NAME _____

Lesson 1 Points, Lines, and Line Segments

A **point** can be represented by a dot. Point P is shown above.

Line AB (denoted $\overleftrightarrow{AB}$) names the line that passes through points A and B. Does $\overleftrightarrow{BA}$ name the same line as $\overleftrightarrow{AB}$? _____

Line segment MN (denoted $\overline{MN}$) consists of points M and N and all points on the line between M and N. Does $\overline{NM}$ name the same segment as $\overline{MN}$? _____

Complete the following as shown.

		a	*b*
1.		line CD or DC	$\overleftrightarrow{CD}$ or $\overleftrightarrow{DC}$
2.		line _____ or _____	_____ or _____
3.		line _____ or _____	_____ or _____
4.		line _____ or _____	_____ or _____

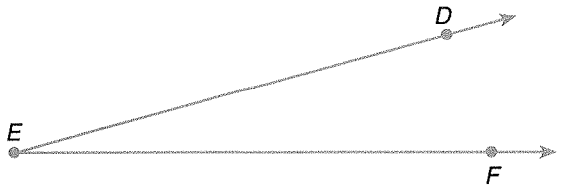
Complete the following as shown.

		a	*b*	*c*
5.		line segment EF or FE	$\overline{EF}$ or $\overline{FE}$	endpoints: E and F
6.		line segment _____ or _____	_____ or _____	endpoints: _____ and _____
7.		line segment _____ or _____	_____ or _____	endpoints: _____ and _____
8.		line segment _____ or _____	_____ or _____	endpoints: _____ and _____

NAME _____

Lesson 2 Rays and Angles

Ray AB (denoted $\overrightarrow{AB}$) consists of point A and all points on $\overrightarrow{AB}$ that are on the same side of A as B. The endpoint of $\overrightarrow{AB}$ is point _____.



An **angle** is formed by two rays that have a common endpoint. Angle DEF (denoted $\angle DEF$) is formed by rays $\overrightarrow{ED}$ and $\overrightarrow{EF}$. Does $\angle FED$ name the same angle? _____

Complete the following as shown.

1. 

ray *MN* *$\overrightarrow{MN}$* endpoint of ray: *M*

2. 

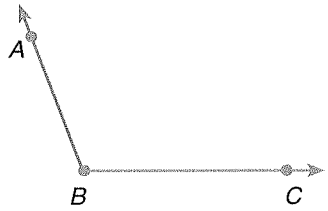
ray _____ _____ endpoint of ray: _____

3. 

ray _____ _____ endpoint of ray: _____

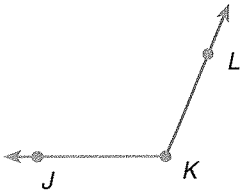
4. 

ray _____ _____ endpoint of ray: _____

5. 

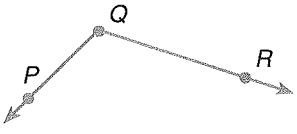
angle *ABC* or *CBA* *$\angle ABC$* or *$\angle CBA$*

rays *$\overrightarrow{BA}$* and *$\overrightarrow{BC}$*

6. 

angle _____ or _____ _____ or _____

rays _____ and _____

7. 

angle _____ or _____ _____ or _____

rays _____ and _____

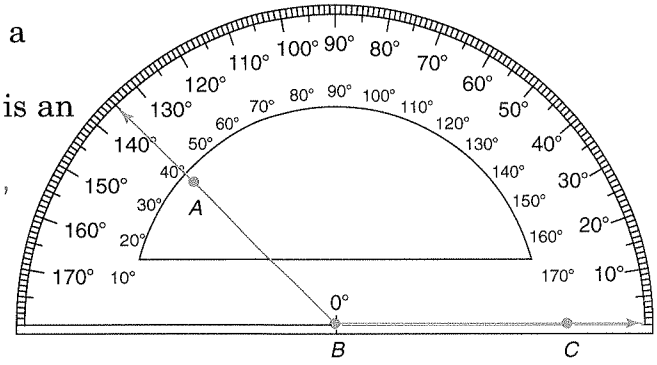
NAME _____

Lesson 3 Measuring Angles

You can use a protractor to find the measure of an angle.

If the measure of an angle is 90°, the angle is a right angle.
If the measure of an angle is less than 90°, it is an acute angle.
If the measure of an angle is greater than 90°, it is an obtuse angle.
The measure of $\angle ABC$ is 135°.

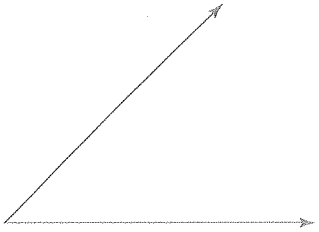
$\angle ABC$ is an obtuse angle.

