Geometry                                    Name _____

                                            Date _____ Period _____

# Chapter 1 Basics of Geometry

## Ch 1.1 Points, Lines and Planes

**Undefined Terms:**
1)

2)

3)

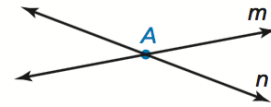Points that lie on the same line are called _____

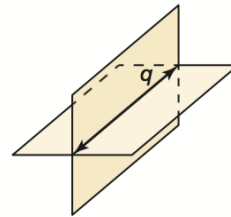Points that lie on the same plane are called _____

**Defined Terms:**
1)

2)

3)


Intersections:
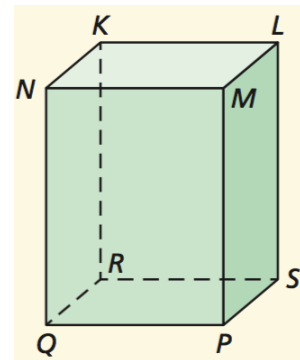


The intersection of two different lines is a _____ .




The intersection of two different planes is a _____ .


Use the diagram and identify examples of the following:
1) a segment
2) a plane
3) intersection lines
4) intersecting planes
5) a point not in a plane
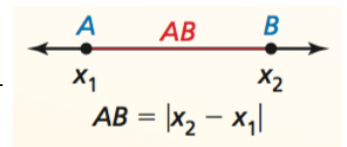6) a line not in a plane

**Always, Sometimes, Never**

1) A line _____ has endpoints.

2) A line and a point _____ intersect.

3) A plane and a point _____ intersect.

4) Two planes _____ intersect in a line.

5) Any three points _____ determines a plane.

6) Two lines that are not parallel _____ intersect.
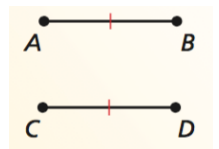

## Ch 1.2 Measuring and Constructing Segments


Postulate: _____

Theorem: _____

_____

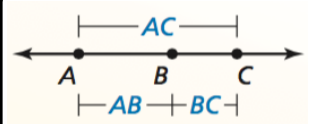Distance: _____

$$AB = |x_2 - x_1|$$

Congruent segments: _____

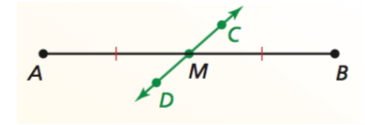Between: _____

| **Segment Addition Postulate** | |
|---|---|
|  |  |

## Ch 1.3 Using Midpoint and Distance Formulas

Midpoint: _____

Segment Bisector: _____

Example:

x =                    PM =

$5x - 3$        $11 - 2x$
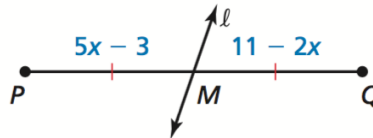
**Midpoint Formula**

_____
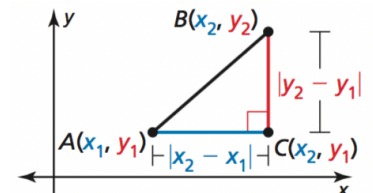
M(              ,              )
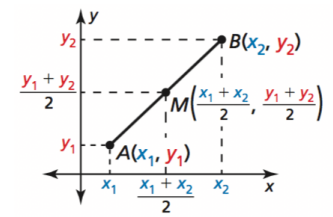
**Compute the following.**
1) Midpoint of A(1, 2) and B(7, 8)

2) Midpoint of C(-4, 3) and D(-6, 5)

3) The midpoint of a segment VW is M(-1, -2) and one endpoint is W(4, 4). Determine the coordinate of V.
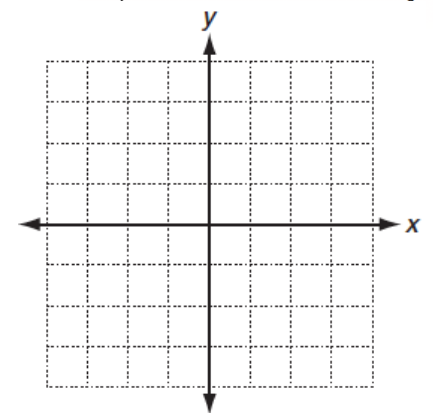
**Distance Formula**

