

Shape Family Sort

Find the figures in the parallelogram family.

GRADE 5 • 5.G.B.4

CCSS.Math.Content.5.G.B.4 "Classify two-dimensional figures in a hierarchy based on properties."

NAME _____

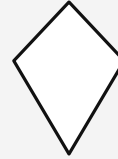
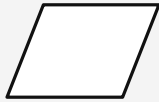
DATE _____

SHAPE FAMILIES

A quadrilateral has four sides. A parallelogram is a quadrilateral with two pairs of parallel opposite sides. A rectangle is a parallelogram with four right angles. A rhombus is a parallelogram with four equal sides. A square is both a rectangle and a rhombus.

WORKED EXAMPLE

Which figure is a parallelogram? Are both figures quadrilaterals?

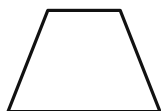
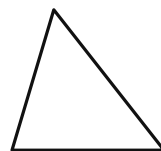
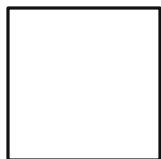
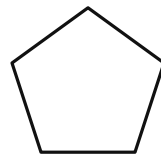
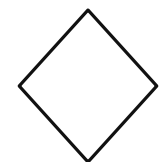


1. It has four sides and two pairs of parallel opposite sides.
2. So it is both a parallelogram and a quadrilateral.
3. The kite beside it has four sides but not two pairs of parallel opposite sides.

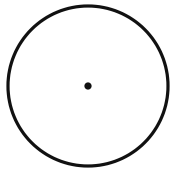
Answer: The first figure is a parallelogram (YES); the kite is not (NO). Both are quadrilaterals.

PRACTICE 8 problems

For each figure, write YES if it is a parallelogram or NO if it is not. In Apply It 1, explain two of your choices using properties.

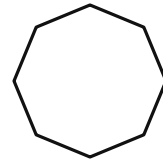
1 Figure 1: parallelogram, YES or NO?**ANSWER** _____**2** Figure 2: parallelogram, YES or NO?**ANSWER** _____**3** Figure 3: parallelogram, YES or NO?**ANSWER** _____**4** Figure 4: parallelogram, YES or NO?**ANSWER** _____**5** Figure 5: parallelogram, YES or NO?**ANSWER** _____**6** Figure 6: parallelogram, YES or NO?**ANSWER** _____

7 Figure 7: parallelogram, YES or NO?



ANSWER _____

8 Figure 8: parallelogram, YES or NO?



ANSWER _____

APPLY IT Show your work

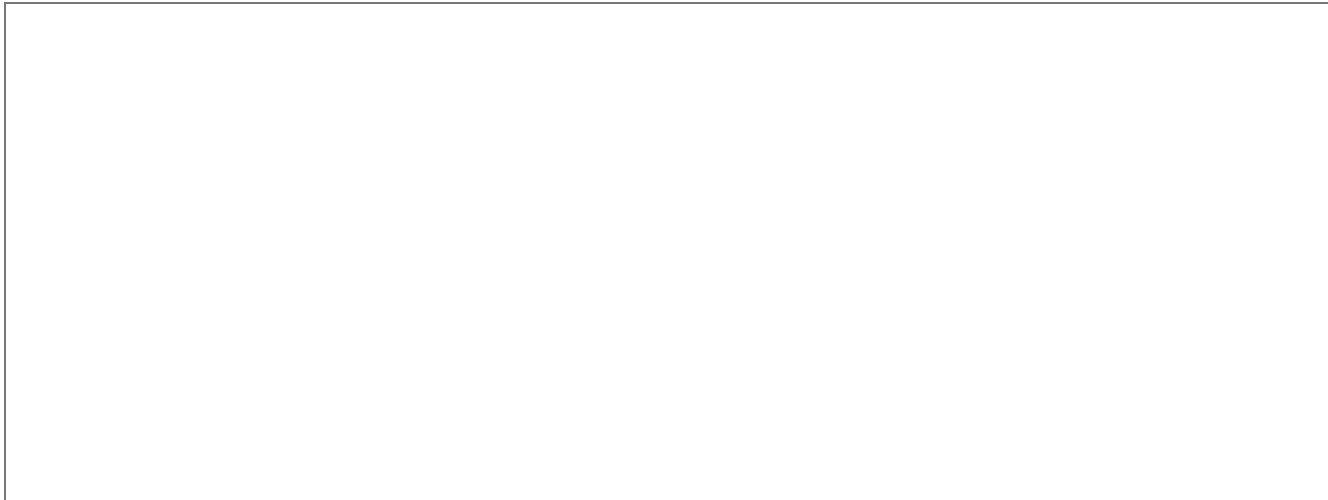
1 Choose two practice figures and justify each YES/NO answer using properties. Then complete the family chain for a square: square is a rectangle, rectangle is a _____, and that group is a _____.

2 Draw one parallelogram that is not a rectangle, and one quadrilateral that is not a parallelogram. Label each drawing and name the property that separates them.

ANSWER _____

CHALLENGE One step up

Draw a square. List all four of these families it belongs to: quadrilateral, parallelogram, rectangle, rhombus. Explain why a square belongs to BOTH the rectangle and rhombus families.



PRACTICE 1

NO. The shown trapezoid has exactly one pair of parallel sides.

PRACTICE 2

NO. A triangle has three sides, not four.

PRACTICE 3

YES. A square has two pairs of opposite parallel sides.

PRACTICE 4

NO. A pentagon has five sides, not four.

PRACTICE 5

YES. A rectangle has two pairs of opposite parallel sides.

PRACTICE 6

YES. A rhombus has two pairs of opposite parallel sides.

PRACTICE 7

NO. A circle has no sides.

PRACTICE 8

NO. An octagon has eight sides, not four.

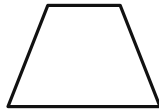
APPLY IT 1

Explanations must identify defining properties. Family chain: parallelogram; quadrilateral. For example, Figure 3 is YES because it has two pairs of opposite parallel sides; Figure 2 is NO because it has only three sides.

APPLY IT 2

Example: a slanted parallelogram with two pairs of parallel opposite sides, and the shown type of trapezoid with exactly one pair.

Check four sides in both drawings and the number of parallel opposite-side pairs.



CHALLENGE

All four families. A square is a rectangle because it has four right angles; it is a rhombus because it has four equal sides.

Practice answers: NO, NO, YES, NO, YES, YES, NO, NO. Classify the actual figures. The trapezoid in Figure 1 has exactly one parallel pair; the answer does not impose an inclusive or exclusive definition on every trapezoid. Accept rotations. A square is both a rectangle and a rhombus, within parallelograms and quadrilaterals.

