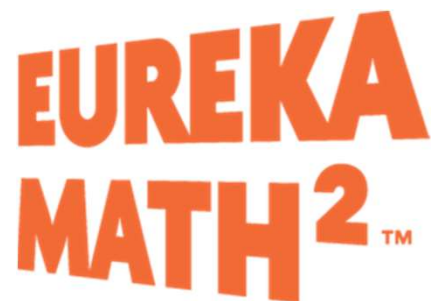




Module 5 - Lesson 4:

Classify rectangles and rhombuses based on their properties.

CCSS Standard – 5.G.B.3 / 5.G.B.4

FLUENCY (10-min)

Whiteboard Exchange: Round Decimals



Round 8.7 to the nearest ten. $8.7 \approx$ _____

Round 8.7 to the nearest one. $8.7 \approx$ _____

Round 12.1 to the nearest ten. $12.1 \approx$ _____

Round 12.1 to the nearest one. $12.1 \approx$ _____

FLUENCY (10-min)

Whiteboard Exchange: Round Decimals



Round 35.06 to the nearest ten.

$$35.06 \approx \underline{\hspace{2cm}}$$

Round 35.06 to the nearest one.

$$35.06 \approx \underline{\hspace{2cm}}$$

Round 1654.83 to the nearest ten.

$$164.83 \approx \underline{\hspace{2cm}}$$

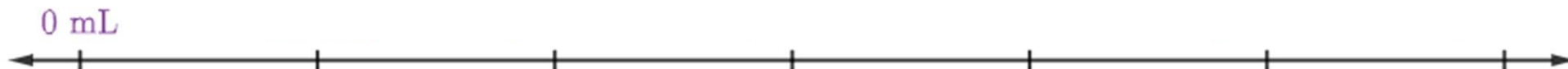
Round 164.83 to the nearest one.

$$164.83 \approx \underline{\hspace{2cm}}$$

FLUENCY (10-min)

Counting on the Number Line by Milliliters and Liters

Use the number line to count forward by 500 milliliters to 3,000 milliliters.
The first measurement you say is 0 milliliters. Ready?



Now count forward by 500 milliliters again. This time rename every 1,000 milliliters as a number of liters.
The first measurement you say is 0 liters. Ready?

Now count forward by 500 milliliters again. This time used mixed units, liters and milliliters, when possible.
The first measurement you say is 0 liters. Ready?

FLUENCY (10-min)

Choral Response: Lines of Symmetry

Raise your hand when you know the answer to each question.

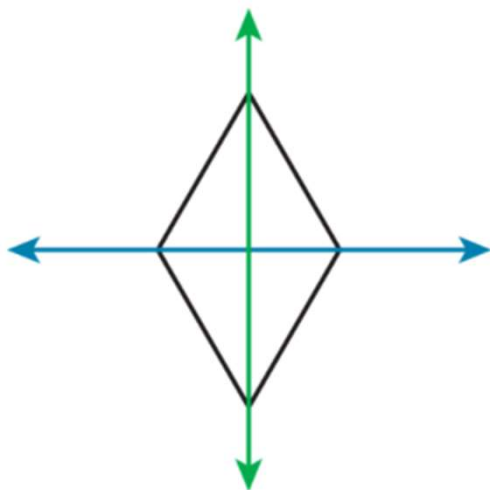
Wait for my signal to say the answer.

Is the line shown a line of symmetry for the figure?

Yes

Can other lines of symmetry be drawn for this figure?

Yes

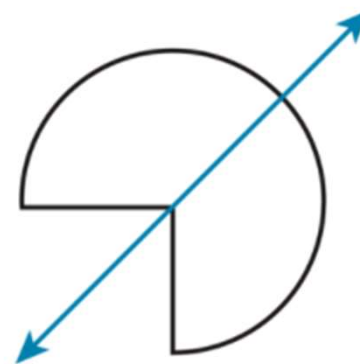


How many total lines of symmetry does the figure have?

Two lines of symmetry

Is the line shown a line of symmetry for the figure?

Yes



How many total lines of symmetry does the figure have?

One line of symmetry

FLUENCY (10-min)

Choral Response: Lines of Symmetry

Raise your hand when you know the answer to each question.

