G.CO.11 How do I identify rectangles and squares?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 16, Lesson 1

1. Warm Up
2. TI-NSpire activity
3. Notes
4. Left-Side Practice
5. Closure

92

Rectangles and Squares

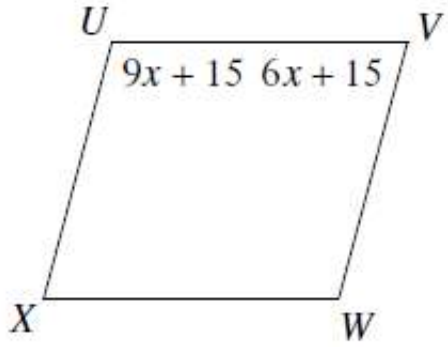
93

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

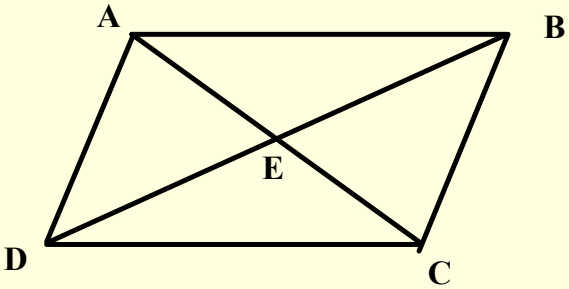
Before you start, write down as many of the 6 properties of parallelograms from memory as you can.

Given the parallelogram at the right, find the value of x and the measure of each angle.
What property of parallelograms allows you to solve this problem?



Given the parallelogram at the right, find the value of x and the measure of BD.
What property of parallelograms allows you to solve this problem?

DE= 3x -16 BD = 4x+ 6



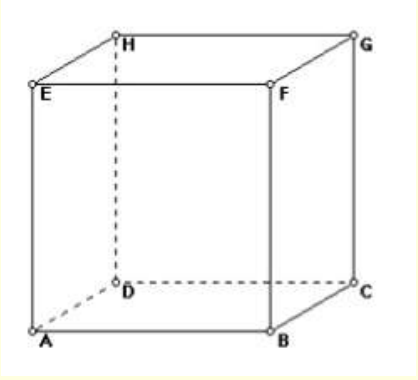
ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

TI-NSpire Activity

Welcome to "Rectangles and Squares."

To move through the tabs, you can use your mouse, or press [ctrl] and then left/right.

If you need help, please ask your team!

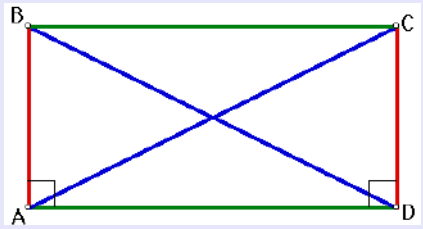


notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes -

Rectangles

Special parallelograms that have the normal 6 characteristics PLUS:

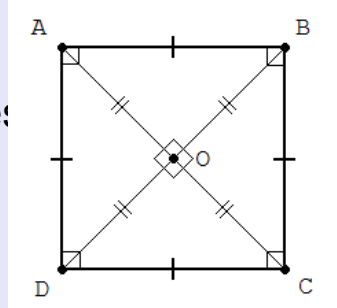
- consecutive sides are perpendicular
- diagonals are congruent



Squares

Special parallelograms that have the normal 6 characteristics PLUS:

- consecutive sides are perpendicular
- diagonals are congruent
- all sides are congruent
-diagonals bisect the angles



Summary:

ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

Left-Side Practice

Given the following slopes, write the slope of the line parallel to it and the slope of the line perpendicular to it.

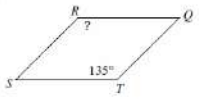
1. m = 1/2
2. m = -3
3. m = 3/4
4. m = -1
5. m = 1

6. For rectangle ABCD, the slope of AB is 1/2. Fill in the slopes for the remaining sides.
Slope of AB = 1/2
Slope of BC = ____
Slope of CD = ____
Slope of AD = ____

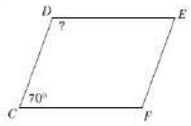
Properties of Parallelograms Date_____

Find the measurement indicated in each parallelogram.

