

Parallel Pair Sort

Sort quadrilaterals by their pairs of parallel sides.

4.MG.5 "The student will classify and describe quadrilaterals (parallelograms, rectangles, squares, rhombi, and/or trapezoids) using specific properties and attributes. Develop definitions for parallelograms, rectangles, squares, rhombi..."

NAME _____

DATE _____

TWO PAIRS OF PARALLEL SIDES

Both pairs of opposite sides are parallel. Parallel sides stay the same distance apart and never meet.

A four-sided window has a parallel top and bottom and parallel left and right sides.

ONE PAIR OF PARALLEL SIDES

Only one pair of opposite sides is parallel. The other two sides are not parallel.

A four-sided banner has a parallel top and bottom, but its two slanted side edges are not parallel.

1 SORT _____ 8 items

Circle the tag for each item, then choose two items, one from each tag, and explain which parallel sides helped you decide.

- | | | |
|--|------------------|-----------------|
| 1. A rectangle | TWO PAIRS | ONE PAIR |
| 2. A square | TWO PAIRS | ONE PAIR |
| 3. A trapezoid with exactly one pair of parallel sides | TWO PAIRS | ONE PAIR |
| 4. A rhombus | TWO PAIRS | ONE PAIR |
| 5. Quadrilateral ABCD: segment AB $\parallel$ segment CD, and segment BC $\parallel$ segment AD | TWO PAIRS | ONE PAIR |
| 6. Quadrilateral EFGH: segment EF $\parallel$ segment GH, but segment FG is not parallel to segment EH | TWO PAIRS | ONE PAIR |
| 7. A parallelogram | TWO PAIRS | ONE PAIR |
| 8. Quadrilateral JKLM: segment JK $\parallel$ segment LM only | TWO PAIRS | ONE PAIR |

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 one new example for TWO PAIRS and one new example for ONE PAIR.

TWO PAIRS _____

ONE PAIR _____

CHALLENGE

Draw a quadrilateral in ONE PAIR. Label its vertices A, B, C, and D in order. Use matching arrow marks to show its parallel segments, then name the parallel segments using $\parallel$.

PART 1 • SORT

#	ITEM	CATEGORY	WHY
1	A rectangle	TWO PAIRS	A rectangle has two pairs of opposite parallel sides.
2	A square	TWO PAIRS	A square has two pairs of opposite parallel sides.
3	A trapezoid with exactly one pair of parallel sides	ONE PAIR	It is stated to have exactly one parallel pair.
4	A rhombus	TWO PAIRS	A rhombus has two pairs of opposite parallel sides.
5	Quadrilateral ABCD: segment AB $\parallel$ segment CD, and segment BC $\parallel$ segment AD	TWO PAIRS	Both pairs of opposite sides are parallel.
6	Quadrilateral EFGH: segment EF $\parallel$ segment GH, but segment FG is not parallel to segment EH	ONE PAIR	Only EF and GH form a parallel pair.
7	A parallelogram	TWO PAIRS	A parallelogram has two pairs of opposite parallel sides.
8	Quadrilateral JKLM: segment JK $\parallel$ segment LM only	ONE PAIR	The word only shows there is one parallel pair.

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)

- **TWO PAIRS:** Quadrilateral WXYZ has segment WX $\parallel$ segment YZ and segment XY $\parallel$ segment WZ.
- **ONE PAIR:** Quadrilateral KLMN has segment KL $\parallel$ segment MN only.

Challenge: A trapezoid ABCD with matching arrow marks on segments AB and CD. Segment AB $\parallel$ segment CD.

For Part 2, students should name the parallel-side evidence for each selected item. In the challenge, accept any correctly drawn quadrilateral with exactly one pair of parallel sides and accurate matching arrow marks.