



Using Pythagoras

GRADE 8 MATH

Name _____

Date _____

Label the hypotenuse first. Check every leg answer against it.

WORKED EXAMPLE

Hypotenuse missing $\Rightarrow$ add. Leg missing $\Rightarrow$ subtract. Then take the square root. A leg can never be longer than the hypotenuse — check it. For distance, the legs are the differences of the coordinates.

1. Legs 9 and 12. Find the hypotenuse.

FLUENCY

Show your thinking

Answer

2. Hypotenuse 17, one leg 8. Find the other leg.

APPLICATION

Show your thinking

Answer

3. Hypotenuse 10, one leg 6. Find the other leg, then check it against the hypotenuse.

APPLICATION

Show your thinking

Answer

4. Legs 2 and 3. Give the hypotenuse squared, and say why that is the exact answer.

REASONING

Show your thinking

Answer

5. Find the distance between (1, 2) and (5, 5).

APPLICATION

Show your thinking

Answer

6. Find the distance between $(-3, -1)$ and $(1, 2)$.

APPLICATION

Show your thinking

Answer

7. A box measures 3 by 4 by 12. Find the length of the longest straight rod that fits inside.

APPLICATION

Show your thinking

Answer

8. Explain why an answer for a leg that is longer than the hypotenuse must be wrong.

REASONING

Show your thinking

Answer

9. Why does it not matter which point you subtract from which when finding a distance?

REASONING

Show your thinking

Answer