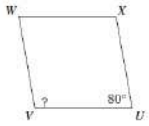
1)



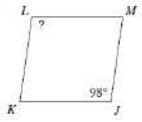
2)



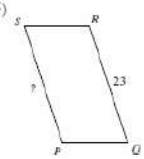
3)



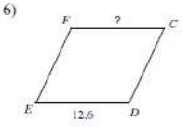
4)



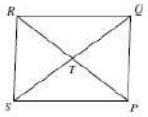
5)



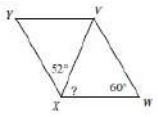
6)



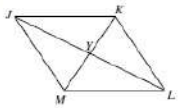
7) $RT = 19.8$
Find RP



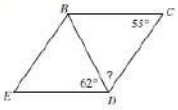
8)



9) $KM = 23.4$
Find YM

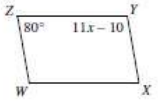


10)

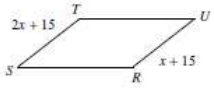


Solve for x. Each figure is a parallelogram.

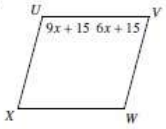
11)



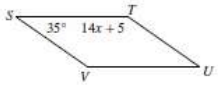
12)



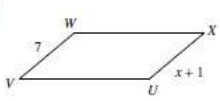
13)



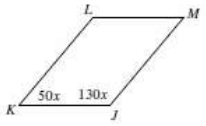
14)



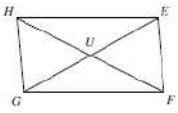
15)



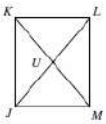
16)



17) $UH = 19$
$FH = 5x - 7$

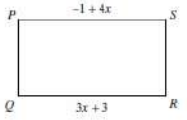


18) $KU = 3x + 3$
$UM = 4x - 4$

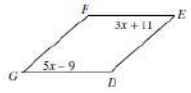


Find the measurement indicated in each parallelogram.

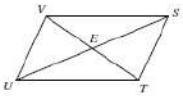
19) Find RQ



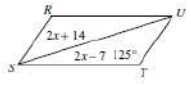
20) Find $m\angle G$



21) $TE = 4 + 2x$
$EV = 4x - 4$
Find TE



22) Find $m\angle TSR$



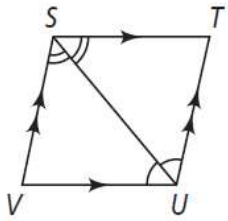
Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Right Side...

Write a summary that answers the essential question.

Left Side...

1. Which is the most precise name of this figure?



(A) parallelogram (C) rectangle

(B) rhombus (D) square

2. Which of the following conditions or set of conditions must be met for a parallelogram to be a rectangle?

(F) Diagonals are perpendicular.

(G) Diagonals are congruent.

(H) All sides are congruent.

(I) The length of a diagonal is equal to the length of a side.

G.CO.11 How do I identify rhombi and trapezoids?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 16, Day 2

1. Warm Up
2. Notes
3. Left-Side Practice
4. Closure

94

Rhombi and Trapezoids

95

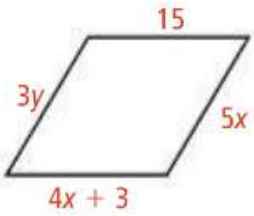
Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

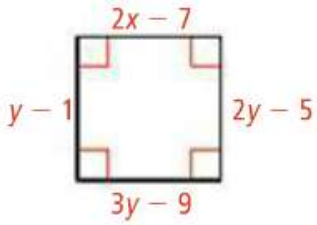
(a) Given the following diagrams, solve for x and y.

(b) What property of parallelograms did you use to solve the problem?

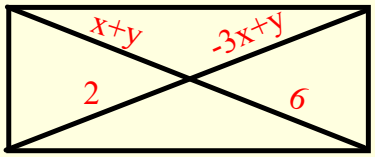
rhombus

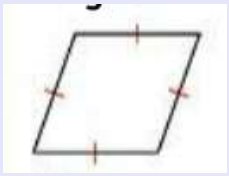
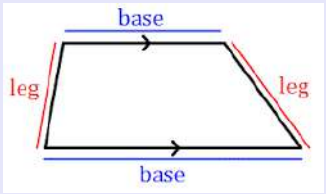
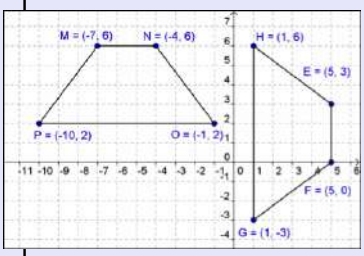
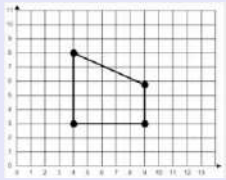
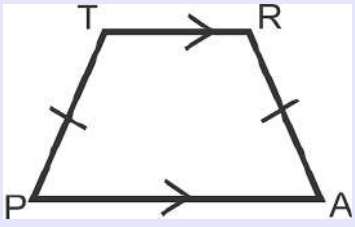