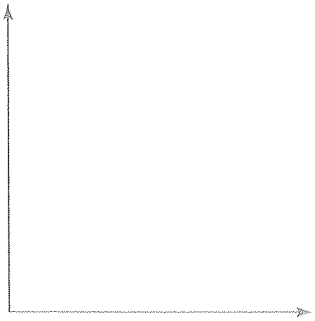


Find the measure of each angle. Write whether the angle is *right, acute,* or *obtuse.*

a *b*

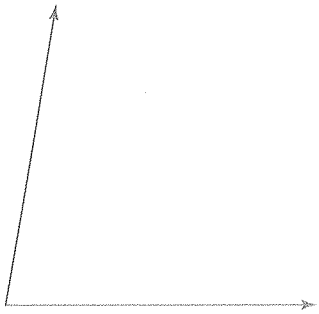
1.

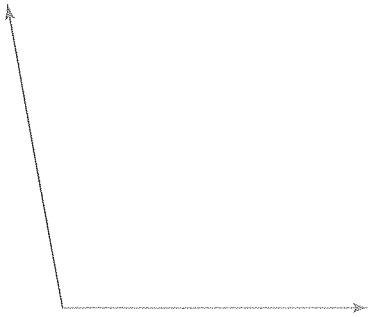




_____ _____ _____ _____

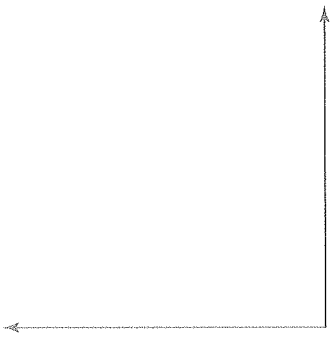
2.

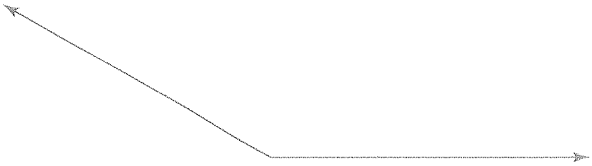




_____ _____ _____ _____

3.





_____ _____ _____ _____

CHAPTER 10

NAME _____

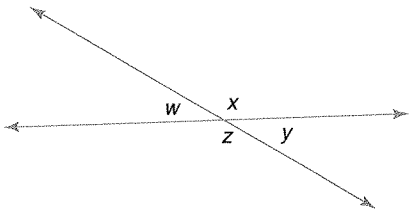
Lesson 4 Opposite and Supplementary Angles

When two straight lines intersect, they form opposite angles and supplementary angles.
Opposite angles always have the same measure.
Supplementary angles are two angles whose measures have a sum of 180°.

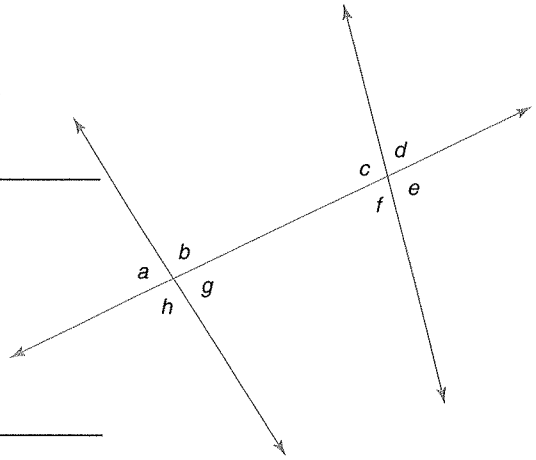
In the figure to the right, $\angle w$ and $\angle y$, $\angle x$ and $\angle z$ are both pairs of opposite angles.

There are four pairs of supplementary angles in the figure.

They are $\angle w$ and $\angle x$, $\angle x$ and $\angle y$, $\angle y$ and $\angle z$, $\angle z$ and $\angle w$.

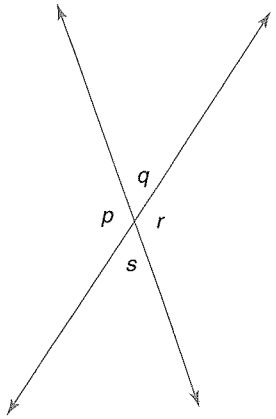


Identify the following.



1. Name an angle that is opposite to $\angle b$. _____
2. Name an angle that is supplementary to $\angle d$. _____
3. Name an angle that is opposite to $\angle f$. _____
4. Name an angle that is opposite to $\angle e$. _____
5. Name an angle that is supplementary to $\angle h$. _____
6. Name an angle that is supplementary to $\angle a$. _____

Use the figure shown at the right.



7. Name two pairs of opposite angles.

   _____

8. Name four pairs of supplementary angles.

   _____

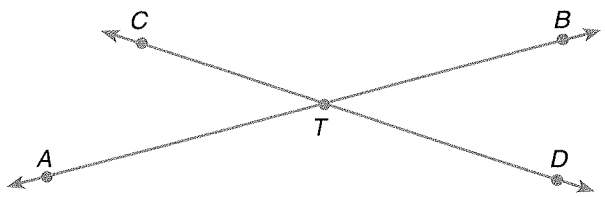
Solve.

