Edgenuity®

Warm-Up | Classifying Quadrilaterals

Lesson Question

Lesson Goals

Examine [   ].

Classify quadrilaterals and the [   ] among them.

Describe objects using properties of [   ].

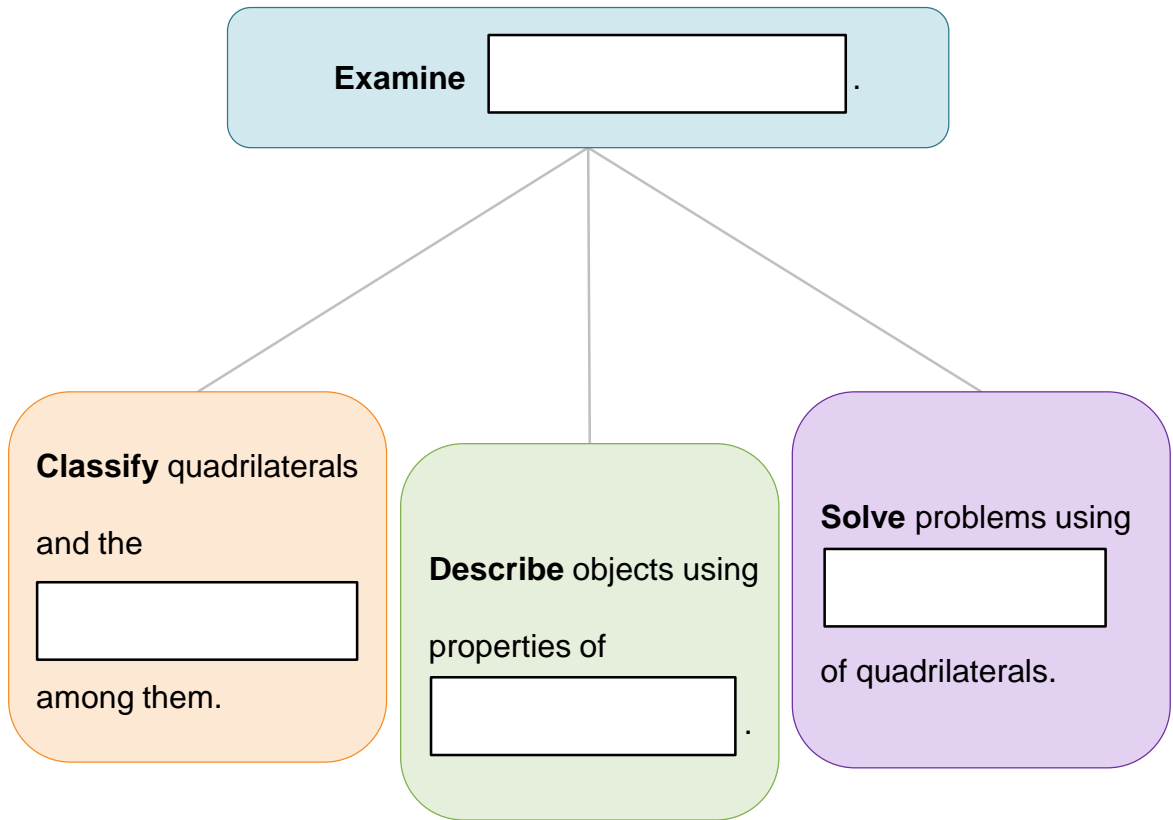**Solve** problems using [   ] of quadrilaterals.

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W2K

Words to Know

Fill in this table as you work through the lesson. You may also use the glossary to help you.