square



Rectangle



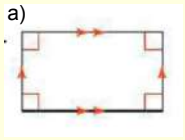
rhombus	a parallelogram with 4 congruent sides 
trapezoid	a quadrilateral having one pair of parallel sides (called the bases) and one pair of non-parallel sides (called the legs)    an isosceles trapezoid is a trapezoid with two congruent legs 

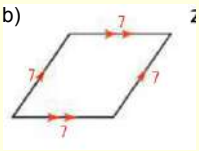
Summary:

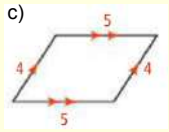
ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

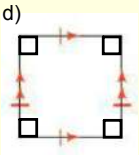
Left-Side Practice

1. Determine the most precise name for each quadrilateral AND write your reason why.

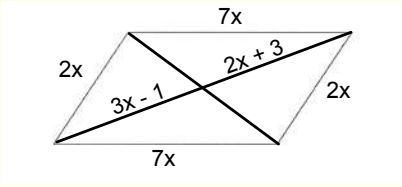
a) 

b) 

c) 

d) 

2. Use the figure below to answer the following questions.

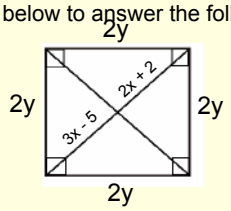


(a) What is the most precise name for this quadrilateral? What property identifies it as this shape?

(b) Solve for x.

(c) Find the length of the shorter side.

3. Use the figure below to answer the following questions.



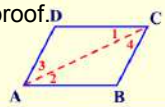
(a) What is the most precise name for this quadrilateral? What property identifies it as this shape?

(b) Find the value of x and the length of the diagonal.

4. Complete the following proof.

Given: $\square ABCD$

Prove: $\overline{AB} \cong \overline{CD}; \overline{BC} \cong \overline{AD}$



	STATEMENTS		REASONS
1	$\square ABCD$	1	Given
2	Draw segment from A to C	2	Two points determine exactly one line.
3	$\overline{AB} \parallel \overline{CD}; \overline{AD} \parallel \overline{BC}$	3	
4	$\angle 1 \cong \angle 2; \angle 3 \cong \angle 4$	4	
5	$\overline{AC} \cong \overline{AC}$	5	
6	$\triangle ABC \cong \triangle CDA$	6	
7	$\overline{AB} \cong \overline{CD}; \overline{BC} \cong \overline{AD}$	7	

Classifying Quadrilaterals

State the most specific name for each figure.

1)

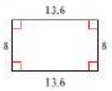
2)

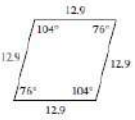
3)

4)

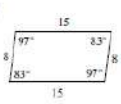
5)

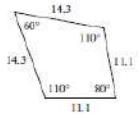
6)

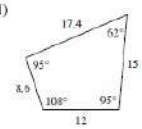
7) 

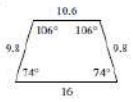
8) 

– 1 –

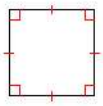
9) 

10) 

11) 

12) 

State all possible name for each figure.

13) 

14)

15)

16)

17)

18)

Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Right Side...

Write a summary that answers the essential question.

Left Side...

G.CO.11 What are the properties of a parallelogram and the special parallelograms?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 16, Day 3

1. Warm Up
2. Quad Project
3. Closure

96

Parallelogram Project

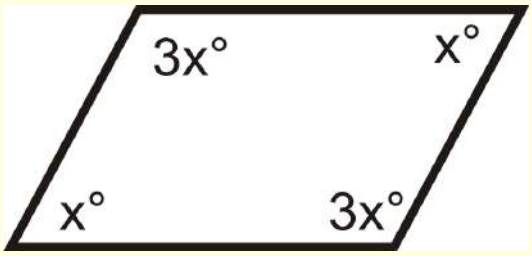
97

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

1. (a) Given the quadrilateral below, what is the most specific name for it? What property justifies it as this shape?