9. Angles m and p are opposite angles. If $\angle p$ measures 115°, what is the measure of $\angle m$? _____

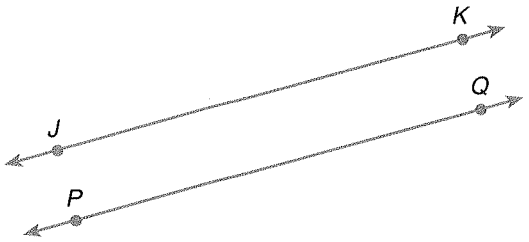
10. Angles j and k are supplementary angles. If $\angle j$ measures 62°, what is the measure of $\angle k$? _____

NAME _____

Lesson 5 Parallel and Intersecting Lines

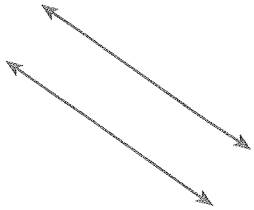
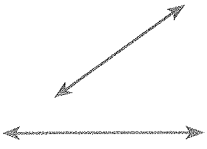


Lines like $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ are called **intersecting lines.** What point do $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$ have in common? _____



Lines like $\overleftrightarrow{JK}$ and $\overleftrightarrow{PQ}$ are called **parallel lines.** Will $\overleftrightarrow{JK}$ and $\overleftrightarrow{PQ}$ ever intersect, no matter how far extended? _____

Complete the following as shown.

		a *type of lines*		*b* *type of lines*
1.		parallel		intersecting
2.		_____		_____
3.		_____		_____

Answer the following.

4. In how many points do two parallel lines intersect? _____
5. Can two lines be parallel and also intersect? _____
6. In how many points can two lines intersect? _____
7. If $\overleftrightarrow{AB}$ is parallel to $\overleftrightarrow{CD}$, is $\overleftrightarrow{CD}$ parallel to $\overleftrightarrow{AB}$? _____

CHAPTER 10

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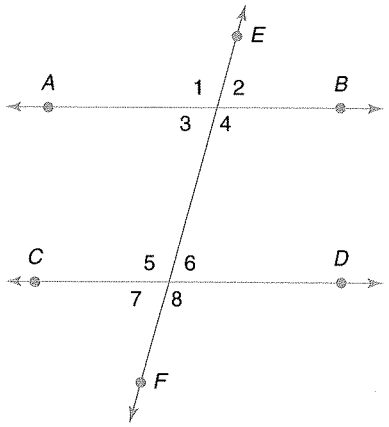
Lesson 6 Transversals

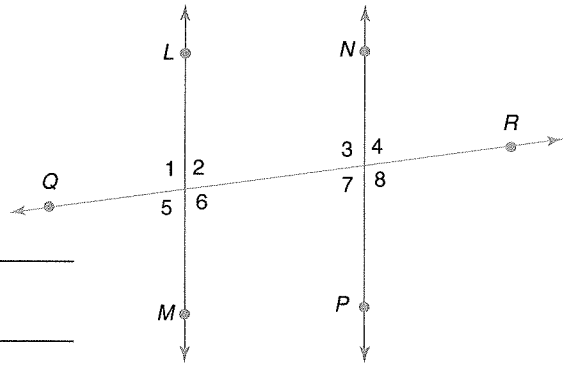
A **transversal** is a line that intersects two or more lines at different points. In the figure to the right, $\overleftrightarrow{EF}$ is a transversal intersecting $\overleftrightarrow{AB}$ and $\overleftrightarrow{CD}$.

When a transversal intersects two or more parallel lines, corresponding angles are formed. **Corresponding angles** are angles that hold the same position on two different parallel lines intersected by a transversal. The following pairs of angles are corresponding angles in the figure to the right.

$\angle 1$ and $\angle 5$; $\angle 2$ and $\angle 6$; $\angle 3$ and $\angle 7$; $\angle 4$ and $\angle 8$

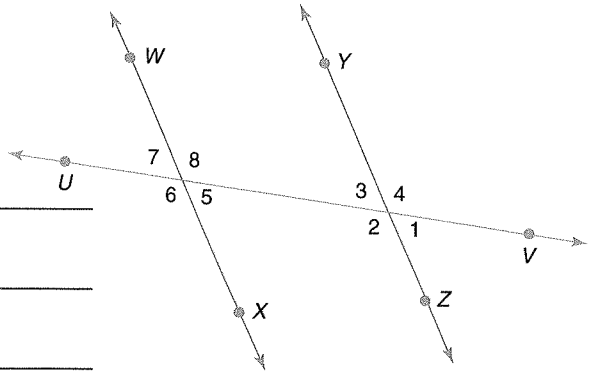


Use the figure to identify the following.



