

## **Parallelogram:**

A quadrilateral with both pairs of opposite sides parallel. It means that a parallelogram is a quadrilateral with opposite sides parallel.

It is the "parent" of some other quadrilaterals, which are obtained by adding restrictions of various kinds:

### **Rectangle:**

- A parallelogram but with all four interior angles fixed at  $90^\circ$  or right angle is called as Rectangle.

### **Rhombus:**

- A parallelogram but with all sides equal in length or measurement is termed as Rhombus.

### **Square:**

- A parallelogram but with all sides equal in length and all angles fixed at  $90^\circ$  or right angle is known as Square.

## **Properties of a parallelogram:**

### **Base:**

Any side can be considered a base. Choose any one you like. If used to calculate the area the corresponding altitude must be used. In any parallelogram, one of the four possible bases is there and its corresponding altitude has been chosen.

**Altitude (height):** The altitude (or height) of a parallelogram is the perpendicular distance from the base to the opposite side which may have to be extended.

**Area:** The area of a parallelogram can be found by multiplying a base by the corresponding altitude.

**Perimeter:** The distance around the parallelogram.

### **Parallelogram Facts:**

These facts are true for parallelograms and the descendant shapes: square, rectangle and rhombus.

#### **Opposite sides are congruent (equal in length).**

The opposite sides of parallelogram are always the same length.

#### **The diagonals bisect each other:**

Each diagonal cuts the other diagonal into two equal parts. The point of intersection of two diagonals of a parallelogram is always the midpoint of the two vertices.

#### **Opposite angles are equal:**

In a parallelogram the opposite angles are always equal.

## **Consecutive angles are supplementary:**

The consecutive angles are always supplementary or their sum is always equal to  $180^\circ$ .

<http://tec.edu.pk>  
[akber.khursheed@gmail.com](mailto:akber.khursheed@gmail.com)