

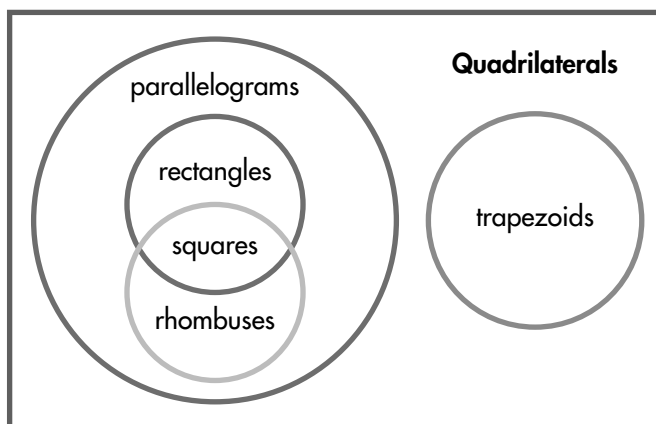
Additional Practice 16-3

Continue to Classify Quadrilaterals

Another Look!

You can use a Venn diagram to classify quadrilaterals and understand their relationships.

All squares are rectangles.
All squares are rhombuses.
All rectangles are parallelograms.
All rhombuses are parallelograms.
All parallelograms are quadrilaterals.
All trapezoids are quadrilaterals.



In 1–4, write whether each statement is true or false. If false, explain why.

- All trapezoids are parallelograms.
False; the trapezoid circle is outside of the parallelogram circle.
- Every trapezoid is a rectangle.
False; a rectangle is a parallelogram, but a trapezoid is not.
- Squares are special parallelograms.
True
- All quadrilaterals are squares.
False; a trapezoid is not a square.
- The figure shown below is an isosceles trapezoid. The two sides that are not parallel have the same length. How could you add this shape to the Venn diagram?
- Why is a parallelogram not the same type of quadrilateral as a trapezoid? Explain how you know.



Sample answer: Draw a circle inside the trapezoid circle. Label it isosceles trapezoid.

A parallelogram is a quadrilateral with two pairs of equal parallel sides, and a trapezoid has one pair of parallel sides.

Look at the relationships in the Venn diagram to help you answer.



- 7. Construct Arguments** Harriet says that it is not possible to draw a quadrilateral that is not a trapezoid and not a parallelogram. Is Harriet correct? Explain why or why not.

Harriet is not correct. She can draw a quadrilateral with no parallel sides.



What do you know about trapezoids and parallelograms that can help you?

- 8.** The table shows Henry's savings over several weeks. If the pattern continues, what will Henry's savings be in Week 10? Tell how you know.

Week	Savings
0	\$6.50
1	\$7.50
2	\$8.50
3	\$9.50

\$16.50; The amount of savings increases by \$1 each week.

- 9. Algebra** Sharona is planning a cookout for 42 people. Each guest will get 1 veggie burger. Sharona will put 1 slice of cheese on half of the burgers. Cheese slices come in packs of 8. Write and solve an equation to find the number of packs of cheese, p , that Sharona needs to buy.

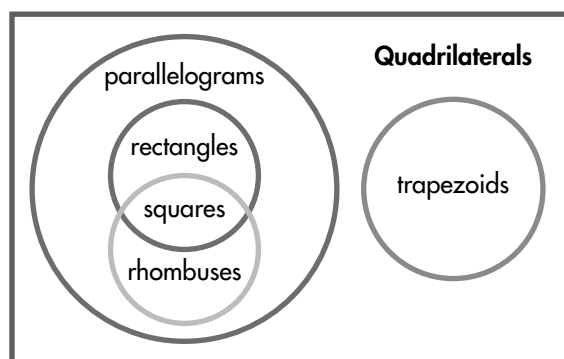
**Sharona needs to buy 3 packs of cheese; $p = (42 \div 2) \div 8$;
 $p = 21 \div 8$ or $2\frac{5}{8}$**

- 10. Higher Order Thinking** Suppose a trapezoid is defined as a quadrilateral with at least one pair of parallel sides. How would the quadrilateral Venn diagram change?

Sample answer: At least one pair of parallel sides means the trapezoid could have two pairs of parallel sides. Because a parallelogram always has two pairs of parallel sides, a parallelogram would be a special trapezoid.

Assessment Practice

- 11.** Below is the Venn diagram of quadrilaterals.



Part A

Are squares also rectangles? Explain.

Yes; Sample answer: Squares have 4 right angles, so squares are also rectangles. In the Venn diagram, squares are also in the circle for rectangles.

Part B

What are all of the names that describe a square?

Square, rectangle, rhombus, parallelogram, quadrilateral