Parallel Pair Detective

Sort quadrilaterals by their opposite sides.

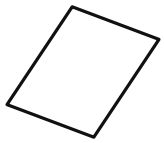
5.GR.B.3.b "Classify quadrilaterals in a hierarchy based on properties (e.g., side lengths, angle measures, presence of parallel or perpendicular sides)."

NAME _____ DATE _____

TWO PARALLEL PAIRS

In a quadrilateral, opposite sides are across from each other. Choose this category when both pairs of opposite sides are parallel.

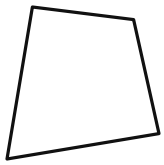
Both pairs of opposite sides are parallel in this example.



FEWER THAN TWO PAIRS

Choose this category when at least one pair of opposite sides is not parallel. The shape may have one parallel pair or none.

This example has no parallel pairs.



1 SORT

8 items

Circle BOTH or FEWER for each figure, then choose two figures and explain how you know where they belong.

1.

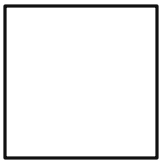


Figure 1

BOTH **FEWER**

2.

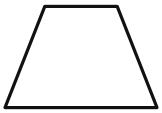


Figure 2

BOTH **FEWER**

3.

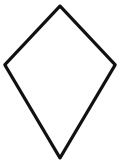


Figure 3

BOTH **FEWER**

4.

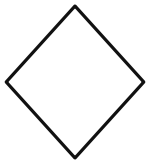


Figure 4

BOTH **FEWER**

5.



Figure 5

BOTH **FEWER**

6.

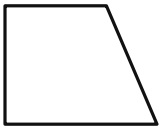


Figure 6

BOTH **FEWER**

7.

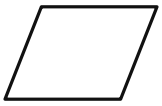


Figure 7

BOTH **FEWER**

8.

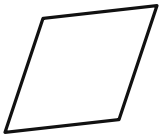


Figure 8

BOTH **FEWER**

2 PROVE IT

Explain your thinking

Pick two items from Part 1. For each one, tell how you knew where it belonged.

ITEM # _____ **HOW I KNEW** _____

ITEM # _____ **HOW I KNEW** _____

3 MAKE YOUR OWN

One of each

Write a description of one new quadrilateral for BOTH and one for FEWER.

BOTH _____

FEWER _____

CHALLENGE

A quadrilateral has four equal sides and no right angles. Can it belong in BOTH? Explain why.

ANSWER KEY

Parallel Pair Detective

GRADE 5 · 5.GR.B.3.b

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (square)	**BOTH**	Both pairs of opposite sides are parallel.
2	Figure 2 (trapezoid)	**FEWER**	Only one pair of opposite sides is parallel.
3	Figure 3 (kite)	**FEWER**	Neither pair of opposite sides is parallel.
4	Figure 4 (rhombus)	**BOTH**	Both pairs of opposite sides are parallel.
5	Figure 5 (rectangle)	**BOTH**	Both pairs of opposite sides are parallel.
6	Figure 6 (right_trapezoid)	**FEWER**	Only one pair of opposite sides is parallel.
7	Figure 7 (parallelogram)	**BOTH**	Both pairs of opposite sides are parallel.
8	Figure 8 (polygon)	**BOTH**	Each pair of opposite sides is parallel.

PART 2 · PROVE IT

Accept any explanation that names the deciding feature from the rule box for the chosen item.

PART 3 · MAKE YOUR OWN (SAMPLE ANSWERS)

- **BOTH**: A slanted quadrilateral has vertices at (10, 10), (50, 20), (70, 60), and (30, 50).
- **FEWER**: A quadrilateral has no parallel sides and four different side lengths.

Challenge: Yes. A rhombus can have four equal sides and no right angles. Both pairs of its opposite sides are parallel.

Accept explanations that identify the parallel or nonparallel pairs of opposite sides. For Part 3, check that each description gives enough information to determine its category.