

Solve practical problems applying Pythagoras' theorem and trigonometry of right-angled...

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Learning intention

- solve practical problems applying Pythagoras' theorem and trigonometry of right-angled triangles, including problems involving direction and angles of elevation...

Teach and model

- applying right-angled trigonometry to solve navigation problems involving bearings; for example, determining the bearing and estimating the distance of the final leg of an...
- applying Pythagoras' theorem and trigonometry to problems in surveying and design, where three-dimensional problems are decomposed into two-dimensional...
- using a clinometer to measure angles of inclination, and applying trigonometry, and proportional reasoning to determine the height of buildings in practical contexts

Check understanding

- Explain the main idea in solve practical problems applying pythagoras' theorem and trigonometry of right-angled... 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.