**Ch 1 Points, Lines, Planes and Angles**

**Undefined Terms**

1) Point:

2) Line:

3) Plane:

**Defined Terms**

1) Line Segment:

2) Ray:

3) Opposite Rays:

**Symbolism**

**Midpoint/Segment Bisector**

Point M is called the \_\_\_\_\_\_\_\_\_\_\_ of the segment.

Line k is called the segment \_\_\_\_\_\_\_\_\_\_\_\_\_

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Points**

Lie in the same line

**\_\_\_\_\_\_\_\_\_\_\_\_ Points**

Lie in the same plane

**Segment Addition Postulate:**

**Angle Addition Postulate:**

**Vertical Angles:**

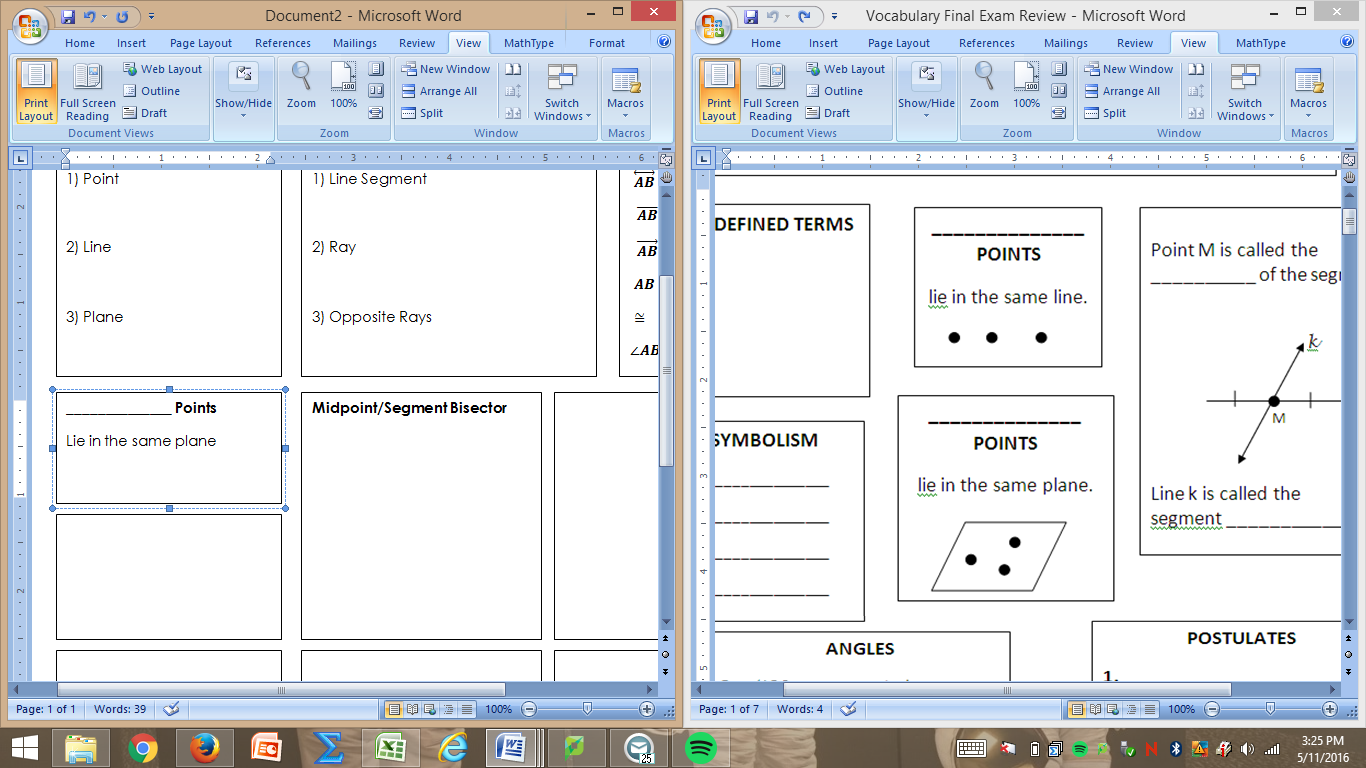
**Supplementary Angles:**

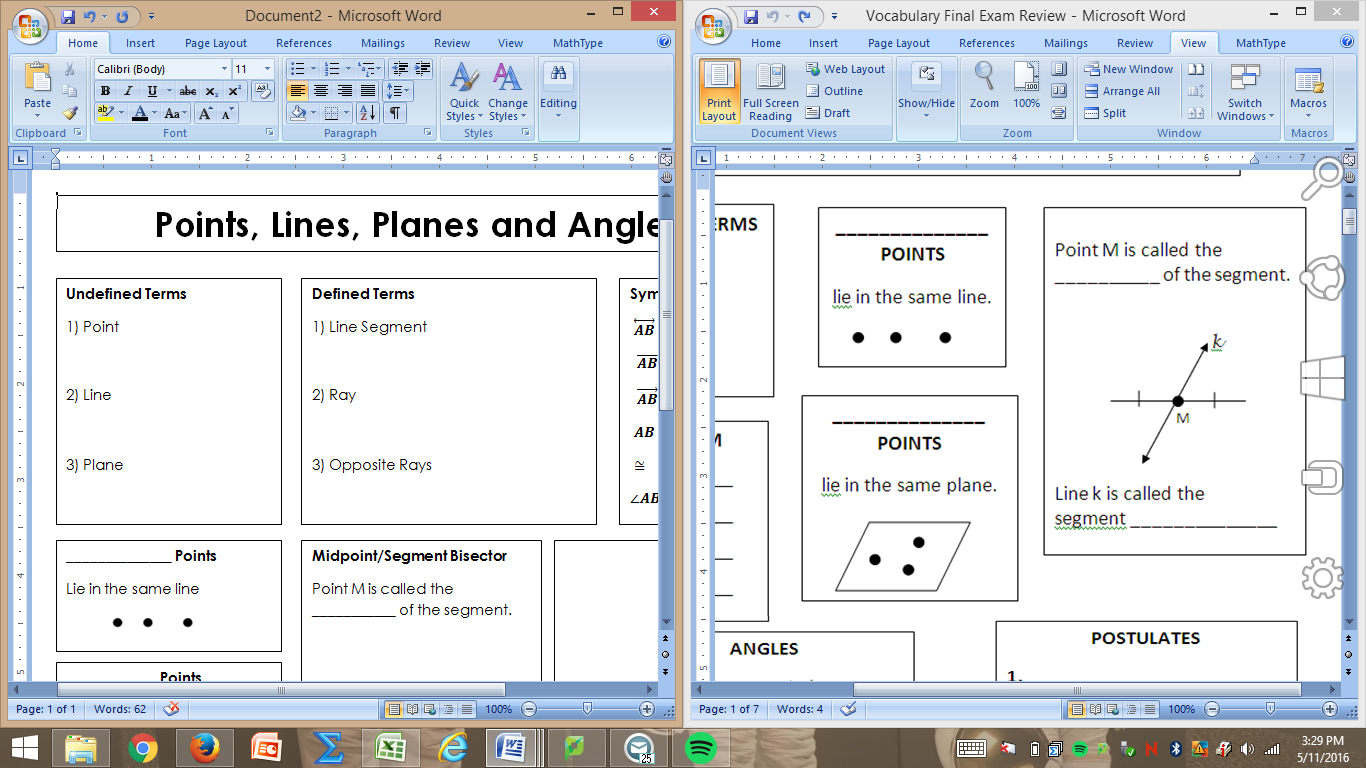
**Complementary Angles:**

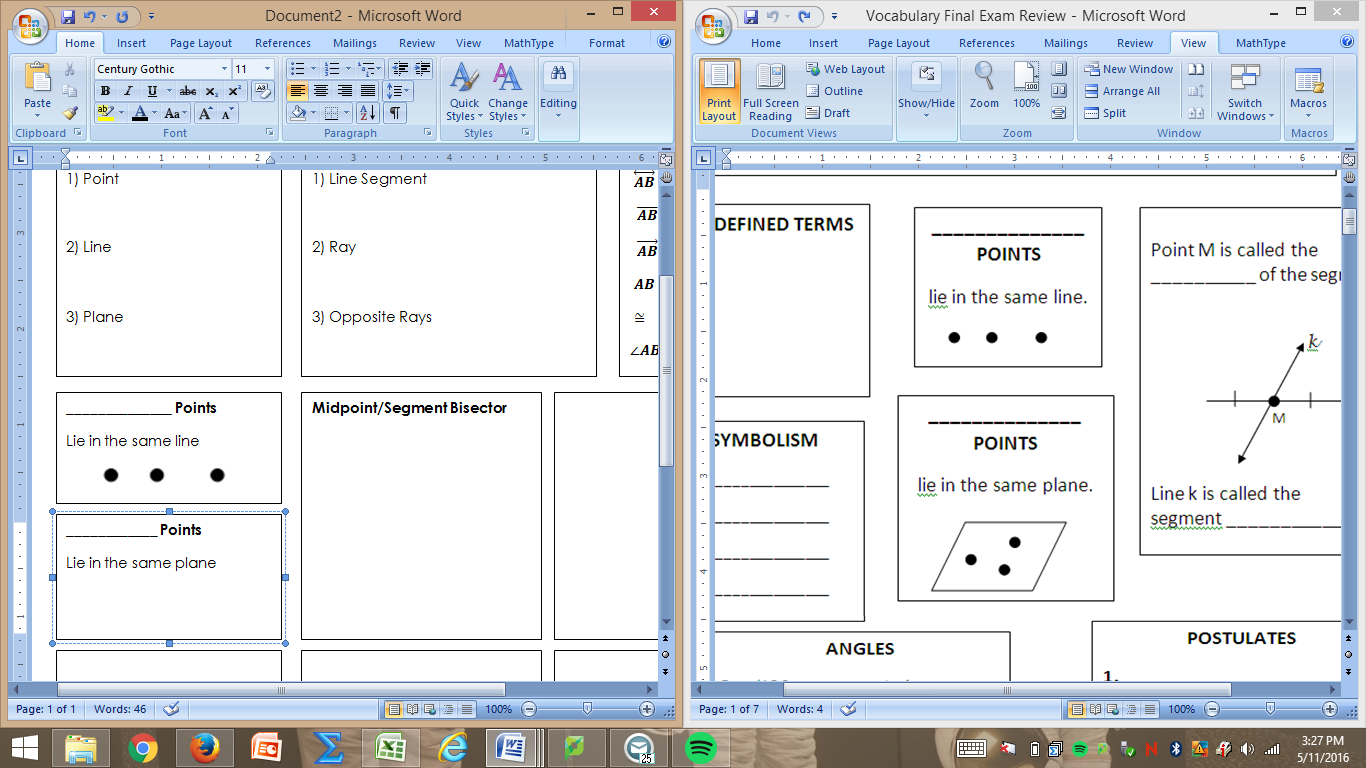
**Congruent Angles:**

**Linear Pair:**

**Adjacent Angles:**







**Ch 2 Reasoning and Proof**

**Conditional Statement:**

**Converse:**

**Inverse:**

**Contrapositive:**

**Bi-conditional Statement:**

**Point, Line and Plane Postulates:**

**1)**

**2)**

**3)**

**4)**

**5)**

**6)**

**7)**

**Reflexive Property of eq.**

**Symmetric Prop. of eq.**

**Transitive Prop of eq.**

**Right Angles ≅ Thm**

**Reflexive Property of ≅**

**Symmetric Prop. of ≅**

**Transitive Prop of ≅**

**Vertical Angles ≅ Thm**

**Congruent Supplements Thm.**

**Cong. Complements Thm.**

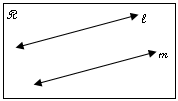
**Linear Pair Postulate**

**Ch 3 Parallel and Perpendicular Lines**

**Parallel Lines**

Symbol \_\_\_\_\_

