



Congruence through transformations

GRADE 8 MATH

Name _____

Date _____

Squared paper and tracing paper if it helps. One skill: **congruence through transformations**.

WORKED EXAMPLE

Two figures are **congruent** when some sequence of translations, reflections and rotations carries one exactly onto the other. Read the **orientation** first: label the corners and read them round. If the image runs the same way, your sequence needs no reflection; if it runs the other way, it **must** contain one, because slides and turns can never reverse orientation. Then describe the sequence so someone else could carry it out — a reflection needs its **mirror line**, a rotation its **centre and angle**, a translation its **vector**.

1. Triangle ABC has corners (1,1), (4,1), (1,3). Triangle PQR has corners (5,3), (2,3), (5,5). Are they congruent? How do you know?

APPLICATION

Show your thinking

Answer

2. Describe a sequence of rigid motions that carries ABC onto PQR. Give enough detail that someone else could follow it.

REASONING

Show your thinking

Answer

3. ABC's corners run anticlockwise; PQR's run clockwise. What does that tell you about any sequence that works?

REASONING

Show your thinking

Answer

4. Maya says a triangle with sides 6, 8 and 10 cm is congruent to one with sides 3, 4 and 5 cm because they are the same shape. Explain her error.

REASONING

Show your thinking

Answer