

Grade 8 - The Pythagorean Theorem - Quiz

Common Core 8.G.B.6, 8.G.B.7 · maths-pdf.fr/en/

Name: _____ Class: _____ Date: ____/____/____

Pick the best answer for each of the 10 questions about the Pythagorean theorem, its converse and applications in two and three dimensions (Common Core 8.G.B.6 and 8.G.B.7). Read each question carefully, then read the explanation to learn from any mistake.

Grade 8 · Common Core State Standards: **8.G.B.6, 8.G.B.7**

Questions

Question 1

A right triangle has legs 9 and 40. What is the hypotenuse?

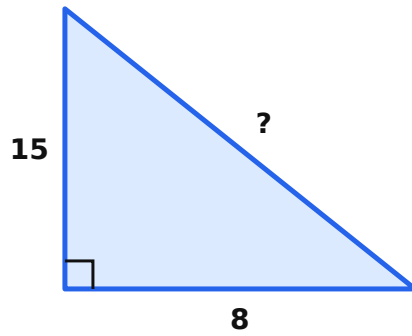
- A. 41
- B. 49
- C. 31
- D. 360

Question 2

A right triangle has hypotenuse 25 and one leg 7. What is the other leg?

- A. 24
- B. 18
- C. 32
- D. 26

Question 3



A right triangle.

What is the hypotenuse?

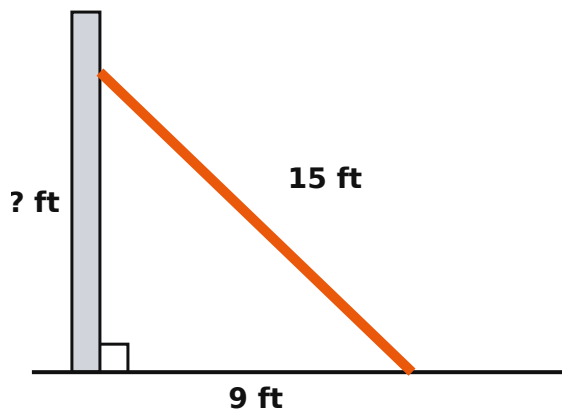
- A. 23
- B. 13
- C. 17
- D. 120

Question 4

Which set of sides forms a right triangle?

- A. 6, 7, 10
- B. 7, 24, 25
- C. 5, 6, 9
- D. 4, 5, 7

Question 5



A ladder leaning on a wall.

How high up the wall does the ladder reach?

- A. 6 ft
- B. 24 ft
- C. 14 ft
- D. 12 ft

Question 6

What is the diagonal of a square with side 5, to the nearest tenth?

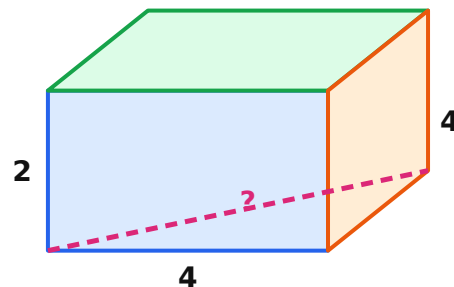
- A. 10
- B. 5
- C. 6.1
- D. 7.1

Question 7

A TV is 16 inches by 12 inches. What is its diagonal?

- A. 20 inches
- B. 28 inches
- C. 14 inches
- D. 400 inches

Question 8



A box.

What is the space diagonal of this box (edges 4, 2 and 4)?

- A. 10
- B. 36
- C. 6
- D. 5.7

Question 9

The Pythagorean theorem is true only for

- A. all triangles
- B. right triangles

- C. isosceles triangles
- D. equilateral triangles

Question 10

A hiker walks 6 miles east and 8 miles north. How far is she from the start in a straight line?

- A. 14 miles
- B. 10 miles
- C. 48 miles
- D. 2 miles

Answers

1. **A** - $81 + 1600 = 1681 = 41^2$. Adding the legs gives the wrong 49.
2. **A** - $625 - 49 = 576 = 24^2$.
3. **C** - $64 + 225 = 289 = 17^2$.
4. **B** - $49 + 576 = 625 = 25^2$.
5. **D** - $15^2 - 9^2 = 225 - 81 = 144$, so 12 ft.
6. **D** - $25 + 25 = 50$ and the square root of 50 is about 7.1.
7. **A** - $256 + 144 = 400$, so the diagonal is 20.
8. **C** - $16 + 4 + 16 = 36$, so the diagonal is 6.
9. **B** - The relation $a^2 + b^2 = c^2$ needs a 90 degree angle.
10. **B** - $36 + 64 = 100$, so 10 miles. Adding the legs gives 14.

Remember

- $a^2 + b^2 = c^2$, where c is the hypotenuse.
- To find a leg: $a^2 = c^2 - b^2$.
- Converse: if $a^2 + b^2 = c^2$, the triangle has a right angle.
- Common triples: 3-4-5, 5-12-13, 8-15-17 and their multiples.
- The theorem works in 3D: the space diagonal satisfies $d^2 = a^2 + b^2 + c^2$.