Pythagoras’ theorem to solve problems involving the side lengths of...

use Pythagoras’ theorem to solve problems involving the side lengths of right-angled triangles

Learning intention

- use Pythagoras’ theorem to solve problems involving the side lengths of right-angled triangles

Teach and model

- discussing and comparing different applications, demonstrations and proofs of Pythagoras’ theorem, from Egypt and Mesopotamia, Greece, India and China with...
- using Pythagoras’ theorem to determine unknown lengths of sides in right-angled triangles and finding lengths of sides of right-angled triangles in practical...
- recognising the relationship between the squares of lengths of sides for different types of triangles: right-angled, acute or obtuse

Check understanding

- Explain the main idea in pythagoras’ theorem to solve problems involving the side lengths of... using an example.
- Show the idea in a second way: with words, a model, a diagram or symbols.
- Apply the idea to a short unfamiliar situation and justify the result.

Teaching cautions

- Ask the student to explain their choice, not only state an answer.
- Check that key vocabulary is understood in a new example.
- Mix representations so the skill is transferred rather than copied.

Quick lesson sequence

- Connect to prior knowledge and introduce the key vocabulary.
- Model one clear example, then solve a second example together.
- Finish with an independent check and a short student explanation.