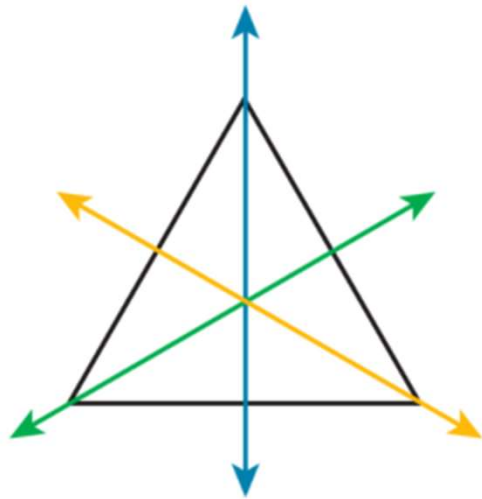
Wait for my signal to say the answer.

Is the line shown a line of symmetry for the figure?

No!

Can other lines of symmetry be drawn for this figure?

Yes



How many total lines of symmetry does the figure have?

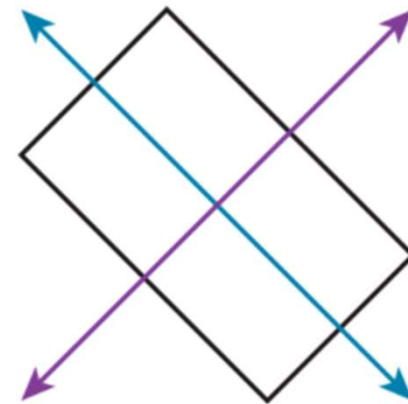
Three lines of symmetry

Is the line shown a line of symmetry for the figure?

Yes

Can other lines of symmetry be drawn for this figure?

Yes



How many total lines of symmetry does the figure have?

Two lines of symmetry

FLUENCY (10-min)

Choral Response: Lines of Symmetry

Raise your hand when you know the answer to each question.

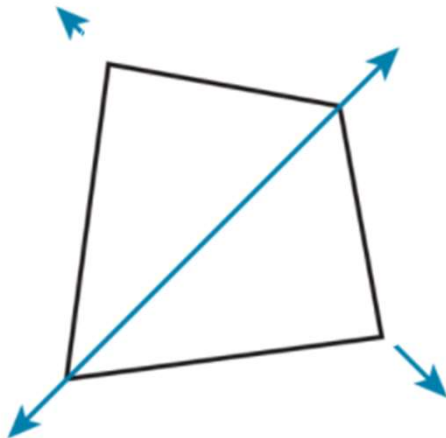
Wait for my signal to say the answer.

Is the line shown a line of symmetry for the figure?

No!

Can other lines of symmetry be drawn for this figure?

Yes



How many total lines of symmetry does the figure have?

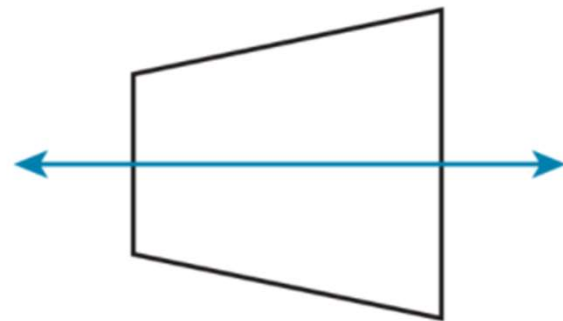
One line of symmetry

Is the line shown a line of symmetry for the figure?

Yes

Can other lines of symmetry be drawn for this figure?

No



How many total lines of symmetry does the figure have?

One line of symmetry

FLUENCY (10-min)

Choral Response: Lines of Symmetry

Raise your hand when you know the answer to each question.

