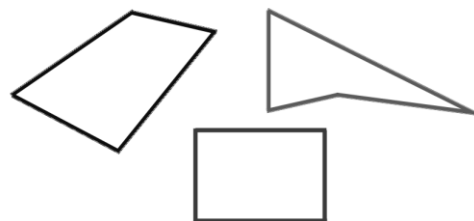


Name: _____

Quadrilaterals

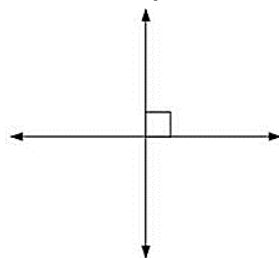
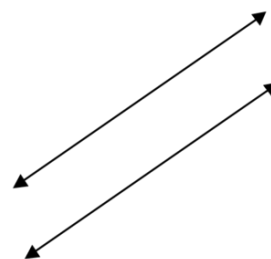
A **quadrilateral** is a 4-sided polygon. Quadrilaterals also have 4 interior (inside) angles. The measures of these four angles sum to 360° .



Some quadrilaterals have special properties that make them different from other quadrilaterals. Because of this they are given special names.

In order to understand what makes certain quadrilaterals special, we must first understand what we mean by parallel and perpendicular lines.

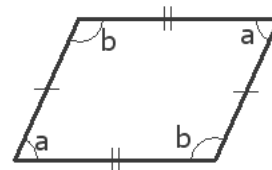
Two lines that *never* cross are **parallel** lines. Remember that a line goes on forever in both directions. So parallel lines must go on and on forever without meeting. They are everywhere the same distance apart.



Perpendicular lines cross to form a right (90°) angle. Actually, when perpendicular lines cross, they form 4 right angles. Can you explain why the other 3 angles must also be right (90°) angles?

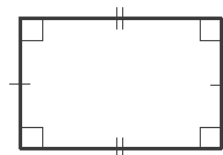
Back to quadrilaterals. Quadrilaterals can have two pairs of parallel sides, one pair, or no pair. They can have 1 right angle, 2 right angles, 4 right angles or no right angles. Let's see:

A **parallelogram** has 2-pairs of parallel sides. The *opposite sides* of a parallelogram are *parallel* and *equal* in length. The *opposite angles* of a parallelogram are also *equal*.



Remember, the sides of a parallelogram are line segments. A line segment is part of a line. Two line segments are parallel if, and only if, the lines that they are part of are parallel.

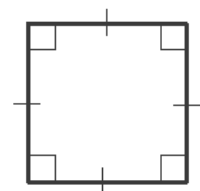
A **rectangle** is a parallelogram that has 4 right (90°) angles.



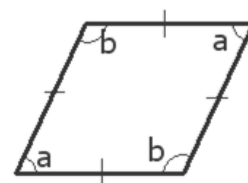
Name: _____

Quadrilaterals

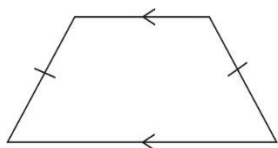
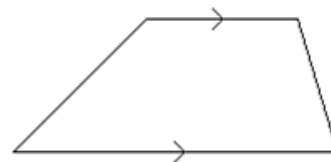
A **rhombus** is a parallelogram in which all 4 sides are of equal length. A rhombus is sometimes called a *diamond*.



A **square** is a parallelogram with 4 equal sides and 4 right (90°) angles. A square is both a rectangle and a rhombus. Why?

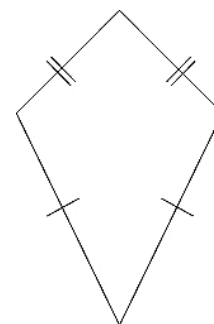


A **trapezoid** is a quadrilateral with *1 pair* of parallel sides. (This distinguishes it from all the special quadrilaterals that we have talked about so far—those were all parallelograms with 2 pairs of parallel sides.)



The *parallel sides* of a trapezoid are not equal in length. But the other two sides (called 'legs') may be. If the legs are of equal length, we call it an *isosceles trapezoid*. Do you remember what a triangle with two equal sides ('legs') is called?

The quadrilateral on the right is called a **kite**. It has two adjacent sides that are the same length as each other, and the other two adjacent sides are of same length as each other. 'Adjacent' means that the equal sides are next to, not opposite, each other.



1. Name each quadrilateral and *explain* your answer:

