Pythagoras theory finding short and long sides

Mana Maths

Te reo Māori terms

ture a Pythagoras
Pythagoras' theorem
Open in Te Aka

tapatoru hāngai
right-angle triangle
Open in Te Aka

koki hāngai
right angle
Open in Te Aka

tāroa
hypotenuse
Open in Te Aka

Pythagoras theory finding short and long sides — Foundation

1. A right-angled triangle has short sides 3 cm and 4 cm. Find the long side.

2. A right-angled triangle has short sides 5 m and 12 m. Find the long side.

3. A right-angled triangle has short sides 6 cm and 8 cm. Find the long side.

4. A right-angled triangle has a long side of 5 cm and one short side of 3 cm. Find the other short side.

5. A right-angled triangle has a long side of 13 m and one short side of 12 m. Find the other short side.

6. A right-angled triangle has a long side of 17 mm and one short side of 8 mm. Find the other short side.

7. A right-angled triangle has short sides 4 cm and 7 cm. Find the long side to 1 decimal place.

8. A right-angled triangle has short sides 4 m and 9 m. Find the long side to 1 decimal place.

9. A right-angled triangle has a long side of 10 cm and one short side of 8 cm. Find the other short side.

10. A right-angled triangle has a long side of 13 cm and one short side of 12 cm. Find the other short side.

11. A right-angled triangle has short sides 9 cm and 12 cm. Find the long side.

12. A right-angled triangle has a long side of 15 m and one short side of 9 m. Find the other short side.

13. A right-angled triangle has short sides 1.2 m and 1.6 m. Find the long side.

14. True or false: in a right-angled triangle, the long side is always opposite the right angle.

Pythagoras theory finding short and long sides — Proficient

1. A right-angled triangle has short sides 9 cm and 12 cm. Find the long side.

2. A right-angled triangle has a long side of 25 cm and one short side of 24 cm. Find the other short side.

3. A right-angled triangle has short sides 7 m and 11 m. Find the long side to 1 decimal place.

4. A right-angled triangle has a long side of 11.7 cm and one short side of 6 cm. Find the other short side to 1 decimal place.

5. One short side is 14 cm and the long side is 20 cm. Find the other short side.

6. The two short sides are 6.5 m and 7.2 m. Find the long side to 1 decimal place.

7. One short side is 10 mm and the long side is 26 mm. Find the other short side.

8. The two short sides are 15 cm and 8 cm. Find the long side.

9. A right-angled triangle has area 24 cm^2 and one short side is 6 cm. Find the other short side, then find the long side.

10. A right-angled triangle has a long side of 17 cm and one short side of 15 cm. Find the other short side and check whether it is a whole number.

11. The long side of a right-angled triangle is 13 m. One short side is 5 m. Find the other short side.

12. The short sides of a right-angled triangle differ by 7 cm. If one short side is 24 cm, find the other short side and then the long side.

Pythagoras theory finding short and long sides — Excellence

1. A right-angled triangle has short sides 9 cm and 40 cm. Find the long side.

2. A right-angled triangle has a long side of 41 cm and one short side of 9 cm. Find the other short side.

3. The short sides are 12 m and 16 m. Find the long side.

4. The long side is 29 m and one short side is 20 m. Find the other short side.

5. The short sides are 7 cm and 24 cm. Find the long side.

6. The long side is 25 cm and one short side is 24 cm. Find the other short side.

7. A right-angled triangle has short sides 2.4 m and 3.2 m. Find the long side.

8. A right-angled triangle has a long side of 10 cm and one short side of 6 cm. Find the other short side.

9. A right-angled triangle has short sides 9 cm and 13 cm. Find the long side to 2 decimal places.

10. A right-angled triangle has a long side of 13 m and one short side of 5 m. Find the other short side to 2 decimal places.

11. A right-angled triangle has perimeter 36 cm. Its short sides are 9 cm and 12 cm. Find the long side and check the perimeter.

12. A right-angled triangle has perimeter 56 cm. The long side is 20 cm and one short side is 16 cm. Find the third side and decide if the perimeter claim is true.

13. The long side of a right-angled triangle is 15 cm. Which could be the missing short side: 8 cm, 9 cm, or 12 cm if the other short side is 9 cm? Explain briefly.

14. A student says $8^2 + 15^2 = 17^2$, so a triangle with sides 8 cm, 15 cm, and 17 cm is right-angled. Is the student correct?

15. A right-angled triangle has one short side 18 cm and the other short side is 6 cm shorter. Find the long side.

16. A right-angled triangle has a long side of 34 cm and one short side of 30 cm. Find the other short side.