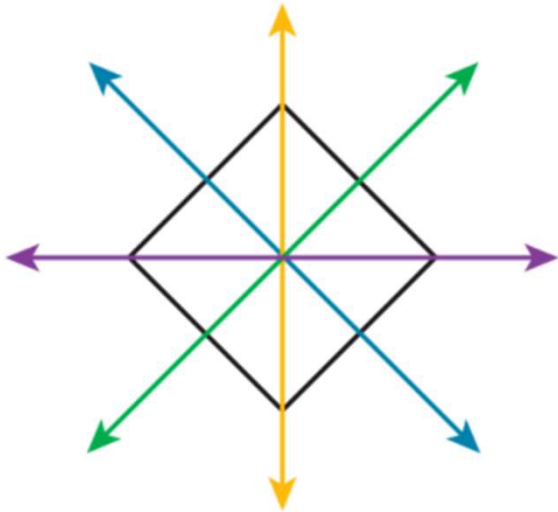
Wait for my signal to say the answer.

Is the line shown a line of symmetry for the figure?

Yes

Can other lines of symmetry be drawn for this figure?

Yes



How many total lines of symmetry does the figure have?

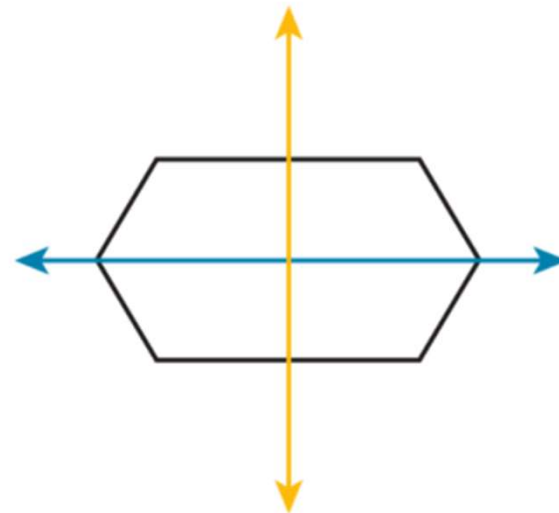
Four lines of symmetry

Is the line shown a line of symmetry for the figure?

Yes

Can other lines of symmetry be drawn for this figure?

Yes



How many total lines of symmetry does the figure have?

Two lines of symmetry

FLUENCY (10-min)

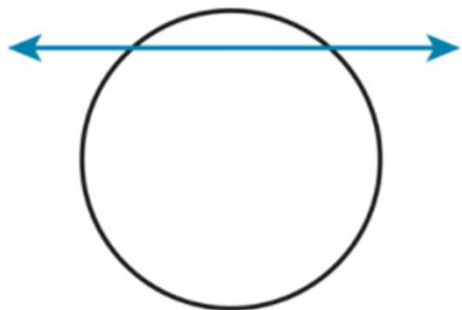
Choral Response: Lines of Symmetry

Raise your hand when you know the answer to each question.

Wait for my signal to say the answer.

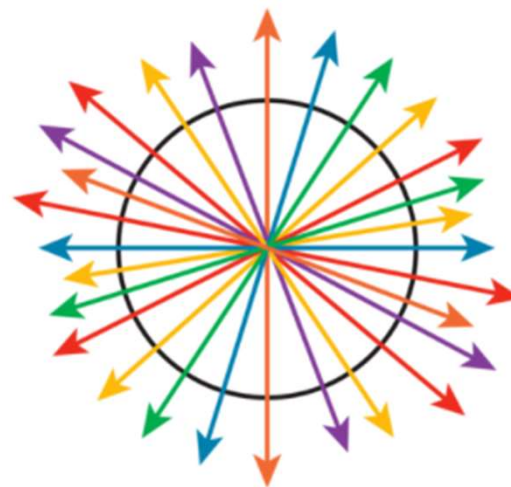
Does this circle show a line of symmetry? **No!**

Can other lines of symmetry be drawn for this circle?



Yes!

How many total lines of symmetry can the circle have?



