

Math

Grade 8

Pythagoras' theorem

Find missing sides in right-angled triangles.



I can use $a^2 + b^2 = c^2$ to find a missing side.



1



Complete the table

Fill in the empty boxes.

Side a	Side b	Hypotenuse c
3	4	
6	8	
	12	15
8		17
7	24	

2



Fill the gaps

Write the missing answer.

1. $3^2 + 4^2 =$ _____

2. $\sqrt{49} =$ _____

3. $10^2 - 6^2 =$ _____

4. $\sqrt{(5^2 + 12^2)} =$ _____

3 Pick the answer

Circle the right answer.

1. Which side is the hypotenuse?

☐ A The side opposite the right angle

☐ B The shortest side

☐ C Any side

2. Is a triangle with sides 5, 12 and 13 right-angled?

☐ A No

☐ B Yes

☐ C Only if it is isosceles

4 Squares and roots

Write the missing answer.

1. $6^2 =$ _____

2. $11^2 =$ _____

3. $\sqrt{81} =$ _____

4. $\sqrt{144} =$ _____

5. $\sqrt{(8^2 + 15^2)} =$ _____

6. $13^2 - 12^2 =$ _____

7. $\sqrt{(10^2 - 8^2)} =$ _____

5 Round to one decimal

Find the hypotenuse. Round to 1 decimal.

Side a	Side b	Hypotenuse c
2	3	
4	7	
5	5	

6 True or false

Circle true or false.

1. A triangle with sides 6, 8 and 10 is right-angled.
2. A triangle with sides 4, 5 and 6 is right-angled.
3. The hypotenuse is always the longest side.
4. $a^2 + b^2 = c^2$ works for every triangle.
5. A triangle with sides 9, 40 and 41 is right-angled.

True

False

True

False

True

False

True

False

True

False

7 Real-life triangles

Circle the right answer.

1. A screen is 30 cm wide and 40 cm tall. How long is the diagonal?

A 70 cm **B** 50 cm **C** 45 cm
2. Town A is 6 km east and 8 km north of town B. How far apart are they in a straight line?

A 14 km **B** 12 km **C** 10 km
3. A square has sides of 1 m. About how long is its diagonal?

A 1.41 m **B** 2 m **C** 1 m
4. A 13 m rope goes from the top of a 12 m pole to the ground. How far from the pole is it fixed?

A 1 m **B** 5 m **C** 25 m

8 Think and write

A 5 m ladder leans against a wall with its foot 3 m from the wall. How high up the wall does it reach?
Show your working.

How did it go?



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Math

Grade 8

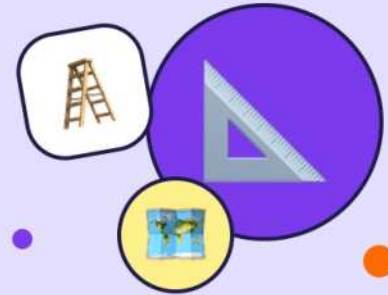
Answer key

Pythagoras' theorem

Find missing sides in right-angled triangles.



I can use $a^2 + b^2 = c^2$ to find a missing side.



1

**Complete the table**

Fill in the empty boxes.

Side a	Side b	Hypotenuse c
3	4	5
6	8	10
9	12	15
8	15	17
7	24	25

2

**Fill the gaps**

Write the missing answer.

1. $3^2 + 4^2 =$ 25

2. $\sqrt{49} =$ 7

3. $10^2 - 6^2 =$ 64

4. $\sqrt{(5^2 + 12^2)} =$ 13

3 Pick the answer

Circle the right answer.

1. Which side is the hypotenuse?

A The side opposite the right angle

B The shortest side

C Any side

2. Is a triangle with sides 5, 12 and 13 right-angled?

A No

B Yes

C Only if it is isosceles

4 Squares and roots

Write the missing answer.

1. $6^2 =$ 36

2. $11^2 =$ 121

3. $\sqrt{81} =$ 9

4. $\sqrt{144} =$ 12

5. $\sqrt{(8^2 + 15^2)} =$ 17

6. $13^2 - 12^2 =$ 25

7. $\sqrt{(10^2 - 8^2)} =$ 6

5 Round to one decimal

Find the hypotenuse. Round to 1 decimal.

Side a	Side b	Hypotenuse c
2	3	3.6
4	7	8.1
5	5	7.1

6 True or false

Circle true or false.

1. A triangle with sides 6, 8 and 10 is right-angled.
2. A triangle with sides 4, 5 and 6 is right-angled.
3. The hypotenuse is always the longest side.
4. $a^2 + b^2 = c^2$ works for every triangle.
5. A triangle with sides 9, 40 and 41 is right-angled.

True

False

True

False

True

False

True

False

True

False

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