Parallel Side Search

Sort polygons by their parallel side pairs.

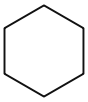
5.GSR.8.1 "Classify, compare, and contrast polygons based on properties."

NAME _____ DATE _____

HAS PARALLEL SIDES

This polygon has at least one pair of sides that stay the same distance apart and never meet, even if the sides are extended.

A regular hexagon has three pairs of parallel sides.



NO PARALLEL PAIRS

This polygon has no pair of sides that stay the same distance apart and never meet.

An obtuse triangle has no parallel side pairs.



1 SORT

8 items

Circle PARALLEL or NO PAIRS for each figure, then choose two figures and explain which sides helped you decide.

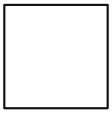
1. 

Figure 1

PARALLEL NO PAIRS

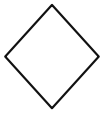
2. 

Figure 2

PARALLEL NO PAIRS

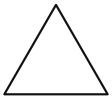
3. 

Figure 3

PARALLEL NO PAIRS

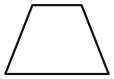
4. 

Figure 4

PARALLEL NO PAIRS

5. 

Figure 5

PARALLEL NO PAIRS

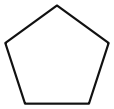
6. 

Figure 6

PARALLEL NO PAIRS

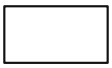
7. 

Figure 7

PARALLEL NO PAIRS

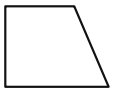
8. 

Figure 8

PARALLEL NO PAIRS

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 polygon example for each category: one with parallel sides and one with no parallel side pairs.

PARALLEL _____

NO PAIRS _____

CHALLENGE

Draw a quadrilateral with exactly one pair of parallel sides, and mark the parallel pair.

ANSWER KEY

Parallel Side Search

GRADE 5 · 5.GSR.8.1

PART 1 · SORT

#	ITEM	CATEGORY	WHY
1	Figure 1 (square)	**PARALLEL**	A square has two pairs of opposite sides that are parallel.
2	Figure 2 (rhombus)	**PARALLEL**	A rhombus has two pairs of opposite sides that are parallel.
3	Figure 3 (equilateral)	**NO PAIRS**	No two sides of a triangle are parallel.
4	Figure 4 (trapezoid)	**PARALLEL**	A trapezoid has one pair of parallel sides.
5	Figure 5 (isosceles)	**NO PAIRS**	No two sides of a triangle are parallel.
6	Figure 6 (pentagon)	**NO PAIRS**	The regular pentagon shown has no parallel side pairs.
7	Figure 7 (rectangle)	**PARALLEL**	A rectangle has two pairs of opposite sides that are parallel.
8	Figure 8 (right_trapezoid)	**PARALLEL**	A right trapezoid has one pair of parallel sides.

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)

- **PARALLEL**: A regular octagon has pairs of parallel sides.
- **NO PAIRS**: A scalene triangle has no parallel side pairs.

Challenge: A quadrilateral with only its top and bottom sides marked parallel.

For Part 2, accept explanations that correctly identify whether a figure has a pair of sides that would stay the same distance apart if extended. In the challenge, the student should draw a quadrilateral with one, and only one, pair of parallel sides.