7y - 1



5y + 21

(b) Solve for y. Then, find the length of the side.

ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

Quadrilaterals Project

For this project, you will be working in your groups. There are THREE parts to the project. All 3 parts must be completed to receive full credit.

Part 1: Scavenger Hunt

You must take a picture on your phones of EACH of the following shapes ON-CAMPUS:

____ a triangle
____ a right triangle
____a set of parallel lines
____ vertical angles
____a rectangle
____ a square
____ a parallelogram
____ adjacent angles
____ supplementary angles

At least ONE group member must be in each picture, or it will not be counted.

Part 2: Poster

For EACH of the following terms, you must
1. cut out an accurate picture of the shape
2. include all of the appropriate marks on the picture (e.g. hash marks, 90° angles, etc)
3. write all of its characteristics next to the shape

Terms:
____ parallelogram
____ rectangle
____ rhombus
____ square
____ trapezoid

Part 3: Riddles

On your poster, you will make 3 riddles about 3 DIFFERENT shapes.

Ex: If you're hot, I'll help you cool down, but only in an emergency. Break this!
What am I and what shape?

Answer: ???

How will I be graded?

Since it's a group project, you will be graded on several different components:
1. How well you worked with others – Were you working the entire time? Were you off-task? Were you a dependable group member?
2. Does your group have pictures for each of the shapes in Part 1 AND is a group member in each picture?
3. Does your group have a poster with a cut-out and a description for each of the shapes in Part 2?
4. Does your group have 3 riddles completed for Part 3?

Closure Closure Closure

G.CO.13 How do I inscribe a square and a hexagon in a circle?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 16, Lesson 4

1. Warm Up
2. G.CO.11 Quiz
3. Notes
4. Practice
5. Closure

80

81

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

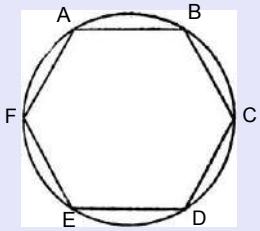
To prepare for the quiz, take a few minutes to review pages 70-79 in your IAN. Then, self-assess with the following questions:

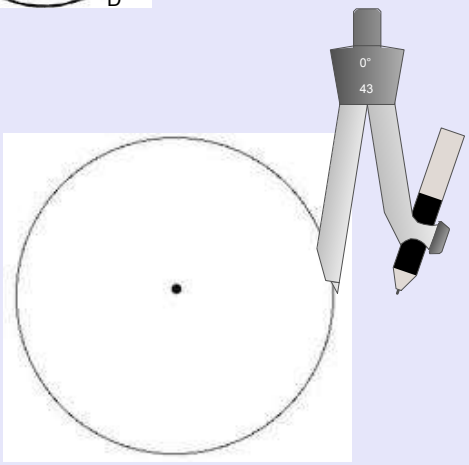
1. Do you remember the properties of parallelograms?
2. Do you know how to solve algebra problems based on the properties of parallelograms?
3. Do you remember how to complete a proof?

G.CO.11 Quiz

notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes - notes -

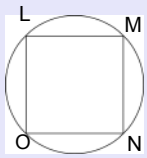
Inscribing a hexagon in a circle



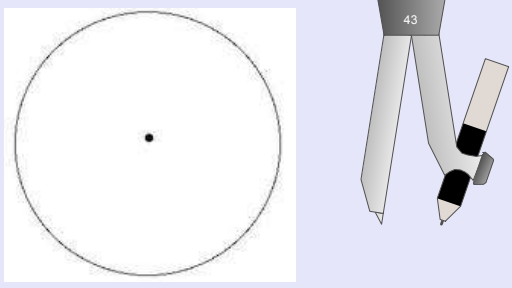


*Make sure to label your vertices!

Inscribing a square in a circle



1. Draw the diameter of the circle.
2. Construct the perpendicular bisector of the diameter.
3. Connect to form a square.



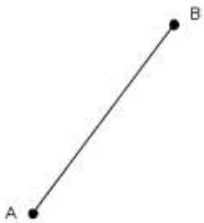
*Make sure to label your vertices!