1. Name the parallel lines. _____
2. Name the transversal. _____
3. Name the angle that corresponds to $\angle 2$. _____
4. Name the angle that corresponds to $\angle 3$. _____
5. Name the angle that corresponds to $\angle 5$. _____
6. Name the angle that corresponds to $\angle 8$. _____

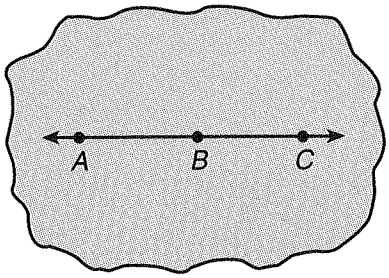
Use the figure to identify the following.



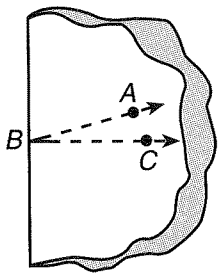
7. Name the parallel lines. _____
8. Name the transversal. _____
9. Name the angle that corresponds to $\angle 7$. _____
10. Name the angle that corresponds to $\angle 1$. _____
11. Name the angle that corresponds to $\angle 4$. _____
12. Name the angle that corresponds to $\angle 6$. _____

NAME _____

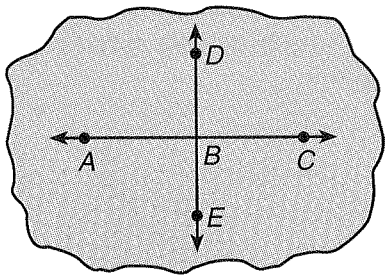
Lesson 7 Right Angles



Draw a line on a sheet of paper. Mark points *A*, *B*, and *C* as shown above.



Fold the line over itself at *B*.



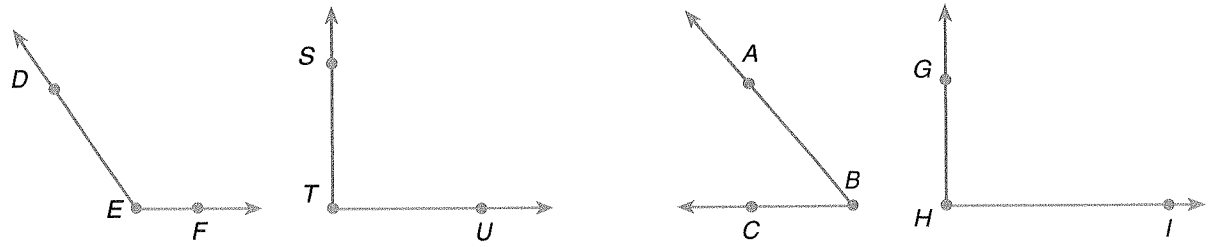
Unfold the paper. Draw a line through *B* along the fold line. Label it as shown. Line *AC* and line *DE* form four **right angles.**

Angles such as $\angle DBA$, $\angle DBC$, $\angle ABE$, and $\angle CBE$ are right angles. Two lines that form right angles are called **perpendicular lines.**

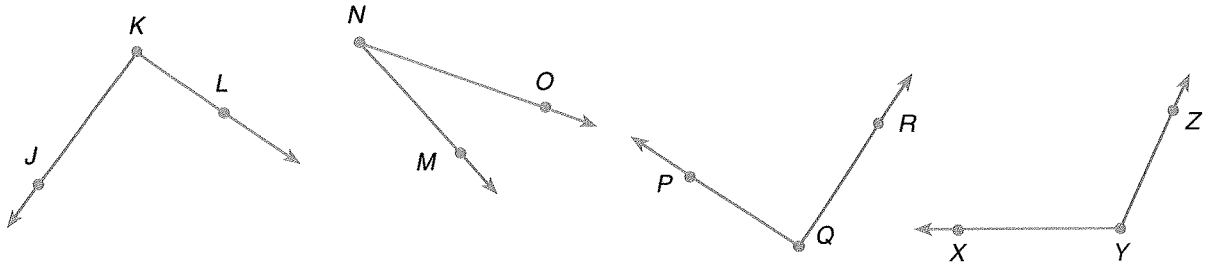
Write an *R* beside each right angle.

a *b* *c* *d*

1.



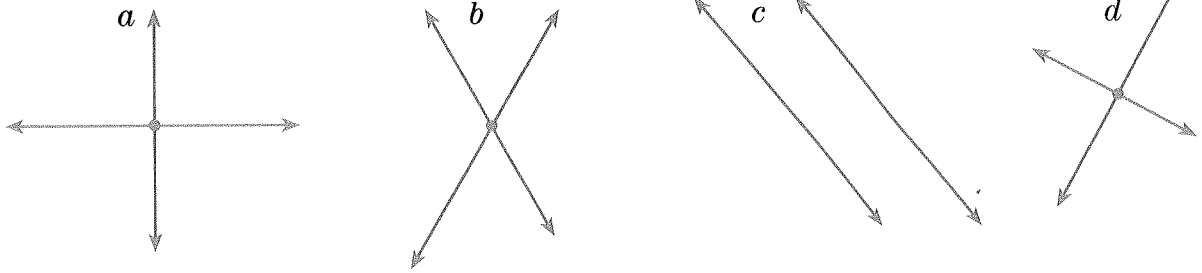
2.