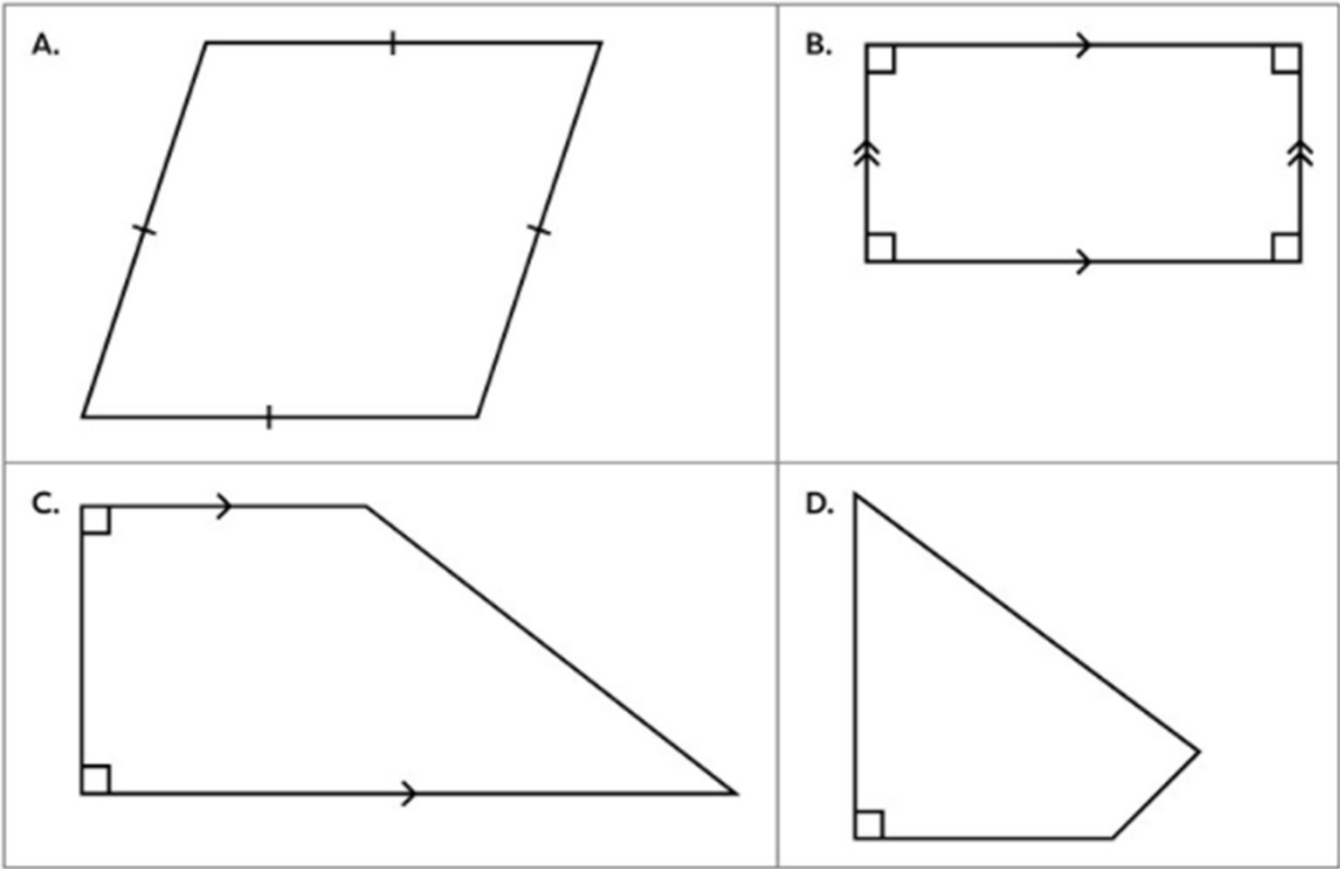
A circle has an infinite number of lines of symmetry!

LAUNCH (5-min)

Which One Doesn't Belong?
Examine and compare four quadrilaterals

Take one minute to examine the four quadrilaterals. Find a category in which three of the items belong but a fourth item does not.

- Figure A doesn't belong because it has 4 sides of equal length.
- Figure B doesn't belong because it has 4 right angles.
- Figure C doesn't belong because it has 2 right angles.
- Figure D doesn't belong because it is not a trapezoid.