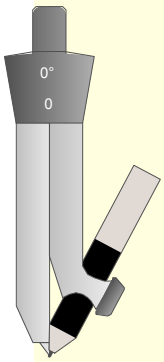
Summary:

ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

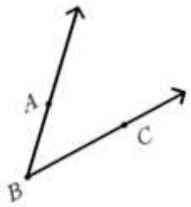
Name _____ **G.CO.13 Practice** IAN page 80

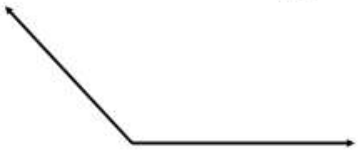
1. Construct the perpendicular bisector for the segment shown at the right.



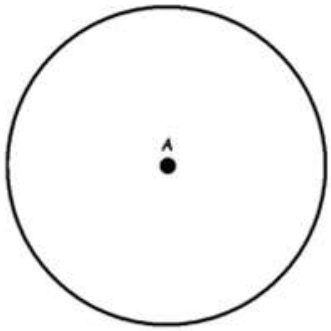


2. Construct the angle bisector for the given two angles shown.

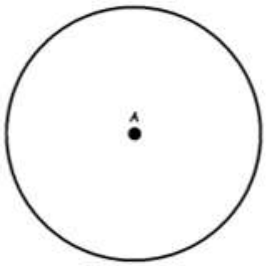




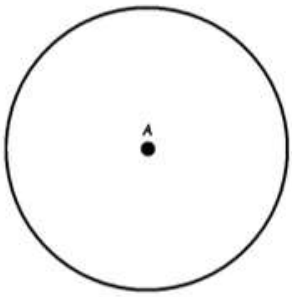
3. Inscribe an equilateral triangle below.



4. Inscribe a regular hexagon below.



5. Inscribe a square below.



Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure Closure

Right Side...

Write a summary that answers the essential question.

Left Side...

List the quadrilaterals that have the given property. Choose among *parallelogram, rhombus, rectangle,* and *square.*

28. All sides are $\cong$.

30. Opposite sides are $\parallel$.

32. All $\measuredangle$s are right $\measuredangle$s.

34. Diagonals bisect each other.

36. Diagonals are $\perp$.

G.CO.13 How do I inscribe a square and a hexagon in a circle?

Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question Essential Question

Week 16, Lesson 5
1. Warm Up
2. G.CO.13 Quiz
3.Quad Project or Choice Board
4. Closure

80

Not a new page! Please use the same pages as yesterday!

81

Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-up Warm-u

Warm Up:

In order to review for the quiz, take a minute to look over pages 80-81 in your IAN. Then, self-assess with the following questions:

1. Do you know how to inscribe a regular hexagon in a circle?
2. Do you know how to inscribe a square in a circle?

G.CO.13 Quiz

ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity ICA: In Class Activity

Quadrilaterals Project

For this project, you will be working in your groups. There are THREE parts to the project. All 3 parts must be completed to receive full credit.

Part 1: Scavenger Hunt

You must take a picture on your phones of EACH of the following shapes ON-CAMPUS:

____ a triangle
____ a right triangle
____a set of parallel lines
____ vertical angles
____a rectangle
____ a square
____ a parallelogram
____ adjacent angles
____ supplementary angles

At least ONE group member must be in each picture, or it will not be counted.

Part 2: Poster

For EACH of the following terms, you must
1. cut out an accurate picture of the shape
2. include all of the appropriate marks on the picture (e.g. hash marks, 90° angles, etc)
3. write all of its characteristics next to the shape

Terms:
____ parallelogram
____ rectangle
____ rhombus
____ square
____ trapezoid

Part 3: Riddles

On your poster, you will make 3 riddles about 3 DIFFERENT shapes.

Ex: If you're hot, I'll help you cool down, but only in an emergency. Break this!
What am I and what shape?

Answer: ???

How will I be graded?

Since it's a group project, you will be graded on several different components:
1. How well you worked with others – Were you working the entire time? Were you off-task? Were you a dependable group member?
2. Does your group have pictures for each of the shapes in Part 1 AND is a group member in each picture?
3. Does your group have a poster with a cut-out and a description for each of the shapes in Part 2?
4. Does your group have 3 riddles completed for Part 3?

Closure Closure Closure