Find the gradient of a line segment, the midpoint of...

find the gradient of a line segment, the midpoint of the line interval and the distance between 2 distinct points on the Cartesian plane

Learning intention

- find the gradient of a line segment, the midpoint of the line interval and the distance between 2 distinct points on the Cartesian plane

Teach and model

- recognising that the gradient of a line is calculated using the gradient of a line segment on that line and is independent of which 2 distinct points on the line are used...
- using digital tools and transformations to illustrate that parallel lines in the Cartesian plane have the same gradient and that the relationship between the gradients of pairs...
- using Pythagoras' theorem to establish the distance between 2 points in the Cartesian plane and applying this using horizontal and vertical distances and coordinates

Check understanding

- Explain the main idea in find the gradient of a line segment, the midpoint 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.