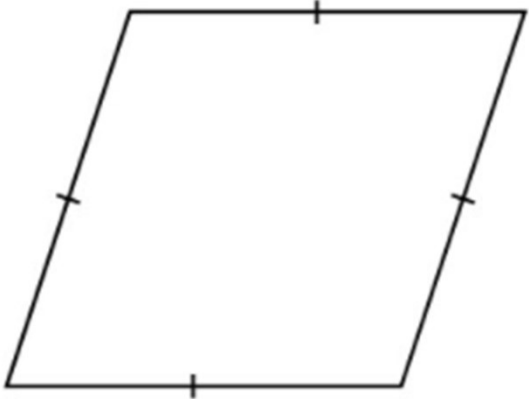
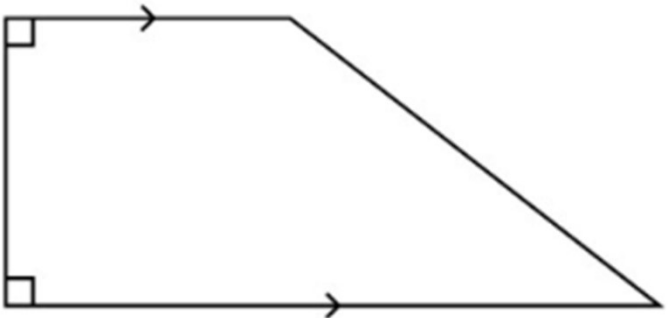
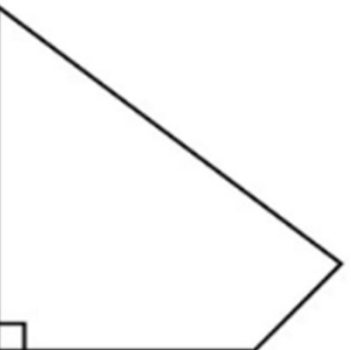
LAUNCH (5-min)

Which One Doesn't Belong?
Examine and compare four quadrilaterals

Are any of the figures **rectangles**?

Are any of the figures **rhombuses**?

Today, we will learn about the properties of two special types of parallelograms:
Rectangles and Rhombuses

A. 	B. 
C. 	D. 

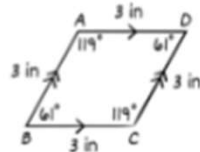
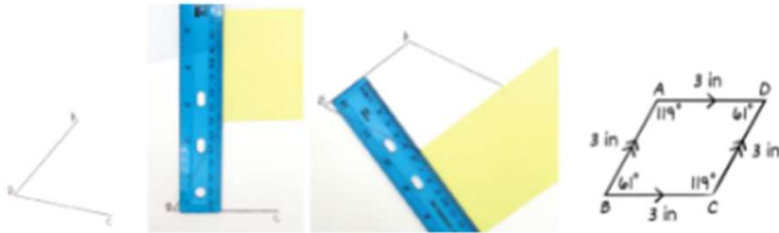
LEARN (35-min)

Construct a Rhombus

Use interactive Geometry World on
Digital Great Minds.



Let's construct rhombuses to identify properties of rhombuses.
What must these figures include?



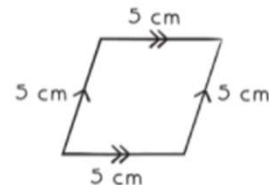
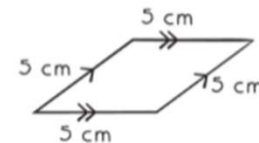
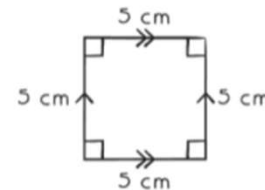
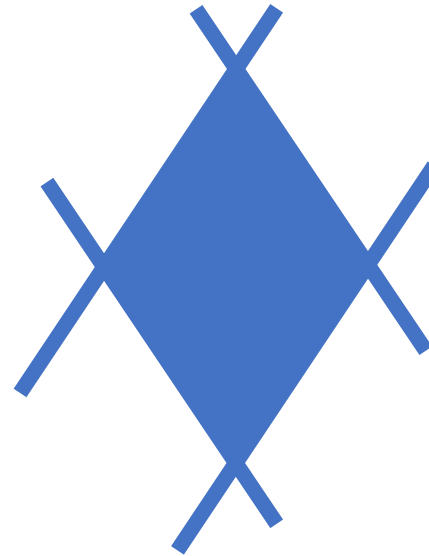
These figures must include:

Opposite sides that are parallel.

