

# **Chapter 8 § 2**

## **Parallelograms**

### **Definitions :**

**Quadrilaterals- four sided polygons.**

**Parallelogram – a quadrilateral with both pair of sides parallel.**

**Diagonals - the segments that connect any two vertices of the polygon.**

### **Theorems :**

**(8-3) – Opposite sides of a parallelogram are congruent.**

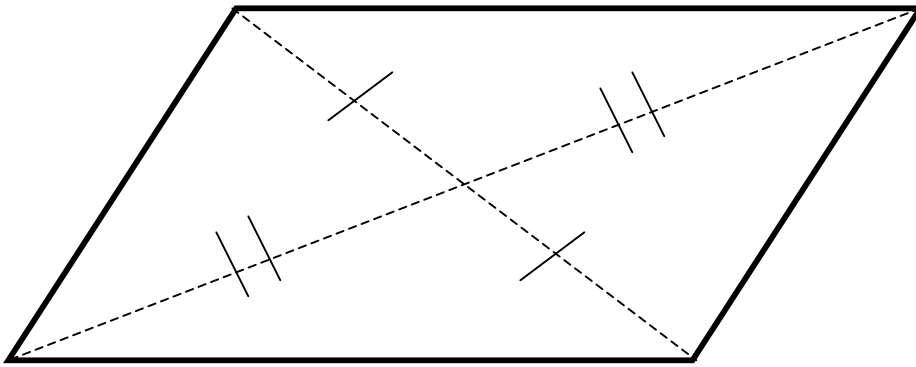
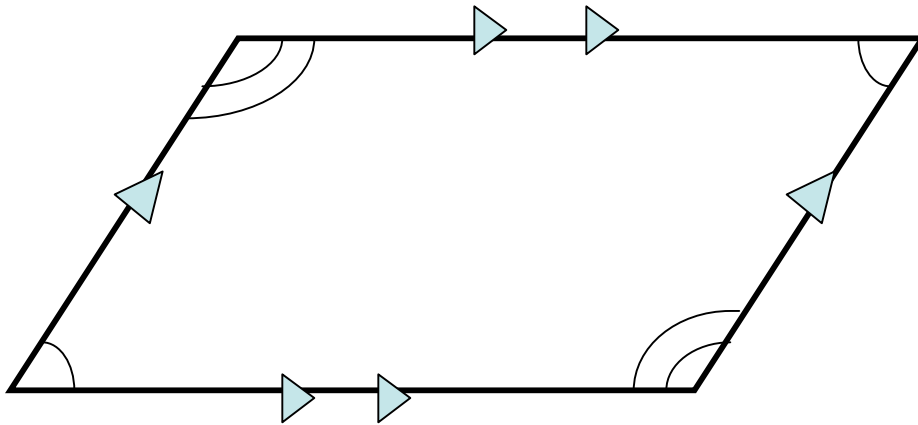
**(8-4) – Opposite angles of a parallelogram are congruent.**

**(8-5) – Consecutive angles in a parallelogram are supplementary.**

**(8-6) – If a parallelogram has one right angle, it has four right angles.**

**(8-7) – The diagonals of a parallelogram bisect each other.**

**(8-8) – Each diagonal of a parallelogram separates the parallelogram into two congruent triangles.**



**WXYZ is a parallelogram,  $m\angle ZWX = b$ , and  $m\angle WXY = d$ .  
Find the values of  $a$ ,  $b$ ,  $c$ , and  $d$ .**

$$a = 15$$

$$b = 31 + 18 = 49$$

$$\frac{2c = 22}{2} = \frac{\quad}{2}$$

$$c = 11$$

$$m\angle WXY + 18^\circ + 31^\circ = 180^\circ$$

$$d + 49 = 180$$

$$\begin{array}{r} d + 49 = 180 \\ -49 \quad -49 \\ \hline \end{array}$$

$$d + 0 = 131$$

$$d = 131$$

