A quadrilateral is any four-sided polygon. There are six special cases of quadrilaterals with which students should be familiar.

- **Trapezoid** – A quadrilateral with at least one pair of parallel sides.

- **Parallelogram** – A quadrilateral with both pairs of opposite sides parallel.

- **Rectangle** – A quadrilateral with four right angles.

- **Rhombus** – A quadrilateral with four sides of equal length.

- **Square** – A quadrilateral with four right angles and four sides of equal length.

- **Kite** – A quadrilateral with two distinct pairs of consecutive sides of equal length.

### Names of Basic Angles

Acute angles are angles with measures between (but not including) 0º and 90º, right angles measure 90º, and obtuse angles measure between (but not including) 90º and 180º. A straight angle measures 180º.

Students use protractors to measure the size of angles.

For more information see the Math Notes box in Lesson 8.3.1 of the *Core Connections, Course 2* text.
Example 1

For the figure at right, describe the quadrilateral using all terms that are appropriate.

It is a rectangle since it has four right angles.
It is a parallelogram since it has two pairs of parallel sides.
It is also a trapezoid since it has at least one pair of parallel sides.

Example 2

Describe the angle at right as right, obtuse or acute. Estimate the size of the angle and then use a protractor to measure the angle. It may be necessary to trace the angle and extend the sides.

This angle opens narrower than a right angle so it is acute. Using a protractor shows that the angle measures 60º.

Problems

For each figure, describe the quadrilateral using all terms that are appropriate. Assume that sides that look parallel are parallel.

1.  
2.  
3.  
4.  
5.  
6.
Describe the angles below as right, obtuse or acute. Estimate the size of the angle and then use a protractor to measure the angle.

7. acute, 25°

8. obtuse, 110°

9. obtuse, 153°

10. right, 90°

11. acute, 80°

12. acute, 82°

Answers

1. parallelogram, trapezoid

2. rhombus, parallelogram, trapezoid

3. trapezoid

4. rectangle, parallelogram, trapezoid

5. square, rhombus, rectangle, parallelogram, trapezoid

6. not a quadrilateral