Four sides of equal length.

In the previous lesson, some of the parallelograms that we created had 4 sides with the same length, and others did not. But we classified them as parallelograms.

Today, all parallelograms we constructed have 4 sides that have the same length. A property of a rhombus is that it has 4 sides of equal length AND opposite sides are parallel.



LEARN (35-min)

Explore Diagonals of Rhombuses

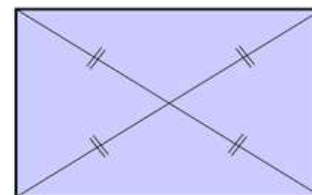
What is a diagonal of a quadrilateral?

A line segment connecting **opposite corners** of the quadrilateral.

The 2 diagonals in a rhombus are lines of symmetry.
These lines of symmetry pass through each other at the midpoint perpendicularly (at 90 degrees).
This is another property of rhombuses!

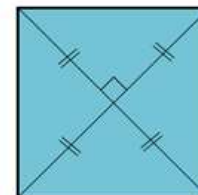
Diagonal of Quadrilaterals

MATH
MONKS



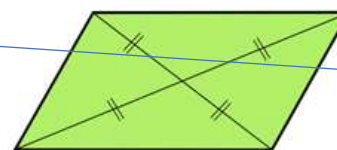
Rectangle

- Has two diagonals
- Diagonals are equal
- Diagonals bisect each other



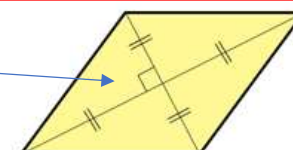
Square

- Has two diagonals
- Diagonals are perpendicular
- Diagonals bisect each other



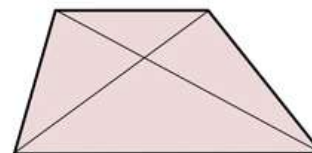
Parallelogram

- Has two diagonals
- Diagonals bisect each other



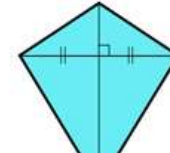
Rhombus

- Has two diagonals
- Diagonals are perpendicular
- Diagonals bisect each other



Trapezoid

- Has two diagonals
- Diagonals are not equal (exception: isosceles trapezoid)



Kite

- Has two diagonals
- Diagonals are perpendicular
- Longer diagonal bisects the shorter one

LEARN (35-min)

Analyze a Rectangle

LEARN book page 25.

1. Consider rectangle $ABCD$.



Is this figure a rectangle? How do you know?

Yes. It is a quadrilateral with 4 right angles.

Are rectangles parallelograms? How do you know?

Yes.

Opposite sides in rectangles are parallel.

How many lines of symmetry do rectangles have?

Two lines of symmetry.

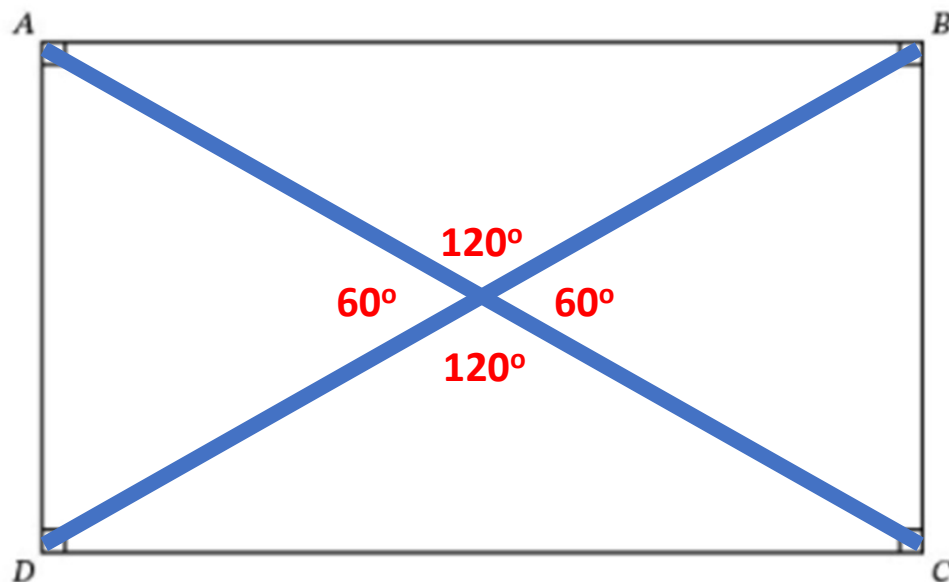
Using a ruler, let's follow the steps on page 25