Write a *P* beside each pair of perpendicular lines.

a *b* *c* *d*

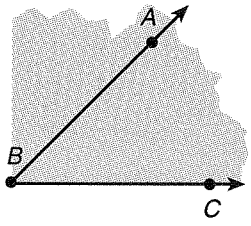
3.



NAME _____

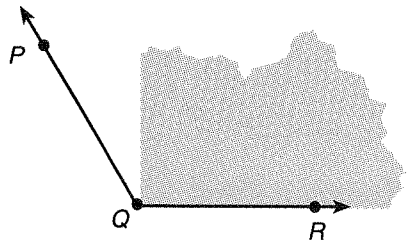
Lesson 8 Types of Angles

Compare $\angle ABC$ with a model of a right angle, such as the corner of a sheet of paper.



Does $\angle ABC$ appear to be larger or smaller than a right angle? _____
Angles like $\angle ABC$ are called **acute angles.**

Compare $\angle PQR$ with a model of a right angle.

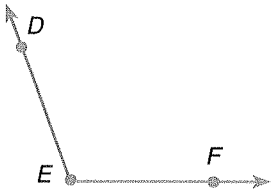


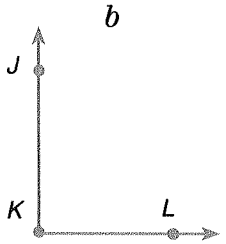
Does $\angle PQR$ appear to be larger or smaller than a right angle? _____
Angles like $\angle PQR$ are called **obtuse angles.**

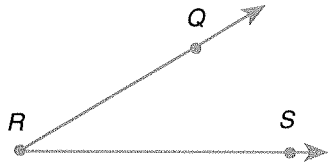
Compare each angle with a model of a right angle. Then tell whether the angle is an *acute,* an *obtuse,* or a *right* angle.

a *b* *c*

1.

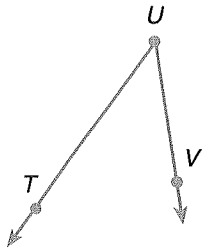


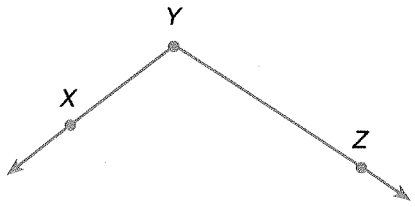


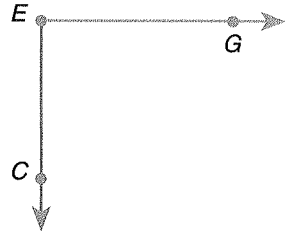


_____ _____ _____

2.

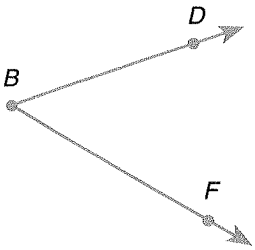


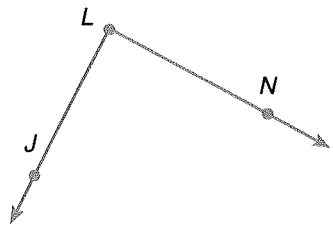


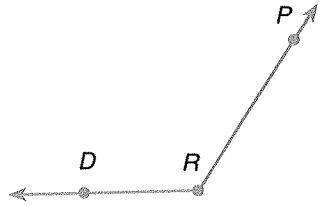


_____ _____ _____

3.





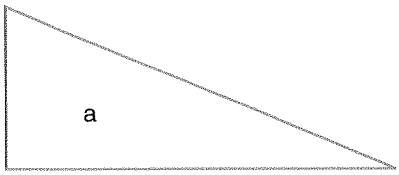


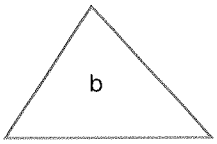
_____ _____ _____

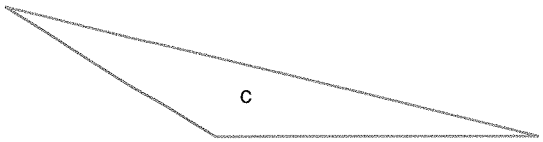
NAME _____

Lesson 9 Types of Triangles by Angles

Compare the angles of each triangle with a model of a right angle.







An **acute triangle** contains three acute angles.

Which triangle above is an acute triangle? _____

A **right triangle** contains one right angle.

Which triangle above is a right triangle? _____

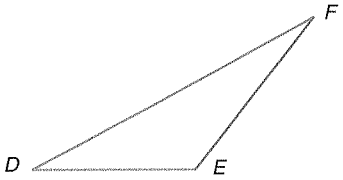
An **obtuse triangle** contains one obtuse angle.

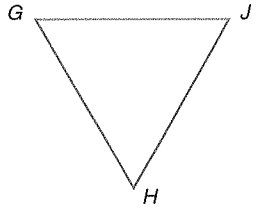
Which triangle above is an obtuse triangle? _____

Compare the angles of each triangle below with a model of a right angle. Then tell whether the triangle is an *acute*, an *obtuse,* or a *right* triangle.

a *b* *c*

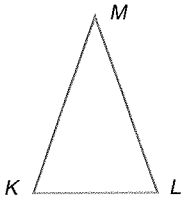
1.

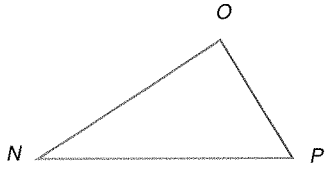


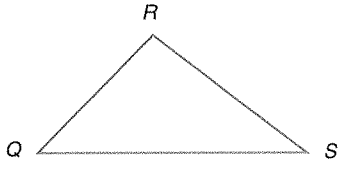


_____ triangle _____ triangle _____ triangle

2.

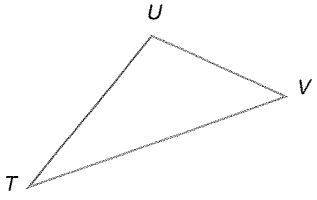


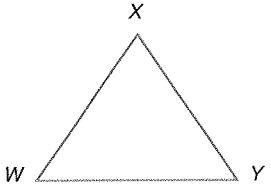


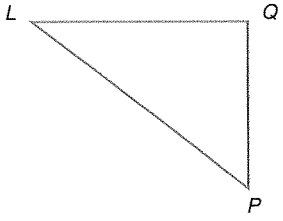


_____ triangle _____ triangle _____ triangle

3.





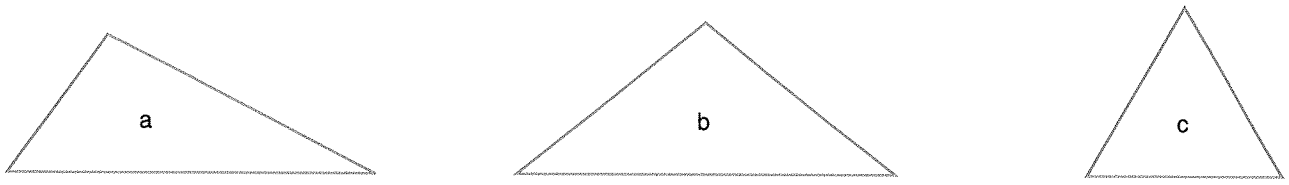


_____ triangle _____ triangle _____ triangle

NAME _____

Lesson 10 Types of Triangles by Sides

Use a ruler to compare the lengths of the sides of each triangle.



In a **scalene triangle** no two sides are congruent.

Which triangle above is a scalene triangle? _____

Congruent sides have the same length.

In an **isosceles triangle** at least two sides are congruent.

Which triangles above are isosceles triangles? _____

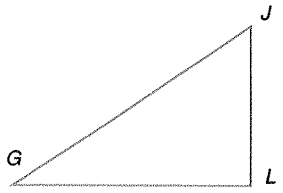
In an **equilateral triangle** all sides are congruent.

Which triangle above is an equilateral triangle? _____

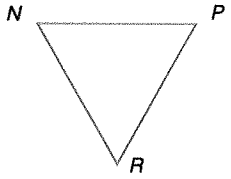
Use a ruler to compare the lengths of the sides of each triangle. Then tell whether the triangle is a *scalene,* an *isosceles,* or an *equilateral* triangle.

a *b* *c*

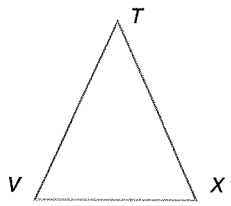
1.



_____ triangle

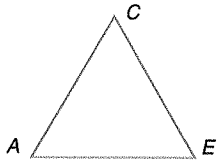


_____ triangle

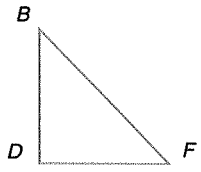


_____ triangle

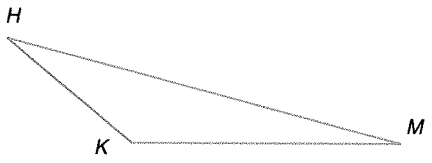
2.



_____ triangle

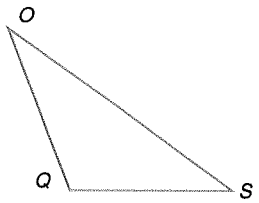


_____ triangle

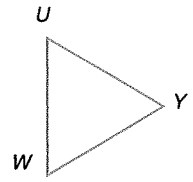


_____ triangle

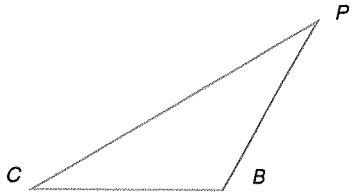
3.



_____ triangle



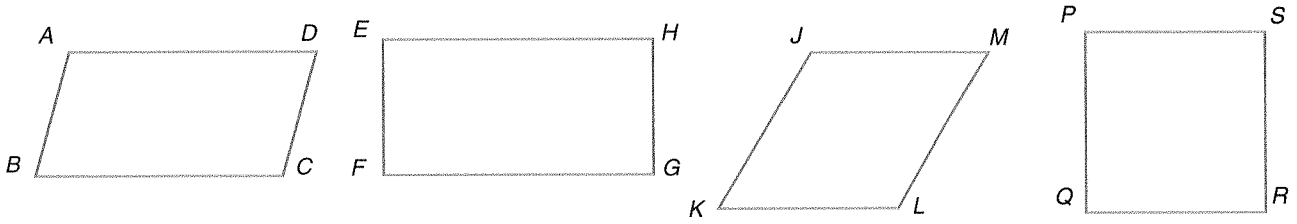
_____ triangle



_____ triangle

NAME _____

Lesson 11 Types of Quadrilaterals



A **parallelogram** is a quadrilateral (4-sided figure) in which the opposite sides are parallel.

$\overleftrightarrow{AB}$ is parallel to $\overleftrightarrow{DC}$ and $\overleftrightarrow{AD}$ is parallel to $\overleftrightarrow{BC}$.

Is figure *ABCD* a parallelogram? _____

A **rectangle** is a quadrilateral in which all angles are right angles.

Compare each of the angles of figure *EFGH* with a model of a right angle.

Is figure *EFGH* a rectangle? _____

A **rhombus** is a quadrilateral in which all sides are congruent.

Use a ruler to compare the lengths of the sides of figure *JKLM*.

Is figure *JKLM* a rhombus? _____

A **square** is a quadrilateral in which all angles are right angles and all sides are congruent.

Compare the angles of figure *PQRS* with a model of a right angle and use a ruler to compare the lengths of its sides.

Is figure *PQRS* a square? _____

CHAPTER 10

Use the figures at the top of the page to answer the questions that follow.

	a	*b*
1.	Which figures are rectangles?	Which figure is a square?
	_____	_____
2.	Are all squares rectangles?	Are all rectangles squares?
	_____	_____
3.	Which figures are rhombuses?	Which figures are rectangles?
	_____	_____
4.	Are all squares rhombuses?	Are all rhombuses squares?
	_____	_____

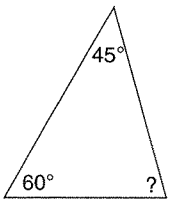
NAME _____

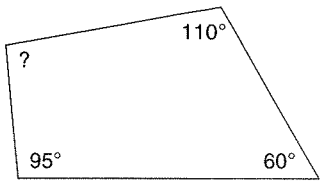
Lesson 12 Sum of Angles

The three angles of a triangle have a sum of 180°.

The four angles of a quadrilateral have a sum of 360°.

Find the measure of the missing angle in each figure.





45° + 60° = 105°

180° − 105° = 75°

The missing angle measures 75°.

95° + 60° + 110° = 265°

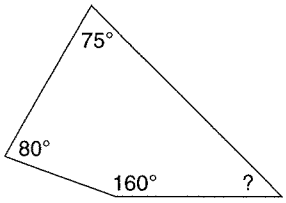
360° − 265° = 95°

The missing angle measures 95°.

Find the measure of the missing angle in each figure.

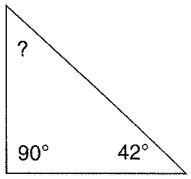
1.

a



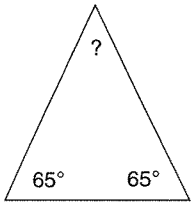
_____

b

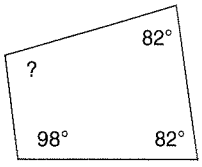


_____

2.

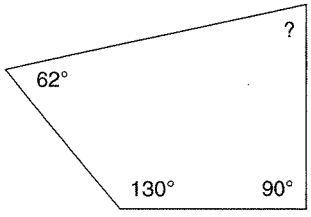


_____

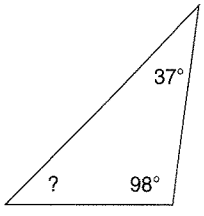


_____

3.



_____



_____

NAME _____

CHAPTER 10 PRACTICE TEST
Geometry

Name each figure.

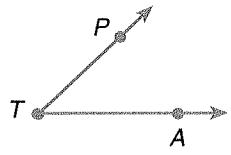
1. *a*

_____

b

_____

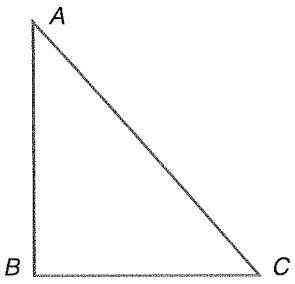
c



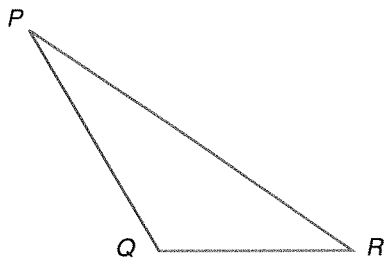
_____

Compare the angles of each triangle with a model of a right angle. Then tell whether the triangle is an *acute,* an *obtuse,* or a *right* triangle.