Two lines that do not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and are \_\_\_\_\_\_\_\_\_\_\_\_\_



Line t is called the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

∠1 and ∠5 are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ angles.

∠3 and ∠6 are \_\_\_\_\_\_\_\_\_\_\_\_\_ interior angles.

∠2 and ∠7 are \_\_\_\_\_\_\_\_\_\_\_\_\_ exterior angles.

∠4 and ∠6 are \_\_\_\_\_\_\_\_\_\_\_\_\_ interior angles.

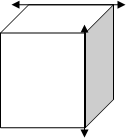
**Perpendicular Lines**

Symbol \_\_\_\_\_

Two lines that intersect to form four \_\_\_\_\_\_\_\_\_ angles

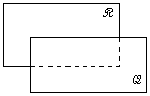
**Skew Lines**

Lines that do not \_\_\_\_\_\_\_\_\_\_\_ and are NOT \_\_\_\_\_\_\_\_\_\_\_\_\_



**Parallel Planes**

Two planes that do not \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_



If two **parallel** lines are cut by a transversal:

1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interior, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ exterior and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ angles are congruent.
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ interior angles are supplementary.

**Methods to prove that two lines are parallel:**

1) Prove alt. interior angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) Prove alt. exterior angles are \_\_\_\_\_\_\_\_\_\_\_\_\_.

3) Prove corresponding angles are \_\_\_\_\_\_\_\_\_\_\_.

4) Prove Cons. Interior angles are \_\_\_\_\_\_\_\_\_\_\_\_\_.

**Slope:**

**Horizontal Slope:**

**Vertical Slope:**

**Slope-Intercept form:**

**Standard form:**

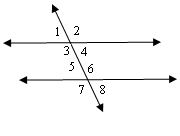
**Point- Slope form:**

**Vertical Line:**

**Horizontal Line:**

**Writing an equation parallel to given line:**

**Writing an equation perpendicular to given line:**



**Ch 4 Congruent Triangles**

**Types of Triangles by Sides**

Scalene:

Isosceles:

Equilateral:

**Δ Sum Thm.**

**Types of Triangles by Angles**

Acute:

Right:

Obtuse:

Equiangular:

**Methods to prove that two triangles are congruent (Draw a picture for each)**

1)\_\_\_\_\_\_ ≅ 2)\_\_\_\_\_\_≅

3)\_\_\_\_\_\_≅ 4)\_\_\_\_\_\_≅

5) \_\_\_\_\_\_≅

**Ext Angle Thm.**

****

**IS FOLLOWED BY**

CPCTC means

**Components of an Isosceles Triangle**

\_\_\_\_\_\_\_: The congruent sides.

\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_: The angle formed by the legs.

\_\_\_\_\_\_\_\_: The third side (not a leg)

\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_: The two angles adjacent to the base.

**Base Angles Theorem**

**Base Angles Theorem Converse:**

If a triangle is equilateral, then it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

If a triangle is equiangular, then it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Each angle in an equiangular triangle measures \_\_\_\_\_\_\_\_.

**Ch 5 Relationships within Triangles**

**Mid-segment theorem**

The segments connecting the midpoints of two sides of a Δ are:

a)

b)

**Points of Concurrency**

The circumcenter is where the \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a triangle meet.

The incenter is where the \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_ meet.

The centroid is where the \_\_\_\_\_\_\_\_\_\_\_\_\_ meet.

The orthocenter is where the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ meet.

**Median**

A segment from one \_\_\_\_\_\_\_\_\_\_ of the triangle to the \_\_\_\_\_\_\_\_\_\_\_\_ of the opposite side

**Circumcenter Theorem**: The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a triangle meet at a point \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of a triangle.

**Incenter Theorem**: The \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ of a triangle meet at a pt that is \_\_\_\_\_\_\_\_\_\_\_\_ from the \_\_\_\_\_\_\_\_ of a triangle.

**Centroid Theorem**: The \_\_\_\_\_\_\_\_\_\_\_\_\_ of a triangle meet at a point 2/3 the distance from each vertex to the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the opposite side.

**Triangle Inequality Theorem**

Given three lengths, a triangle is formed when the sum of any two lengths is \_\_\_\_\_\_\_\_\_\_\_\_\_\_ than the third length.

SM + MED > LARGE

**In any triangle…**

The \_\_\_\_\_\_\_\_ side is across from the largest ∠.

The \_\_\_\_\_\_\_\_\_\_ side is across from the smallest ∠.

**Perpendicular Bisector**

A segment, ray, line or plane that is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a segment at its \_\_\_\_\_\_\_\_\_\_\_\_\_.

**Altitude**

The \_\_\_\_\_\_\_\_\_\_\_\_\_ segment from one \_\_\_\_\_\_\_\_\_\_\_\_ of the triangle to the line that contains the opposite side.

**Hinge Theorem:**

**Hinge Theorem Converse**:

**Ch 6 Similarity**

**Similar Polygons**

Two polygons such that the corresponding angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

and the corresponding sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Symbol for Similarity: **\_\_\_\_\_\_** Similarity Statement: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Scale Factor**

**\_\_\_\_\_\_\_\_\_\_\_\_\_** of corresponding side lengths.

**Methods to prove that two triangles are congruent (Draw a picture/example for each)**

1 )\_\_\_\_\_\_\_~ 2) \_\_\_\_\_\_~ 3) \_\_\_\_\_\_~

**Perimeter of Similar Polygons Theorem**

If two polygons are similar, then the ratio of their \_\_\_\_\_\_\_\_\_\_\_ is equal to the ratios of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_.



**Ch 7 Right Triangles & Trigonometry**

**Pythagorean Theorem**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ where c is the hypotenuse, and the legs are a and b.

**Geometric Mean Altitude Theorem**

The \_\_\_\_\_\_\_\_\_\_\_ is the geometric mean of the two segments of the hypotenuse.

**Converse of the Pythagorean Theorem**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ triangle is formed when

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ triangle is formed when

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ triangle is formed when

**Geometric Mean Leg Theorem**

The \_\_\_\_\_\_ is the geometric mean of the hypotenuse and the segment of the hypotenuse adjacent to the leg.

**45°-45°-90° Triangle Theorem**

**30°-60°-90° Triangle Theorem**

**Trig Ratios**

Used to find \_\_\_\_\_\_\_\_\_\_\_.

Sin Ɵ= \_\_\_\_\_\_

Tan Ɵ= \_\_\_\_\_\_

Cos Ɵ= \_\_\_\_\_

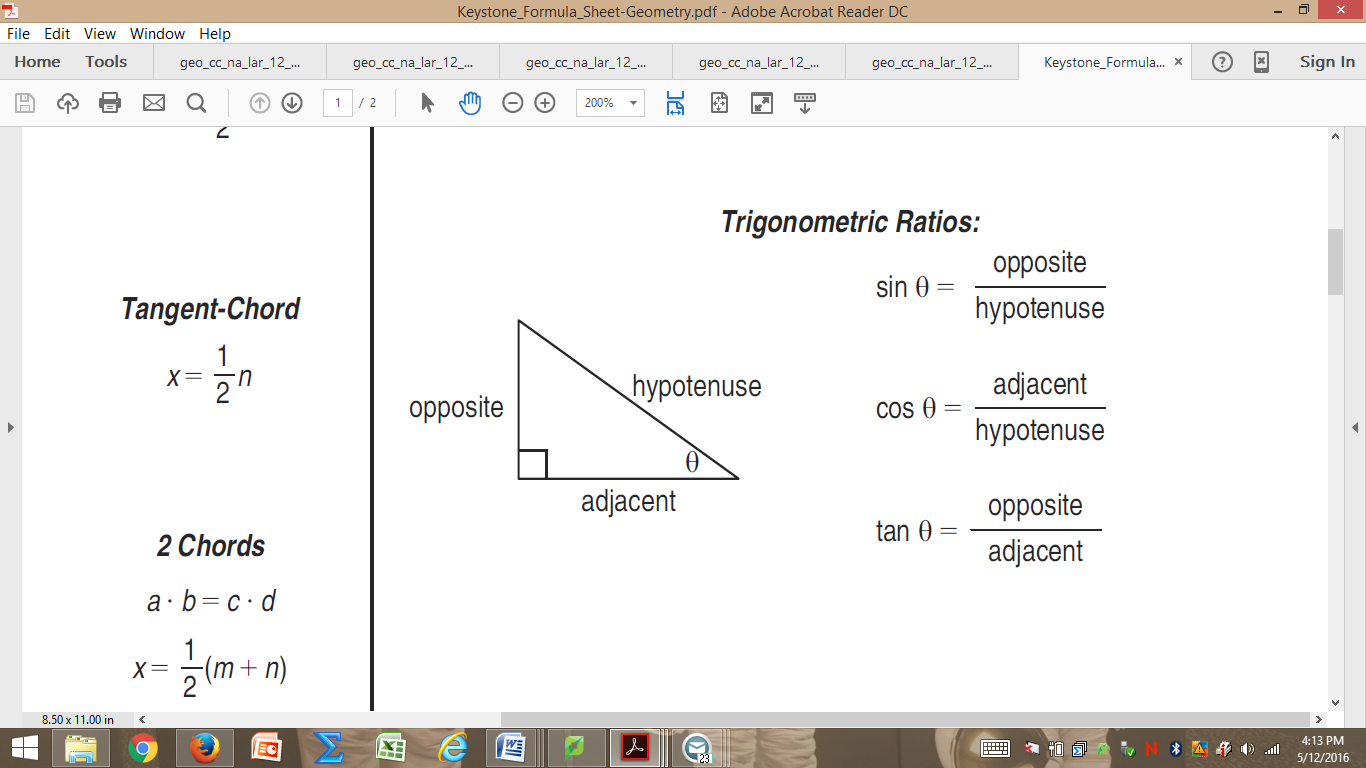
**Inverse Trig Ratios**

Used to find \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**To solve a right triangle you must find: ALL \_\_\_\_\_\_\_\_\_\_ and ALL \_\_\_\_\_\_\_\_\_\_\_**

**Angle of Elevation**

**Angle of Depression**



**Ch 8 Polygons & Quadrilaterals**

**\_\_\_\_\_\_\_\_\_\_ 🡪NO OPPOSITE SIDES PARALLEL**

2 pairs of consecutive sides are ≅

One pair of opp. Angles ≅

**ONE SET OF OPPOSITE SIDES PARALLEL**

**1) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**2) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Pair of ≅ legs and 2 pairs of ≅ base angles.

Diagonals are congruent.

**Polygon Interior Angle Sum Theorem**

**The Polygon EXTERIOR Angle Sum always equals \_\_\_\_\_\_\_\_.**

**Regular Polygon**

A polygon with all \_\_\_\_\_\_\_ congruent and all \_\_\_\_\_\_\_\_

congruent.

Example: Stop Sign

Square

**Trap.** **Midseg. Thm**

To find the midsegment add the \_\_\_\_\_\_ and then divide by \_\_\_.

**BOTH SETS OF OPPOSITE SIDES ARE PARALLEL**

**Parallelogram**

1.Opposite sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Opposite sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. Opposite angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. Consecutive angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. Diagonals \_\_\_\_\_\_\_\_\_\_\_\_\_ each other

**Rectangle**

All properties of a parallelogram plus

1. All angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. Diagonals are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Rhombus**

All properties of a parallelogram plus

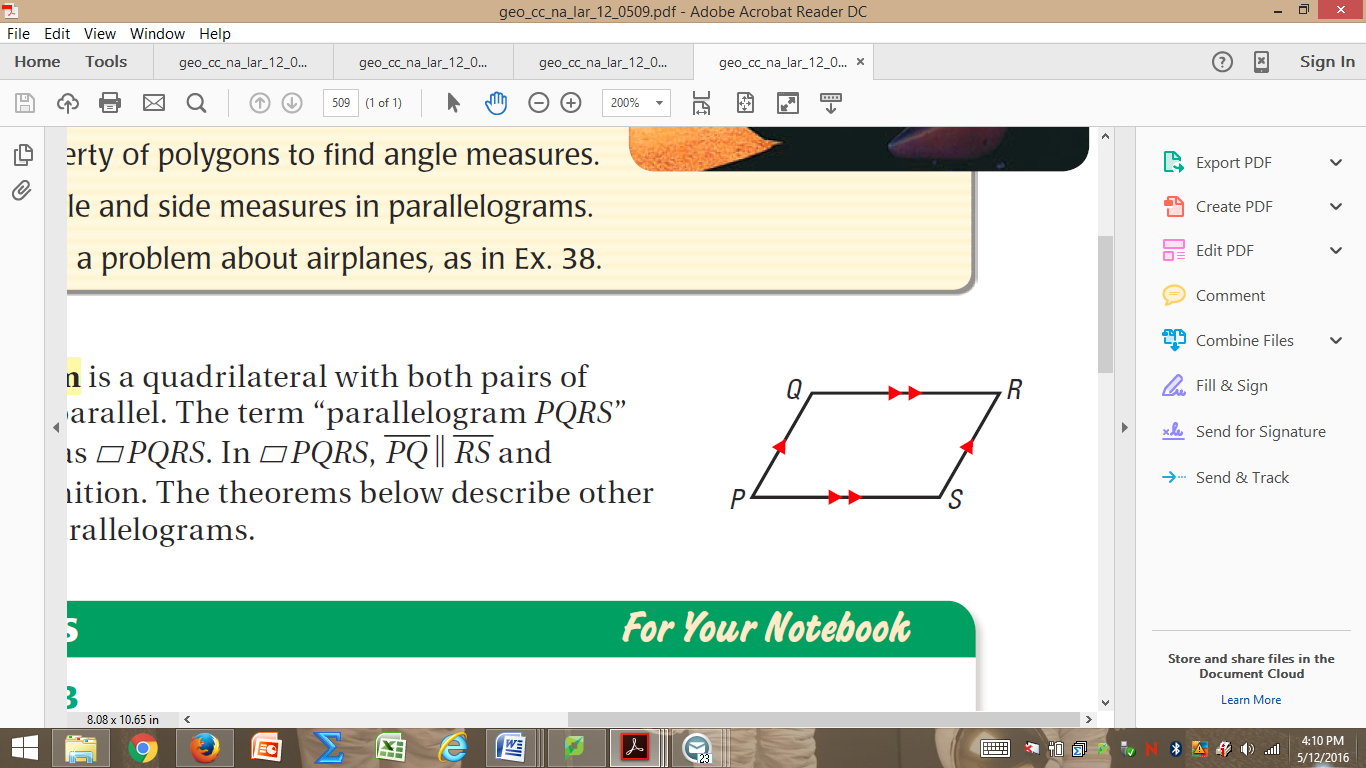
1. All sides are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

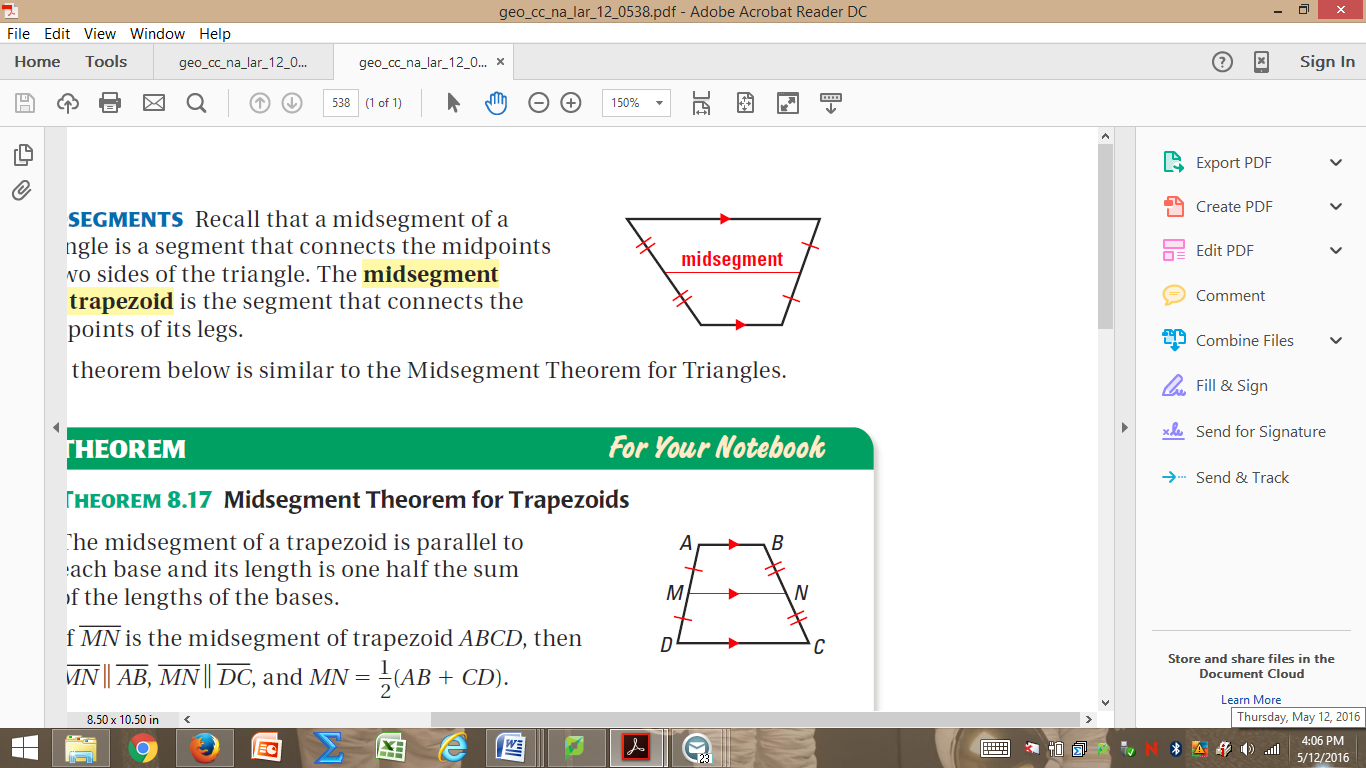
2. Diagonals are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

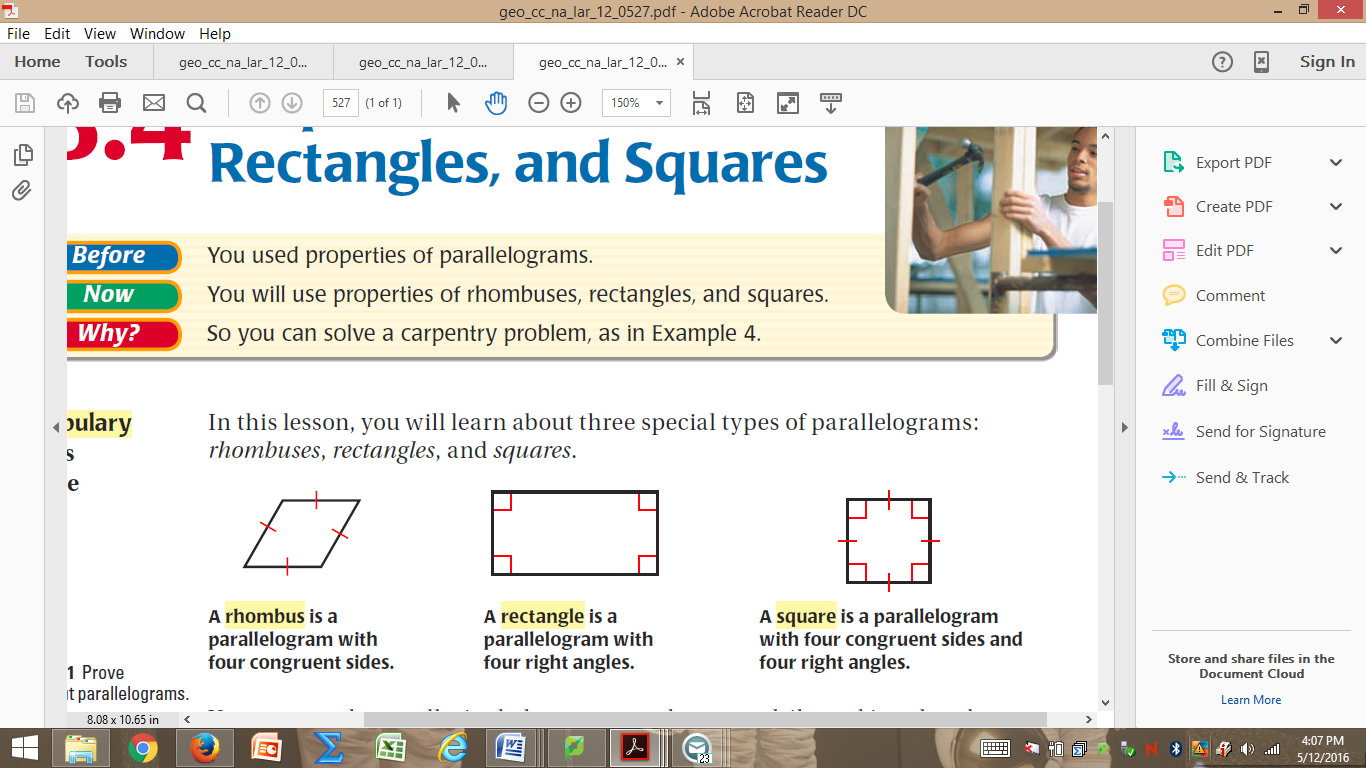
3. Diagonals bisect the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

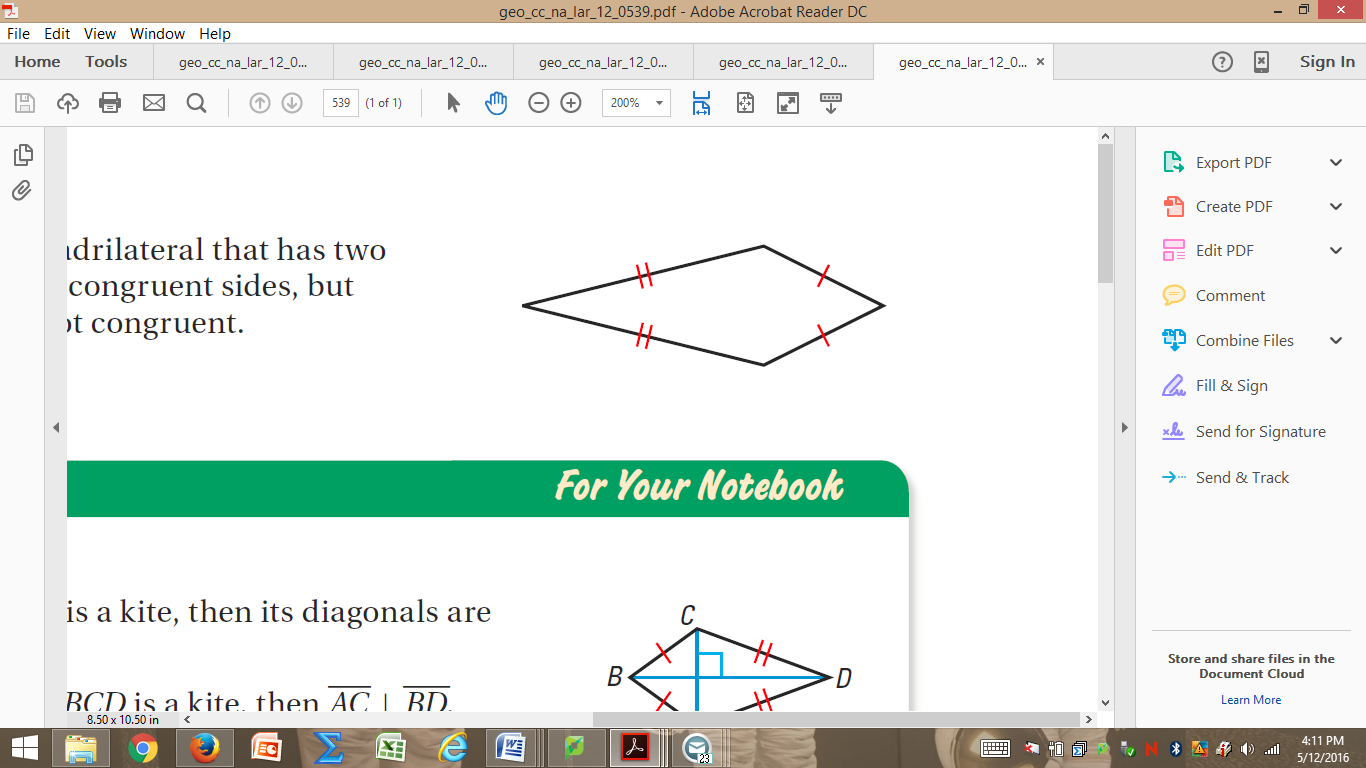
**Square**

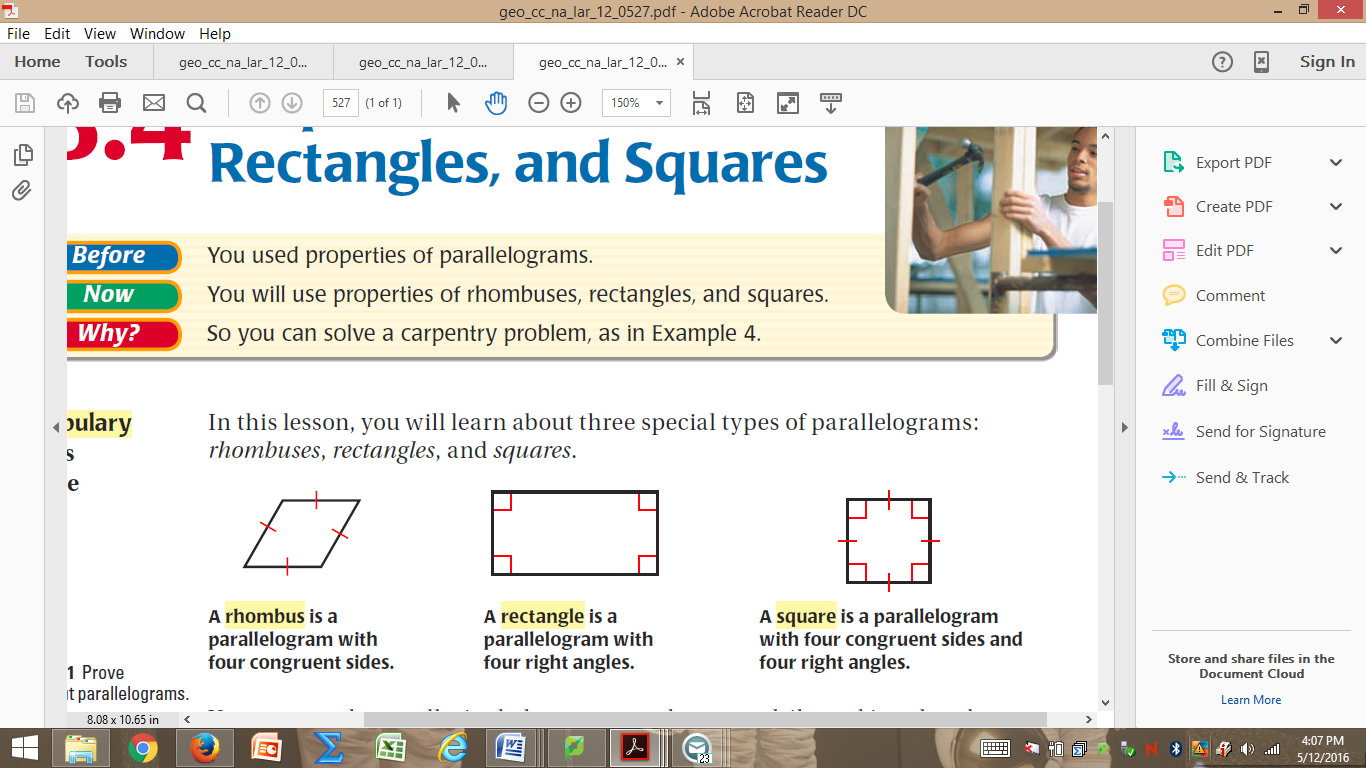
All properties of parallelogram, rhombus, and rectangle.

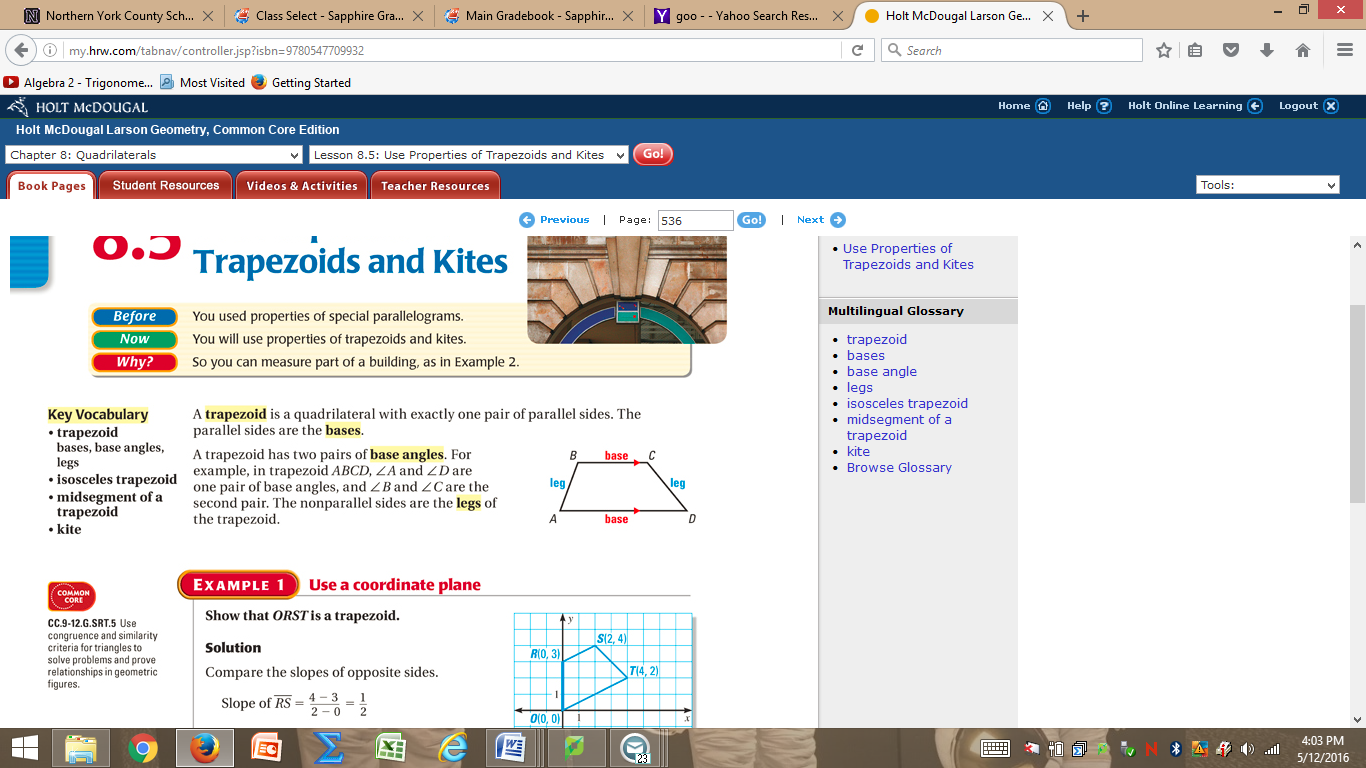


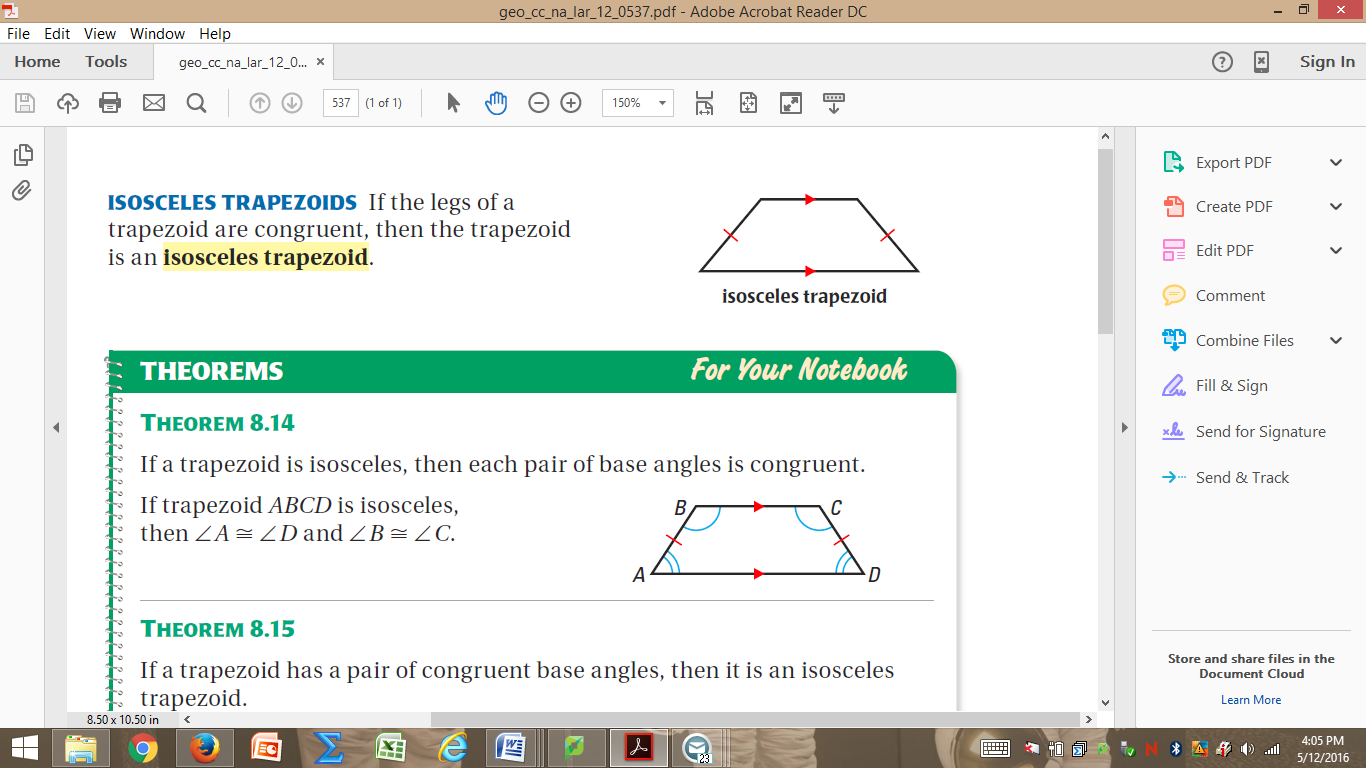
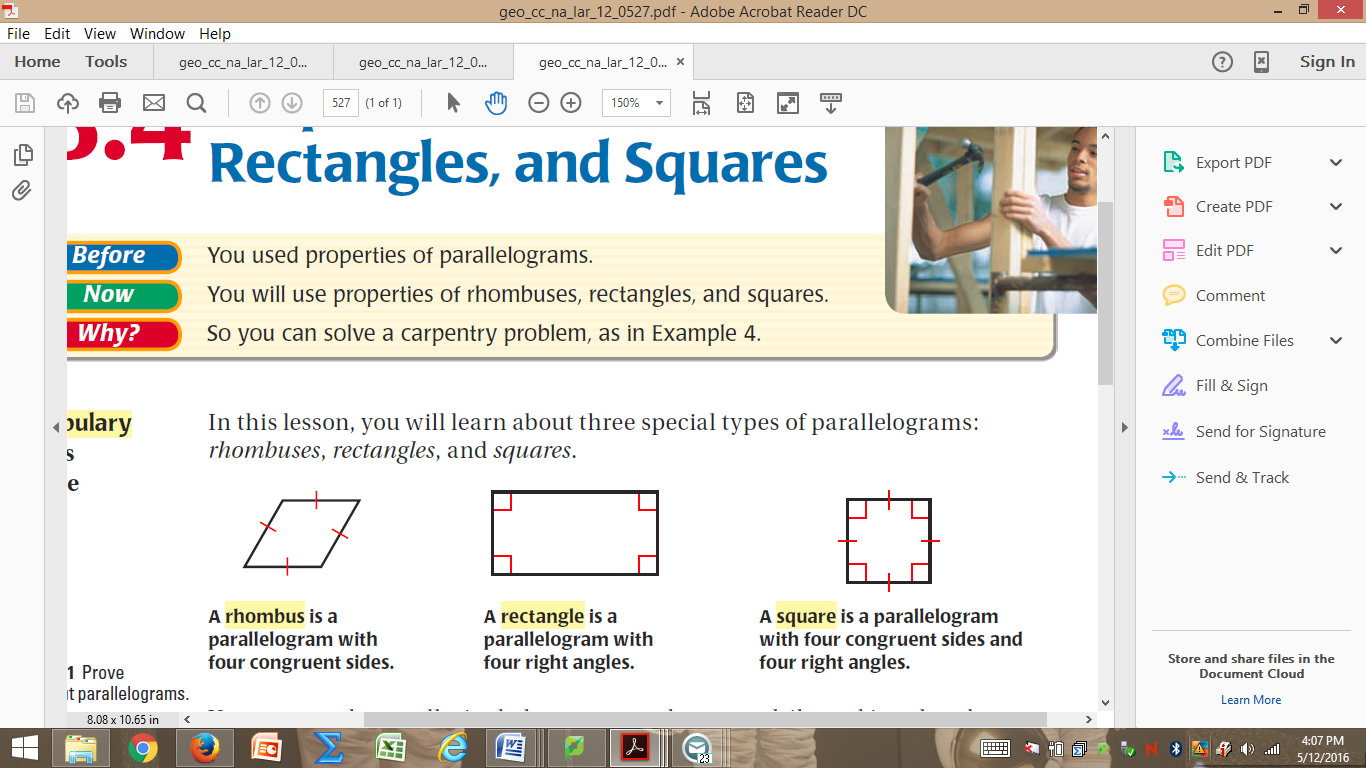










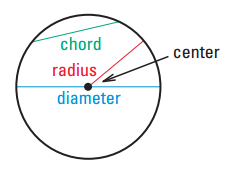


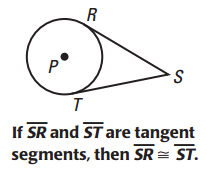
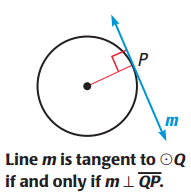
**Ch 10 Circles**

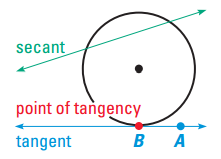
**Parts of a Circle**

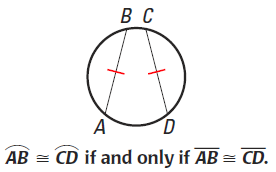
Tangent segments from a common external point are \_\_\_\_\_\_\_\_\_\_\_\_\_.

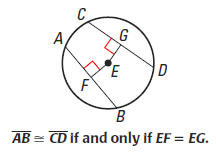
A line is tangent to a circle IFF the line is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to a radius of a circle at its \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the circle.

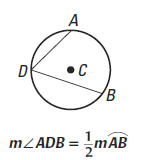










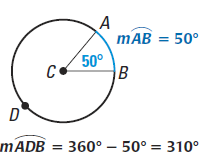


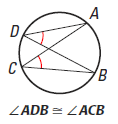
The measure of a minor arc is equal to the measure of the \_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_.

The measure of a major arc is the difference between \_\_\_\_\_ and the measure of the related minor arc.

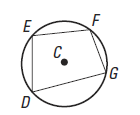
The measure of the entire circle is \_\_\_\_\_\_\_.

The measure of a semicircle is \_\_\_\_\_\_\_.

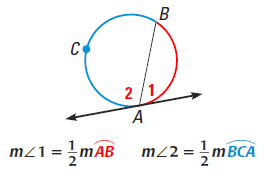




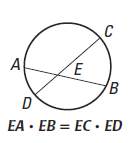
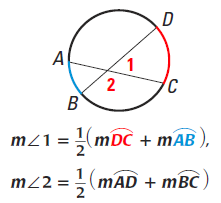
If two inscribed angles of a circle intercept the \_\_\_\_\_\_ arc, then the angles are \_\_\_\_\_\_\_\_\_\_\_.



A quadrilateral can be inscribed in a circle IFF its \_\_\_\_\_\_\_\_\_\_\_\_\_ angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

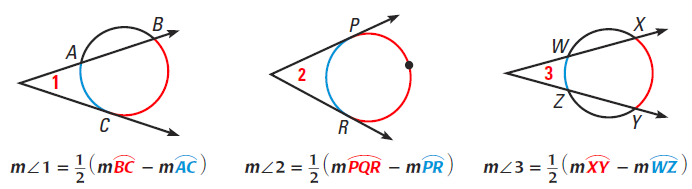


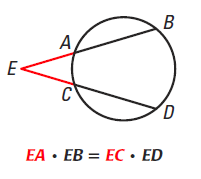
If a tangent and a chord intersect at a point on a circle, then the measure of each angle formed is \_\_\_\_\_\_\_\_ the measure of its intercepted \_\_\_\_\_\_\_\_.



If two chords intersect \_\_\_\_\_\_\_\_\_ a circle, the measure of each angle is \_\_\_\_\_\_ the sum of the measures of the arcs intercepted by the angle and its \_\_\_\_\_\_\_\_\_\_\_\_\_\_ angle.

If a tangent and a secant, two tangents, or two secants intersect \_\_\_\_\_\_\_\_\_\_\_\_ a circle, then the measure of the angle is \_\_\_\_\_\_\_\_\_ the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the measures of the intercepted \_\_\_\_\_\_\_\_\_\_.





**Standard Equation of a Circle**

The standard equation of a circle with center *(h, k)* and radius *r* is:

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