LEARN (35-min)

Analyze a Rectangle

LEARN book page 25.

1. Consider rectangle $ABCD$.



a. Use a ruler to draw the diagonals of the rectangle.

b. Measure the diagonals and write their lengths. $5\frac{1}{2}$ inches $5\frac{1}{2}$ inches.

c. What do you notice about the diagonal lengths of the rectangle?

The diagonals are the same length.

d. Measure the four angles around the intersection point of the diagonals. Record the measurements on the figure.

e. Are the diagonals perpendicular? How do you know?

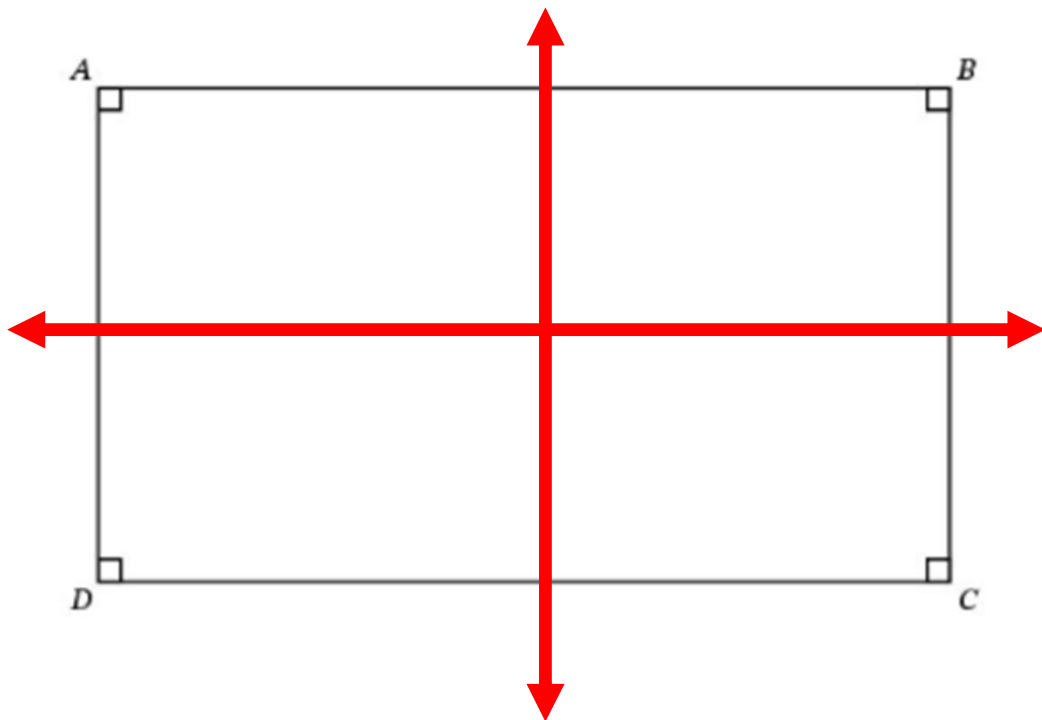
No. They do not intersect at right angles.

Having diagonals that are the same length is a **PROPERTY** of rectangles because it is true for **ALL** rectangles, but it is not a property of parallelograms because it is not true for all parallelograms.

LEARN (35-min)

Analyze a Rectangle

LEARN book page 26.



Use your ruler to draw the rectangle's lines of symmetry.

How many lines of symmetry does your rectangle have?

Two. The lines of symmetry go through the midpoints of opposite sides.

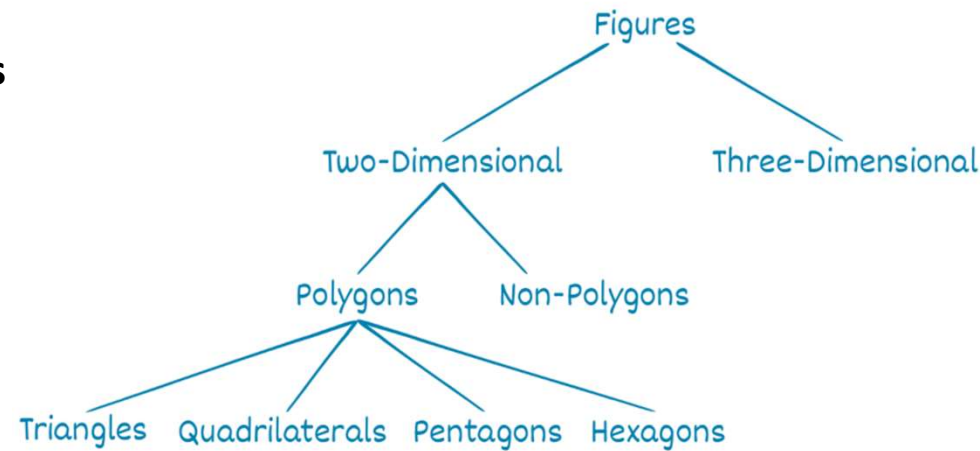
All rectangles have at least 2 lines of symmetry. This describes a **PROPERTY** of all rectangles.

LEARN (30-min)

Hierarchy of Quadrilaterals

Now we can EXPAND on our hierarchy from the last lesson.

Because parallelograms are trapezoids, we can classify them below trapezoids in the hierarchy.



Trapezoids

Properties:

At least 1 pair of parallel sides.

At least 2 pairs of supplementary angles.

Parallelograms

Properties:

Opposite sides that are parallel.

Opposite sides that have the same length.

Opposite angles that have the same measure.

Diagonals intersecting at midpoints.

Rectangles

Properties:

4 right angles

Diagonals have the same length

At least 2 lines of symmetry

Rhombuses

Properties:

4 sides have the same length.

At least 2 lines of symmetry

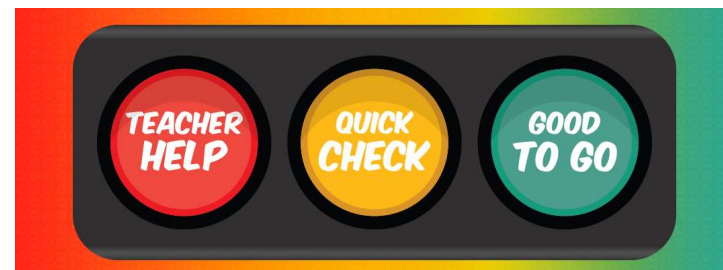
LEARN (35-min)

Rectangles & Rhombuses

	Rectangles Only	Rhombuses Only	Both Rectangles & Rhombuses
I have 4 sides.			
All my sides are the same length.			
All my angles have the same measure.			
I have opposite angles that have the same measure.			
I have opposite sides that are the same length.			
I have at least 2 lines of symmetry.			
All my sides are the same length, and all my angles have the same measure.			

LAND (10-min)

Exit Ticket



Name _____

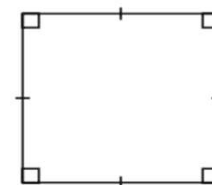
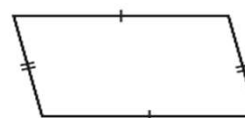
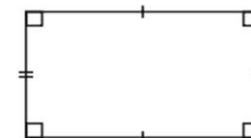
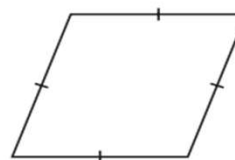
Date _____



4

1. Consider the quadrilaterals shown.

- Circle each quadrilateral that is a rhombus.
- Draw an X on each quadrilateral that is a rectangle.



Exit Ticket – PAGE 31

Small Group Time:

Problem Set Pages 27 – 29

Homework:

Page 29 APPLY BOOK