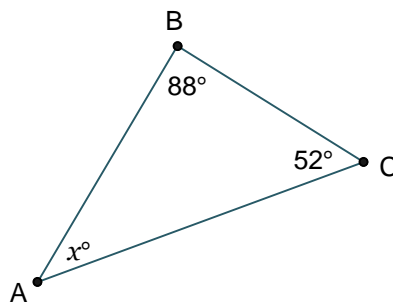|	
kite	a [＿＿＿＿] whose two pairs of adjacent sides are congruent and whose opposite sides are not [＿＿＿＿]
parallelogram	a quadrilateral in which both [＿＿] of opposite sides are [＿＿＿]
polygon	in a plane, a closed figure formed from three or more line [＿＿＿＿] such that each segment intersects exactly two other segments, one at each [＿＿＿＿], and no segments with a common endpoint are collinear
quadrilateral	a polygon with [＿＿] sides
rhombus	a [＿＿＿＿] with four congruent [＿＿＿]
trapezoid	a quadrilateral with exactly [＿＿] pair of parallel [＿＿＿] sides

Warm-Up | Classifying Quadrilaterals

Reviewing Triangles

- A triangle is a polygon with [ ] sides.

- The sum of the angle measures of a [ ] is 180°.

$$88 + 52 + x = 180$$

$$140 + x = 180$$

$$x = \boxed{}$$

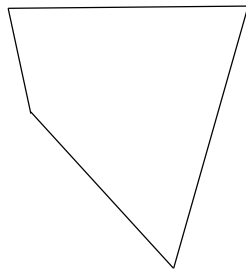# Instruction | Classifying Quadrilaterals

Quadrilaterals

A **quadrilateral** is a polygon with ▭ sides.
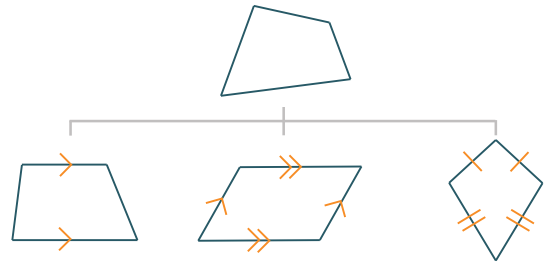
Classifying Quadrilaterals

- **Trapezoid** – a quadrilateral with ▭ one pair of parallel opposite sides

- **Parallelogram** – a quadrilateral in which both pairs of opposite sides are ▭

- **Kite** – a quadrilateral whose two pairs of ▭ sides are congruent and whose opposite sides are ▭ congruent

Instruction | Classifying Quadrilaterals
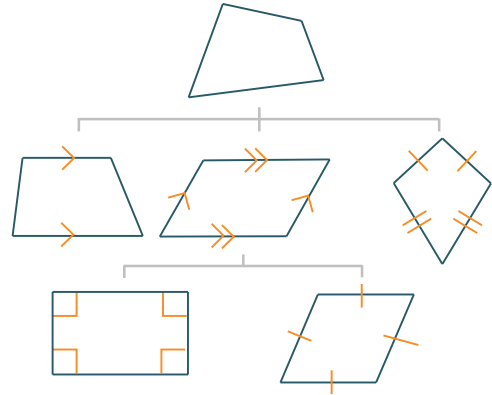
Classifying Quadrilaterals

Rectangle – a ⬚ with four right angles

Rhombus – a parallelogram with four ⬚ sides

SQUARE

Square – a parallelogram with four ⬚ angles and four ⬚ sides

**Instruction** | Classifying Quadrilaterals
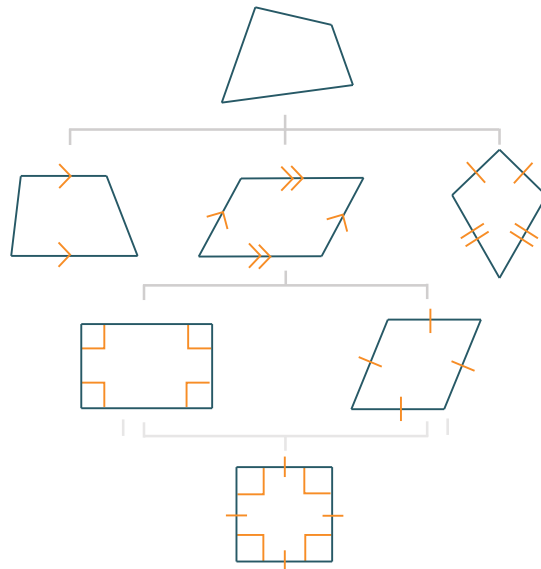
Solving a Real-World Problem

Selma wants to build a garden shaped like a kite. She has logs for the edging. Three logs measure 6 ft, one measures 9 ft, and one measures 3 ft. Can Selma build a kite-shaped border with these logs, without cutting them?