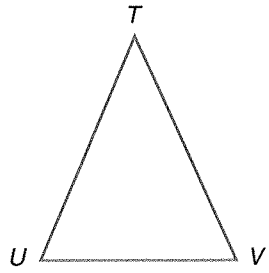
2.



_____ triangle

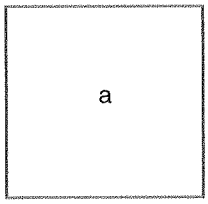


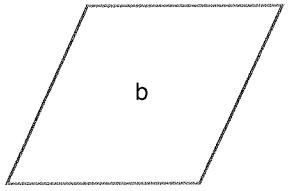
_____ triangle

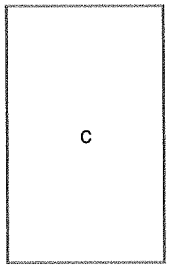


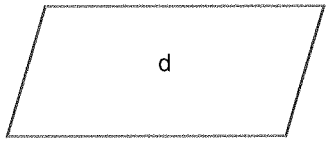
_____ triangle

In each figure below, the opposite sides are parallel. Use these figures to answer the questions that follow.









3. Which figure is a square? _____
4. Which figures are rectangles? _____
5. Which figures are parallelograms? _____
6. Which figures are rhombuses? _____

NAME _____

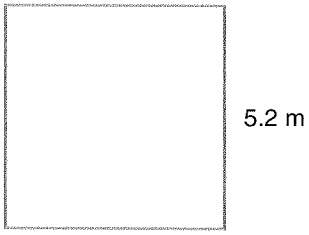
CHAPTER 11 PRETEST
Perimeter and Area

Find the perimeter (or circumference) of each figure below. Use 3.14 for π.

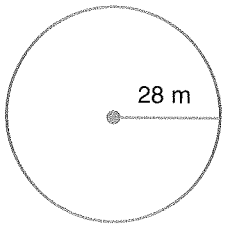
a *b* *c*

1.

_____ cm

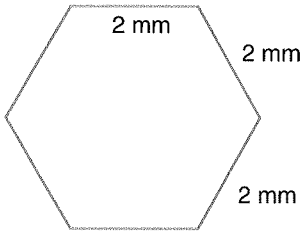


_____ cm

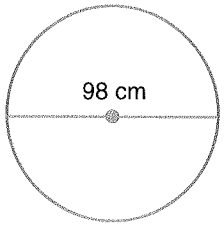


about _____ m

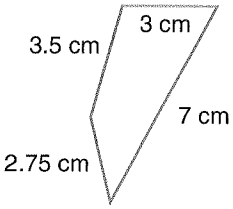
2.



_____ mm



about _____ cm

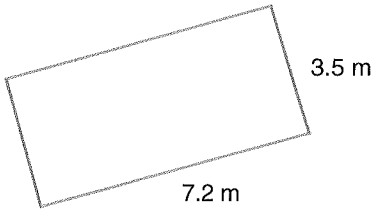


_____ cm

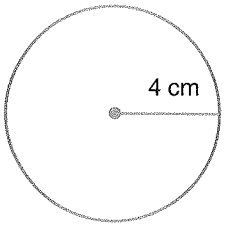
Find the area of each figure below. Use 3.14 for π.

3.

_____ km^2

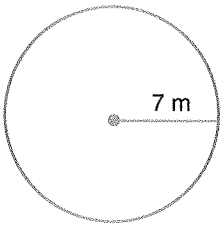


_____ m^2

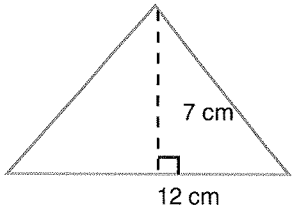


about _____ cm^2

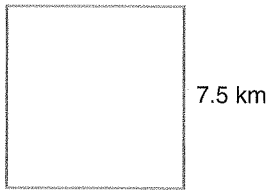
4.



about _____ m^2

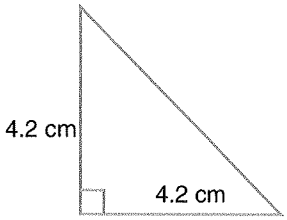


_____ cm^2

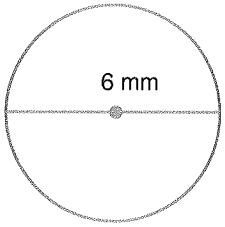


_____ km^2

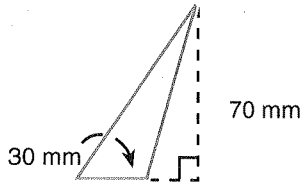
5.



_____ cm^2



about _____ mm^2



_____ mm^2