                    AB =

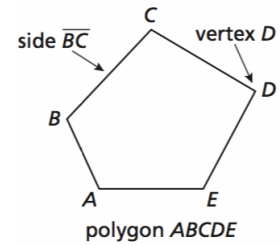**Example**: Compute the distance between the following points:
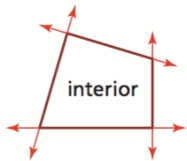
(x1, y1) = (2, 3)

(x2, y2) = (4, -1)

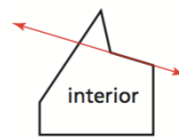## Ch 1.4 Perimeter and Area in the Coordinate Plane

Properties of a Polygon:



side $\overline{BC}$    vertex $D$

polygon $ABCDE$

| Number of Sides | Type of Polygon | Number of Sides | Type of Polygon |
|---|---|---|---|
| 3 | | 8 | |
| 4 | | 9 | |
| 5 | | 10 | |
| 6 | | 12 | |
| 7 | | n | |

**Convex Polygon**:



interior

**Concave Polygon**:



interior
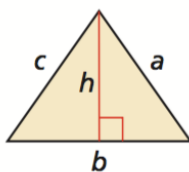
Classify these polygons by type and convex or concave:

1)                    2)                    3)                    4)
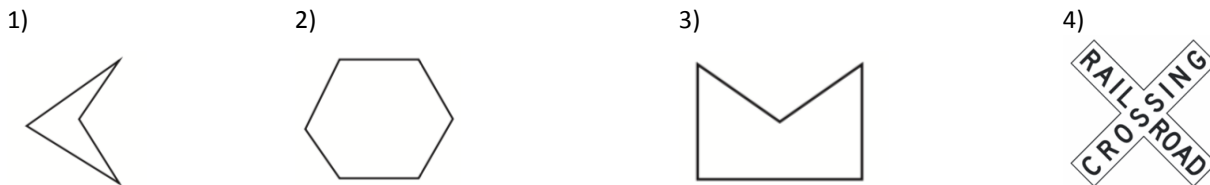


**Perimeter and Area**

**Triangle**
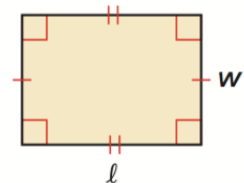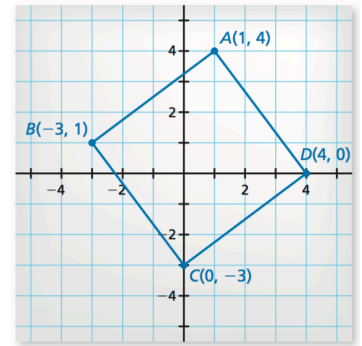


P =
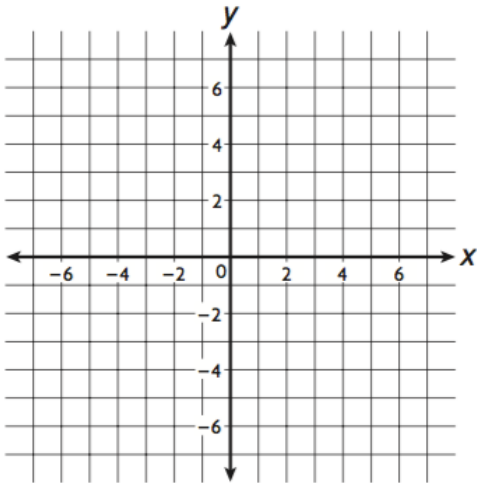
A =

**Square**
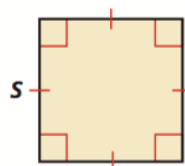


P =

A =

**Rectangle**



P =

A =

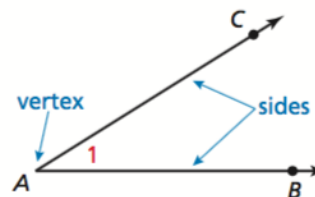**Example**: Calculate the perimeter and area of the figure on the right.



