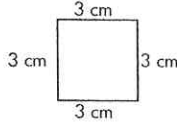
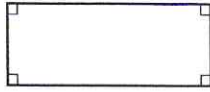


Lesson 9.1 Categories and Subcategories of Figures

Regular polygons are polygons whose sides and angles are equal.



A **rectangle** has 4 right angles.



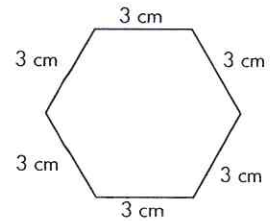
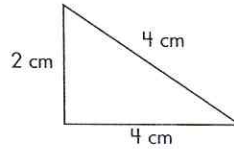
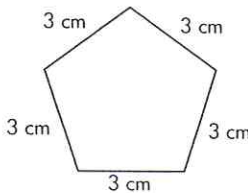
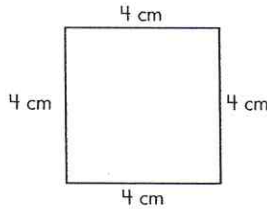
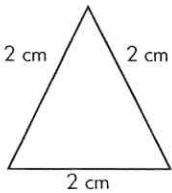
A **quadrilateral** has 4 sides.



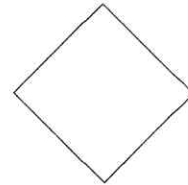
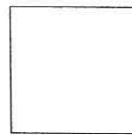
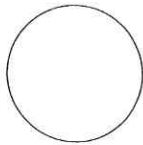
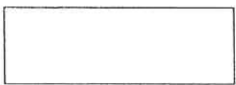
A **parallelogram** has 4 sides, and both sets of opposite sides are parallel.



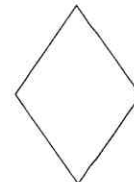
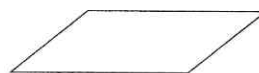
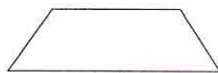
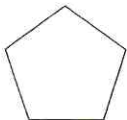
1. Circle all the regular polygons.



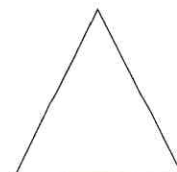
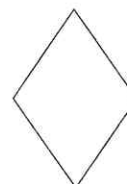
2. Circle all the rectangles.



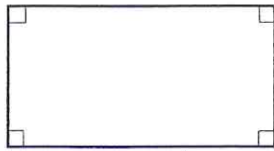
3. Circle all the quadrilaterals.



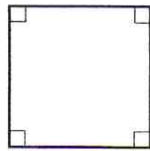
4. Circle all the parallelograms.



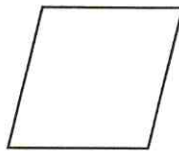
Lesson 9.2 Classifying Quadrilaterals



rectangle



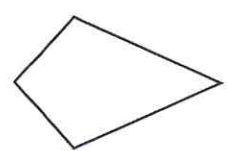
square



rhombus



trapezoid



kite

A **rectangle** has four right angles, two pairs of parallel sides, and two pairs of equal sides.

A **square** is a rectangle with four equal sides.

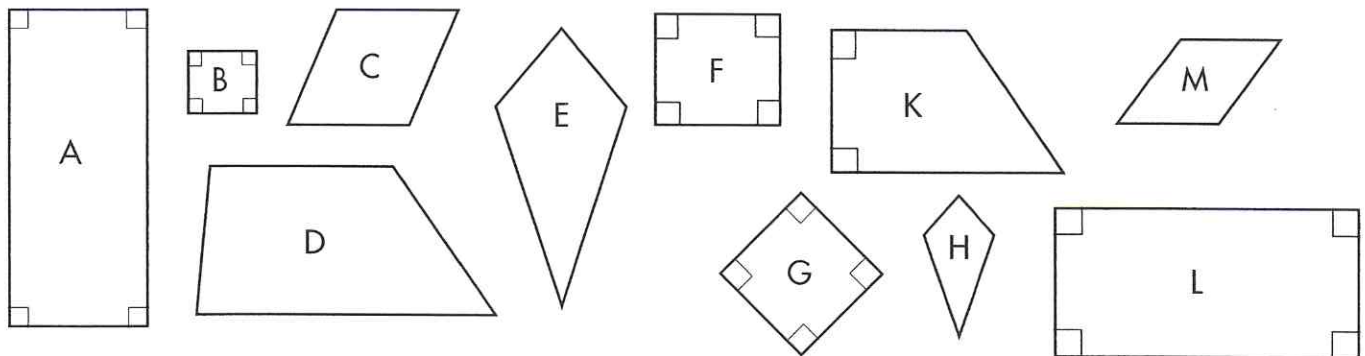
A **rhombus** has two pairs of parallel sides and four equal sides.

A square is a special kind of rectangle and also a special kind of rhombus.

A **trapezoid** has only one pair of parallel sides.

A **kite** has two pairs of equal sides but no parallel sides.

Use the figures below to answer each question. Letters may be used more than once. Some questions will have more than one answer. Some letters may not be used.

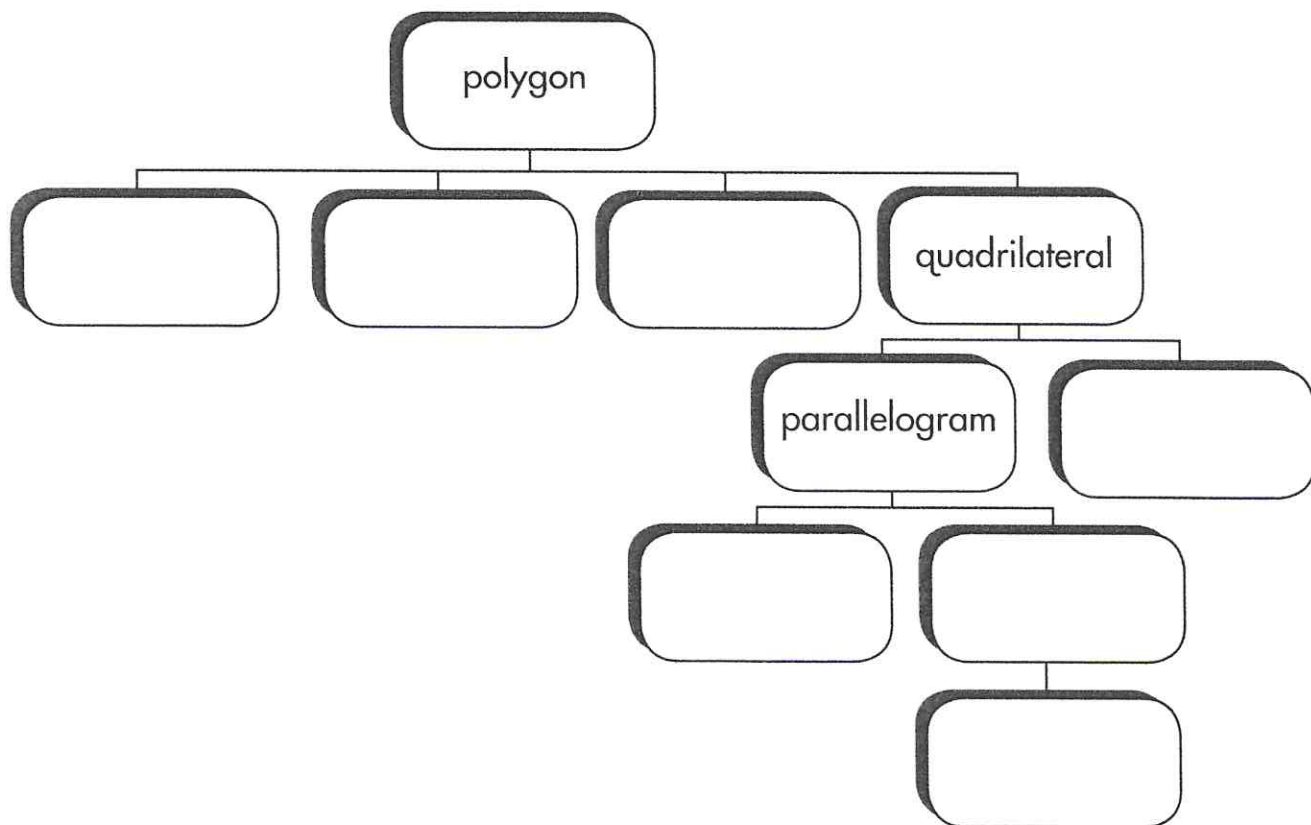


1. Which figure is a rectangle? _____
2. Which figure is a rhombus? _____
3. Which figure is a trapezoid? _____
4. Which figure is a square? _____
5. Which figure is a kite? _____
6. Which figure is both a rhombus and a rectangle? _____

Lesson 9.3 Hierarchy of Figures

polygon	a closed plane figure formed from line segments that meet only at their endpoints
triangle	a three-sided polygon
square	a parallelogram with four equal sides and four right angles
trapezoid	a quadrilateral with exactly one pair of parallel sides
quadrilateral	a four-sided polygon
rhombus	a parallelogram with all four sides equal in length
hexagon	a six sided polygon
parallelogram	a quadrilateral with both sets of opposites sides parallel
pentagon	a five-sided polygon
rectangle	a quadrilateral with two pairs of equal parallel sides and four right angles

Using the terms above, fill in the blanks to complete the hierarchy diagram.

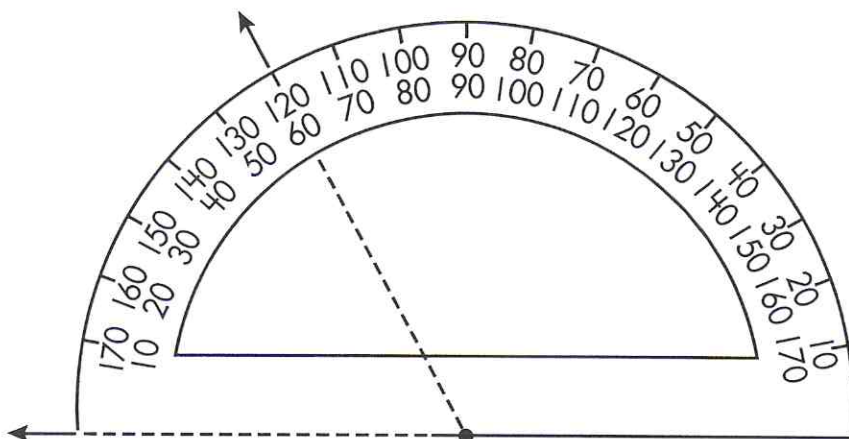


Lesson 9.4 Classifying Angles

A **protractor** is used to measure an angle. The angle is measured in degrees.

A **right angle** measures exactly 90° .

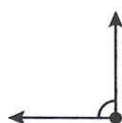
An **acute angle** measures less than 90° .



An **obtuse angle** measures greater than 90° but less than 180° .

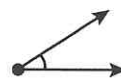
Identify each angle as *right*, *acute*, or *obtuse*.

1.



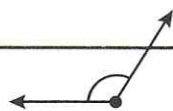
a
Type of Angle

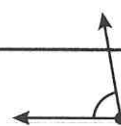
b



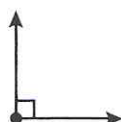
Type of Angle

2.





3.





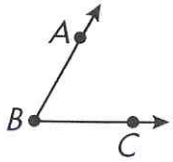
Lesson 9.4 Classifying Angles

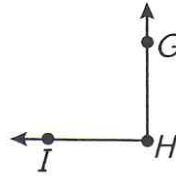
Use a protractor to measure each angle. Then, label each angle *right*, *acute*, or *obtuse*.

a

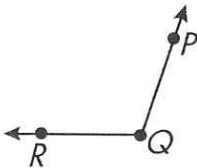
b

1.

 \angle _____ = _____

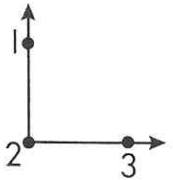
 \angle _____ = _____

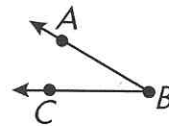
2.

