

Honors Geometry**Ch 6 Notes Packet****Sec 6.1:**

After this section you will have completed the following Common Core State Standard(s):

- **G.MG.1: Use geometric shapes, their measures and their properties to describe objects**

And will be improving your skills in the following Mathematical Practice(s):

4. **Model with mathematics**
3. **Construct viable arguments and critique the reasoning of others**

Specifically, you should be able to:

- **Find and use the sum of the measures of the interior angles of a polygon**
- **Find and use the sum of the measures of the exterior angles of a polygon**

n	sum of interior angles	one interior angle	one exterior angle	sum of exterior angles
3				
4				
5				
6				
.....				
n				

The sum of the measures of the interior angles of a polygon with n sides is

The measure of one interior angle in a regular polygon is

The sum of the measures of the exterior angles of a polygon is always _____.

The measure of one exterior angle of a regular polygon is _____.

Examples:

Sec 6.2 & 3:

After this section you will have completed the following Common Core State Standard(s):

- **G.CO.11: Prove theorems about parallelograms**

And will be improving your skills in the following Mathematical Practice(s):

4. Model with mathematics

3. Construct viable arguments and critique the reasoning of others

Specifically, you should be able to:

- **Recognize and apply the properties of sides and angles and diagonals of parallelograms**
- **Recognize conditions that ensure a quadrilateral is a parallelogram**
- **Prove that a set of points forms a parallelogram in the coordinate plane**

Dfn: Parallelogram: a quadrilateral with _____.



Properties of Parallelogram Theorems:

If a quadrilateral is a parallelogram then...

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The converse of most of these are true. See below... :)

If any of the following are true, then a quadrilateral is a parallelogram.....

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Examples:

Sec 6.4:

After this section you will have completed the following Common Core State Standard(s):

- **G.CO.11: Prove theorems about parallelograms**
- **G.GPE.4: Use coordinates to prove simple geometric theorems algebraically**

And will be improving your skills in the following Mathematical Practice(s):

- 3. Construct viable arguments and critique the reasoning of others**
- 5. Use appropriate tools strategically**

Specifically, you should be able to:

- **Recognize and apply the properties rectangles**
- **Determine whether parallelograms are rectangles**

Dfn: Rectangle: a parallelogram with _____.

By definition, since a rectangle is a parallelogram it has all the characteristics of a parallelogram PLUS the distinguishing characteristic of being a rectangle:

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-
-
-
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Properties of a Rectangle:

A parallelogram is a rectangle if and only if
_____, and

_____.



Examples:

Sec 6.5:

After this section you will have completed the following Common Core State Standard(s):

- **G.CO.11: Prove theorems about parallelograms**
- **G.GPE.4: Use coordinates to prove simple geometric theorems algebraically**

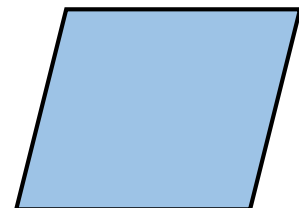
And will be improving your skills in the following Mathematical Practice(s):

- 2. Reason abstractly and quantitatively**
- 3. Construct viable arguments and critique the reasoning of others**

Specifically, you should be able to:

- **Recognize and apply the properties of rhombi and squares**
- **Determine whether quadrilaterals are rectangles, rhombi or squares**

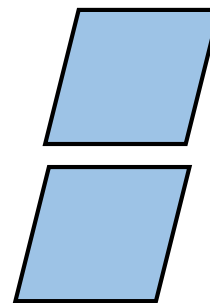
Dfn: Rhombus: a parallelogram with
_____.



A rhombus has all the properties of a parallelogram + the following properties:

Properties of Rhombii:

- A parallelogram is a rhombus if and only if _____.
- A parallelogram is a rhombus if and only if _____.



Dfn: Square: a quadrilateral with _____.

A quadrilateral is a _____ if and only if it is a _____ and a _____ . (Thus it has all of the properties of those shapes.)

Examples:

Sec 6.6:

After this section you will have completed the following Common Core State Standard(s):

- **G.GPE.4: Use coordinates to prove simple geometric theorems algebraically**
- **G.MG.3: Apply geometric methods to solve problems**

And will be improving your skills in the following Mathematical Practice(s):

1. Make sense of problems and persevere in solving them

2. Reason abstractly and quantitatively

Specifically, you should be able to:

- Recognize and apply the properties of trapezoids and kites

Dfn: Trapezoid: a quadrilateral with _____.

A trapezoid is isosceles if its _____.

Theorems: A trapezoid is isosceles if and only if:

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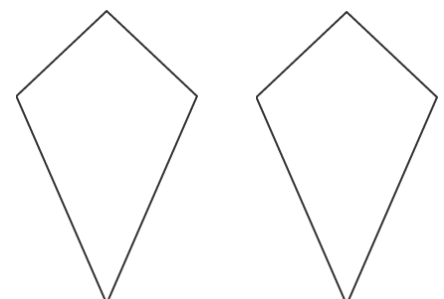
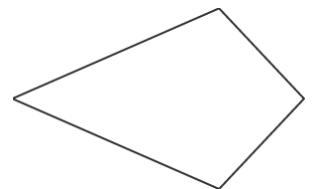
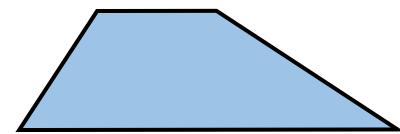
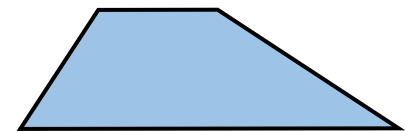
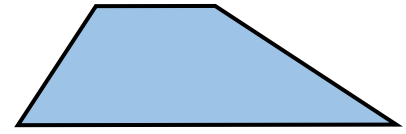
Dfn: The _____ of a trapezoid connects the _____ of the _____ of the trapezoid.

Trapezoid Midsegment Theorem: The midsegment of a trapezoid is _____ to the _____ and its length is _____ of the bases.

Dfn: Kite: A quadrilateral with _____.

Theorems: If a quadrilateral is a kite then:

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Examples: