*Geometry 22* Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per: \_\_\_\_\_

**6.2 Properties of Parallelograms - Intro**

Objectives – Students will be able to solve problems using relationships among sides, angles, and diagonals of parallelograms.

**Parallelogram** (defn) – a quadril. with both pairs of opposite sides parallel Symbol:

**Opposite Sides** – sides that do not share a vertex.

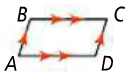
* Name another pair of opposite sides from the

diagram. \_\_\_\_\_\_and\_\_\_\_\_\_

**Opposite Angles** – angles that do not share a side.

* Name another pair of opposite angles from the

diagram. \_\_\_\_\_\_and\_\_\_\_\_\_

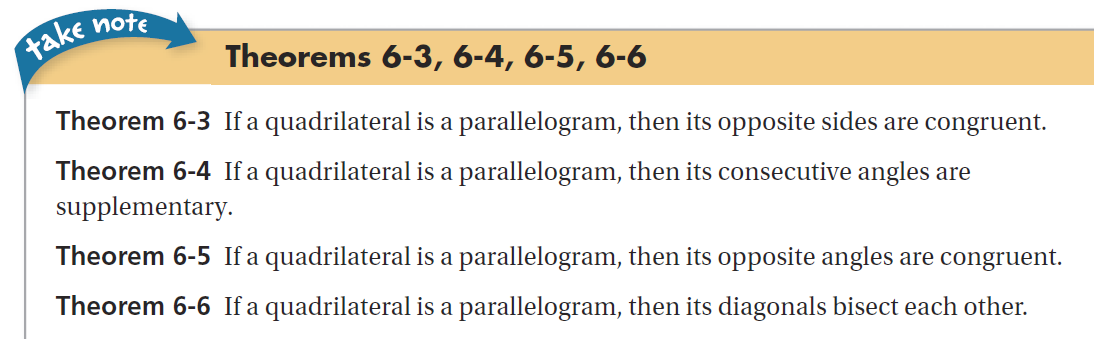
**Consecutive Angles -** share a common side. (one right after the other, clockwise or counterclockwise)

Name all pairs of consecutive angles in the figure at right.

<A is consecutive with <\_\_\_\_\_ and <\_\_\_\_\_

<B is consecutive with <\_\_\_\_\_ and <\_\_\_\_\_

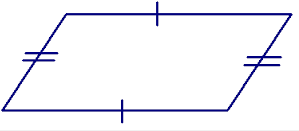
<C is consecutive with <\_\_\_\_\_ and <\_\_\_\_\_



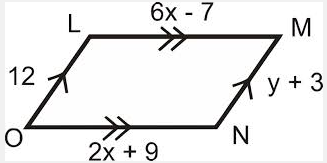
<D is consecutive with <\_\_\_\_\_ and <\_\_\_\_\_

**4 Properties of Parallelograms;**

* **OPPOSITE SIDES ARE CONGRUENT** – therefore they are equal lengths

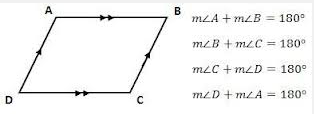
🡪 write an equation with sides set equal to each other

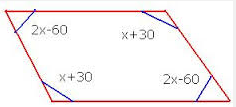
Example:

 Solve for x; Solve for y;

LM = ON LO = MN

* **CONSECUTIVE ANGLES ARE SUPPLEMENTARY**

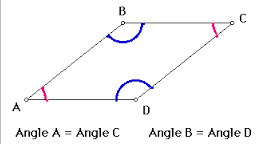
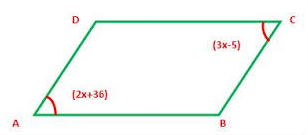
\*\*This is true because they are same side interior angles with parallel lines cut by a transversal!

Example:

Write equation to solve for x;

\_\_\_\_\_\_\_\_ + \_\_\_\_\_\_\_\_\_\_ = 180

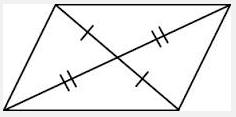
* **OPPOSITE ANGLES ARE CONGRUENT**



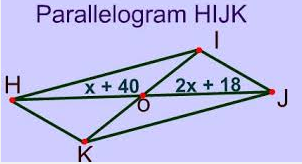
Example: Write the equation to solve for x

m<A = m<C

* **DIAGONALS BISECT EACH OTHER**



Example: Write the equation to solve for x

 HO = OJ

**PRACTICE:** 

