base of the ladder from the wall?



The ladder leans on the wall.

Question 7: TV screen (3 points)

The diagonal of a TV screen measures 50 in. and the screen is 40 in. wide.

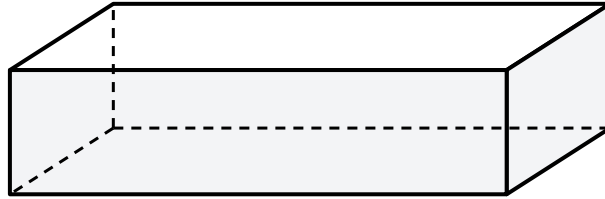


The TV screen.

- Find the height of the screen. (2 points)
- Find the area of the screen. (1 point)

Question 8: Rod in a box (2 points)

A box is 24 in. long, 10 in. wide and 6 in. tall. Can a straight 30-in. rod fit inside the box? Justify your answer.



The box.

Question 9: Cutting across the park (2 points)

A park is a rectangle 120 yd long and 50 yd wide. Aisha runs from one corner to the opposite corner along the diagonal path instead of along two sides. How many yards shorter is the diagonal route?