Draw and label the kite shape that Selma can build.

Exploring the Sums of the Angle Measures in Quadrilaterals

Conjecture: The sum of the angle measures of any quadrilateral is _____ .
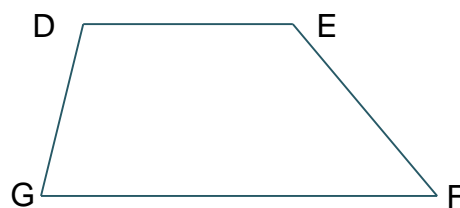
$4 \times 90° =$ _____ °
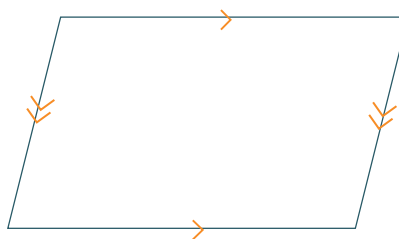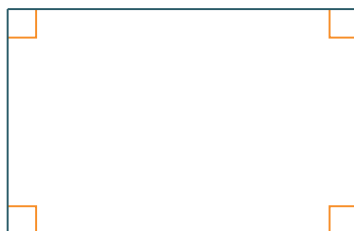
The Quadrilateral Angle Sum Theorem

Quadrilateral angle sum theorem – the sum of the angle measures of

a [_____] is 360°.

Draw the diagonal from G to E and label the angles.

$$m\angle 1 + m\angle 2 + m\angle 3 = 180°$$

$$m\angle 4 + m\angle 5 + m\angle 6 = \boxed{}$$

$$m\angle G + m\angle E + m\angle D + m\angle F = \boxed{}$$

Instruction | Classifying Quadrilaterals

Applying the Quadrilateral Angle Sum Theorem

Find the angle measures of kite ABCD.

$(4x + 13) + (6x - 16) + (3x - 1) + (5x + 4) = 360$

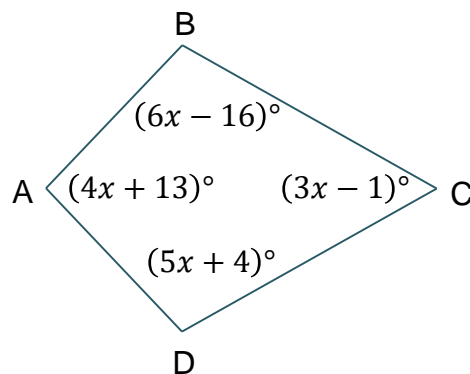$4x + 13 + 6x - 16 + 3x - 1 + 5x + 4 = 360$

$18x = 360$

$x = \boxed{}$

$A: 4(20) + 13 = \boxed{}$

$B: 6(20) + 16 = \boxed{}$

$C: 3(20) - 1 = 59°$

$D: 5(20) + 4 = \boxed{}$

B

$(6x - 16)°$

A $(4x + 13)°$ $(3x - 1)°$ C

$(5x + 4)°$

D

Summary | Classifying Quadrilaterals

?

Lesson Question	How are different quadrilaterals defined and related?

✓

Answer

Slide 2

Review: Key Concepts

There are some special quadrilaterals.

- Trapezoid

- Parallelogram

- Kite

- Rectangle

- Rhombus

- Square

The sum of the angle measures of a quadrilateral is [ ].

Use this space to write any questions or thoughts about this lesson.