 \angle _____ = _____

 \angle _____ = _____

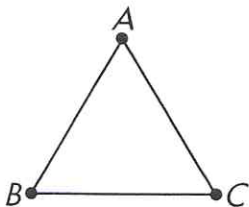
3.

 \angle _____ = _____

 \angle _____ = _____

Find the measure of each angle of the given triangle. Label each angle as *right*, *acute*, or *obtuse*.

4.

 \angle _____ = _____

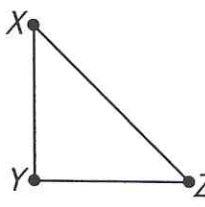
It is _____.

 \angle _____ = _____

It is _____.

 \angle _____ = _____

It is _____.

 \angle _____ = _____

It is _____.

 \angle _____ = _____

It is _____.

 \angle _____ = _____

It is _____.

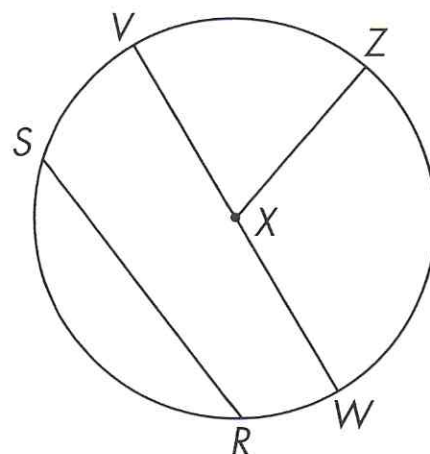
Lesson 9.5 Understanding Circles

The **origin** of a circle is a point inside the circle that is the same distance from any point on the circle. A circle is named by its origin.

A **radius** of a circle is a line segment with one endpoint at the origin and the other endpoint on the circle.

A **chord** is a line segment with both endpoints on the circle.

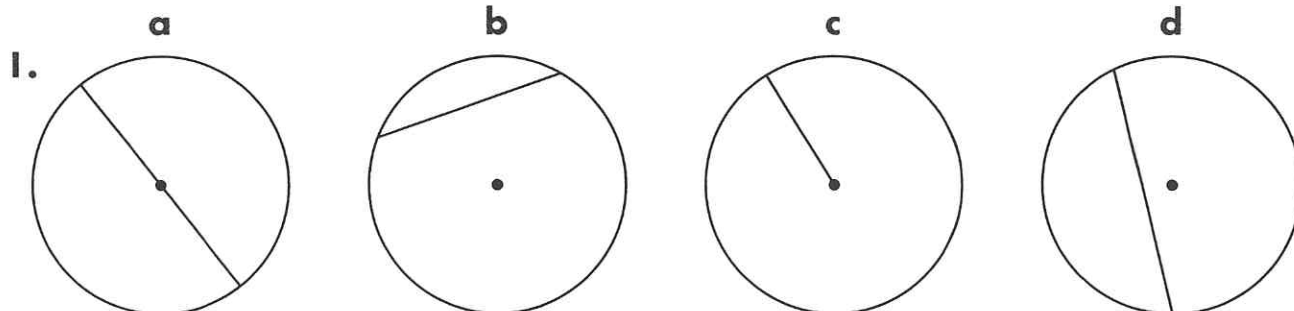
A **diameter** is a chord that passes through the origin of the circle.



Name a radius, chord, and diameter of circle X.

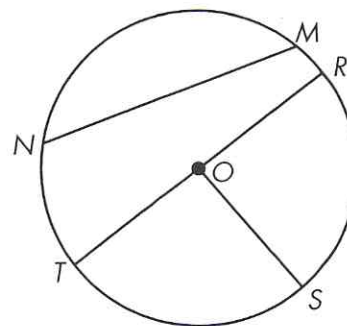
radius: \overline{XZ} , \overline{XV} , or \overline{XW} chord: \overline{VW} or \overline{SR} diameter \overline{VW}

Identify each line segment as *radius*, *chord*, or *diameter*.



Use the figure at the right to answer the questions.

2. Name the circle. _____
3. Name the origin. _____
4. Name a radius. _____
5. Name a chord. _____
6. Name a diameter. _____



7. Draw circle F , with radius \overline{FG} , diameter \overline{HK} , and chord \overline{LM} .