**Example**: Calculate the perimeter and area of the quadrilateral EFGH, in which E(-3, 6), F(-7, 3), G(-1, -5), H(3, -2).
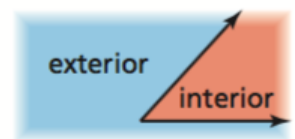


# Ch 1.5 Measuring and Constructing Angles

## Vocabulary

**angle**:



**angle interior**:
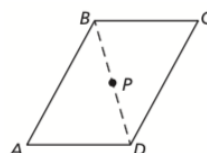
## Naming an angle
Use the vertex:

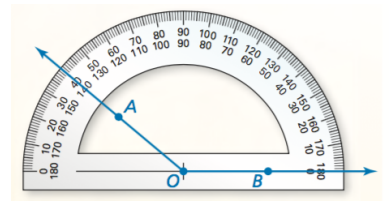Use a point on each ray and the vertex:

Use a number:

## Examples of
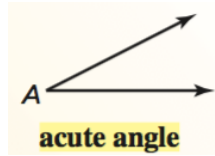Ambiguous angle name:

Unambiguous angle name:

## Measure of an Angle

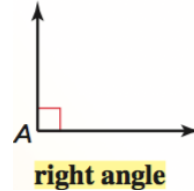The measure of _____, also written _____, is the difference of

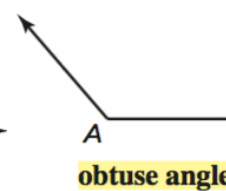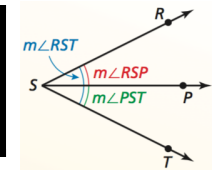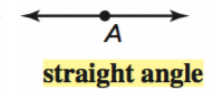the angles of the rays _____ and _____ on a protractor.

## Types of Angles

acute:

right:

obtuse:

straight:

**acute angle**   **right angle**   **obtuse angle**   **straight angle**

| **Angle Addition Postulate** | |
|---|---|
| | |

$m\angle RST$
$m\angle RSP$
$m\angle PST$

**angle bisector**:
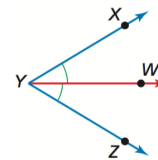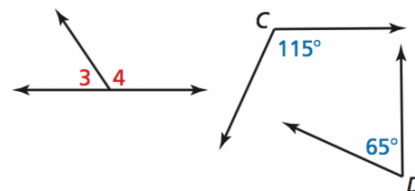
# Ch 1.6 Describing Pairs of Angles

## Vocabulary

**complementary angles:**                    **supplementary angles:**
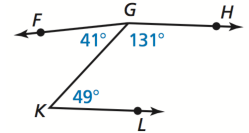
20°

70°

115°

65°
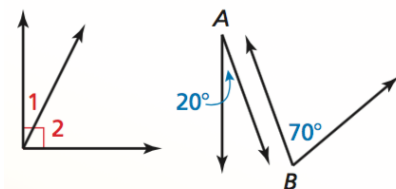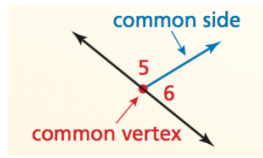
**adjacent angles:**



**Example**

1. Using the diagram to the right, name a pair of complementary angles, supplementary angles, and a pair of adjacent angles.
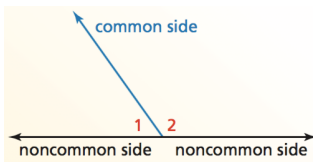


2. Assume _____ is a complement of _____ , and _____,Determine _____.
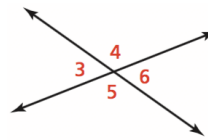
3. Assume _____ is a supplement of _____, and _____, Determine _____.

## Vocabulary

**linear pair:**                                                      **vertical angles:**
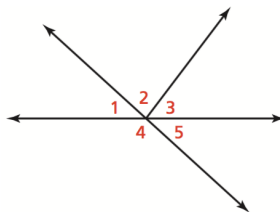
                          
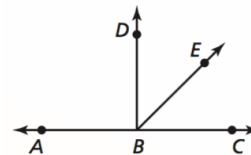
**Example**

1. Name the vertical angles



2. Name the linear pairs

## Interpreting a Diagram

Using the diagram to the right.

We can assume:

We cannot assume: