

Four-Side Sort

Use line relationships to classify and draw figures.

GRADE 3 • MA.3.GR.1

MA.3.GR.1 "Describe and identify relationships between lines and classify quadrilaterals."

NAME _____

DATE _____

LOOK, DESCRIBE AND EXPLAIN

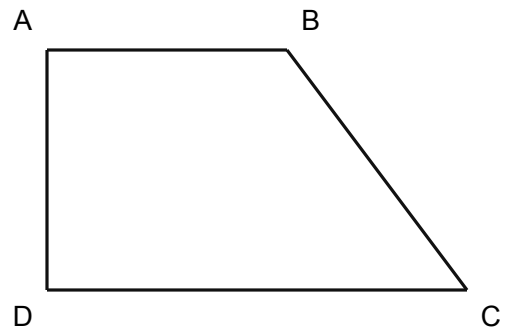
Parallel lines never meet. Perpendicular lines meet at square corners. A quadrilateral is closed with 4 straight sides. A parallelogram has 2 pairs of parallel sides; a rectangle has 4 square corners; a rhombus has 4 equal sides; a square has both. A trapezoid has at least 1 pair of parallel sides, so these categories can overlap.

WORKED EXAMPLE

Find one pair of parallel sides and one pair of perpendicular sides in this trapezoid.

1. AB and CD stay the same distance apart when extended.
2. AB and AD meet at a square corner.

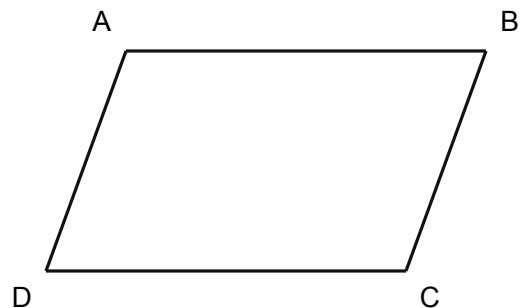
Answer: AB is parallel to CD. AB is perpendicular to AD.



PRACTICE 4 problems

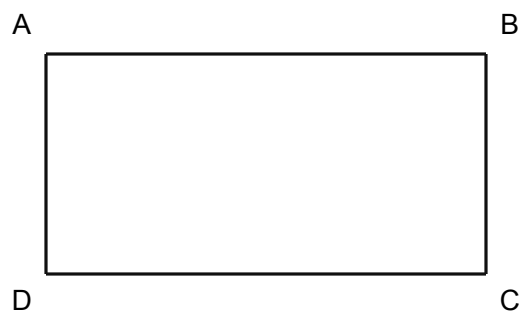
- 1** Name both pairs of parallel sides. Do AB and BC meet? Do they make a square corner?

ANSWER _____



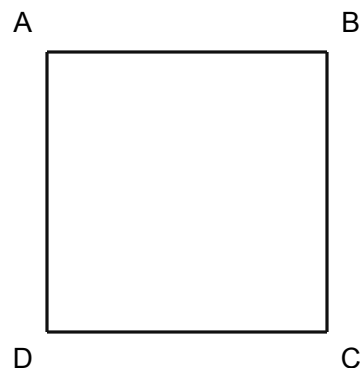
- 2** Name a pair of perpendicular sides in this rectangle. Is it also a parallelogram? Explain.

ANSWER _____



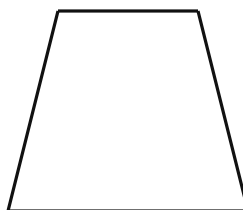
- 3** This square has 4 equal sides. Name all groups it belongs to: rectangle, rhombus, parallelogram, trapezoid. Explain one choice.

ANSWER _____

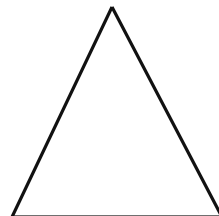


- 4** Which figure is a quadrilateral? Name its parallel sides by position. Is it a trapezoid? Explain why the other figure is not a quadrilateral.

ANSWER _____



A



B

APPLY IT Show your work

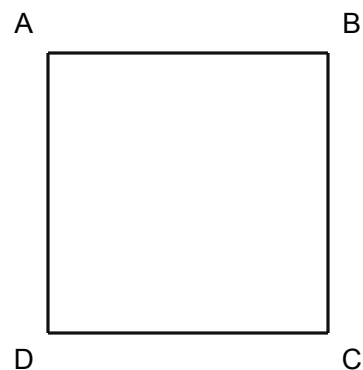
- 1** A tile maker wants a rhombus that is not a rectangle. Draw one. Describe its equal sides and its corners.

- 2** Sketch a straight road as a line with arrows at both ends. Mark point P. Draw a ray from P perpendicular to the road. Add point Q on the road and name the segment between P and Q.

CHALLENGE One step up

Draw all lines of symmetry in this square. How many are there? Explain how one line matches the halves.

WORK SPACE AND ANSWER



Use a straightedge for drawing. Accept reasonable hand-drawn accuracy. Florida uses inclusive trapezoid: at least one pair of parallel sides; a square belongs to all listed quadrilateral groups. Opposite sides can be named in either direction. Perpendicular sides intersect, but not every intersecting pair is perpendicular. A line has arrows at both ends; a ray has one endpoint and one arrow; a segment has two endpoints. This cluster includes MA.3.GR.1.1 (line relationships), MA.3.GR.1.2 (quadrilaterals) and MA.3.GR.1.3 (lines of symmetry). The tile drawing and symmetry key show possible correct responses.

PRACTICE 1

AB and CD; AD and BC. AB and BC intersect but are not perpendicular.

PRACTICE 2

For example, AB and BC. Yes: both pairs of opposite sides are parallel.

PRACTICE 3

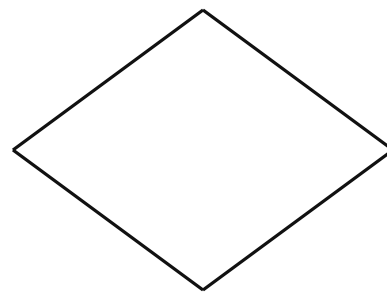
All four groups. It has 4 square corners, 4 equal sides and 2 pairs of parallel sides.

PRACTICE 4

A: its top and bottom sides are parallel, so it is a trapezoid. B has only 3 sides.

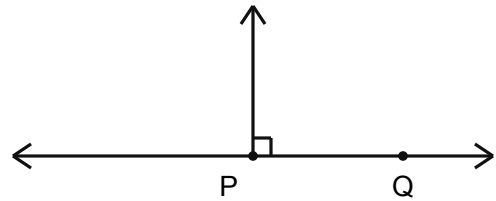
APPLY IT 1

Draw a rhombus with 4 equal sides and no square corners. A slanted diamond like the key is one possible solution. A square would not meet the request.



APPLY IT 2

A road line continues in both directions. A perpendicular ray starts at P and has one arrow. The segment is PQ. Check both line arrows, the ray endpoint and arrow, square corner, points P and Q, and the name PQ.



CHALLENGE

4: vertical, horizontal and both diagonals. Folding on any one matches both halves exactly.

