Chapter 1 Summary Sheet

Area and Perimeter Formula's

Square and Rectangle

$A = \ell w$ or $A = bh$

Triangle

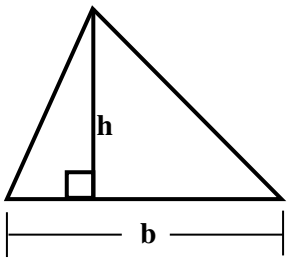
$A = \frac{1}{2}bh$

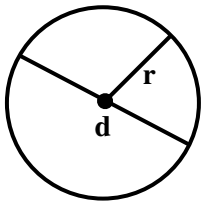
Circle

$A = \pi r^2$ $\quad C = 2\pi r$ $\quad \pi \approx 3.14$

Note: Circumference is the perimeter of a circle.

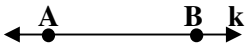
Radius – distance from the center to the outside of the circle
Diameter – distance across a circle though its center



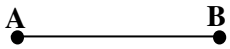


Point A

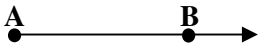
Line AB ($\overleftrightarrow{AB}$) or line k



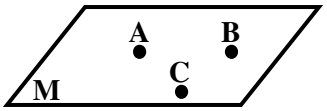
Segment AB ($\overline{AB}$)



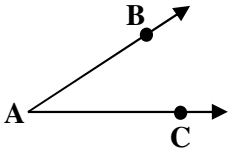
Ray AB ($\overrightarrow{AB}$)



Plane M or plane ABC



Angle A ($\angle A, \angle BAC$, or $\angle CAB$)



Collinear – points that lie on the same line
Coplanar – points or lines that lie on the same plane

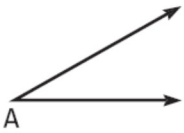
Distance Formula

$$d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

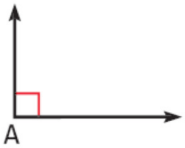
Midpoint Formula

$$M\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

Classifying Angles



Acute angle
$0° < m\angle A < 90°$



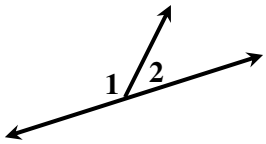
Right angle
$m\angle A = 90°$

Obtuse angle
$90° < m\angle A < 180°$

Straight angle
$m\angle A = 180°$

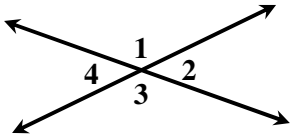
Angle Pair Relationships

Linear Pair



$m\angle 1 + m\angle 2 = 180°$

Vertical Angles



$\angle 1$ and $\angle 3$ are vertical angles
$\angle 2$ and $\angle 4$ are vertical angles

$m\angle 1 = m\angle 3$

$m\angle 2 = m\angle 4$

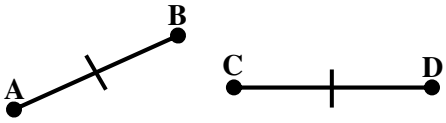
Complementary – two angles whose sum is 90°
Supplementary – two angles whose sum is 180° →**How to Remember:** Turn 180° to say "sup" to friend behind you
Bisect – to cut into two equal pieces
Midpoint – a point that bisects a segment

Congruent (Symbol: ≅) – two figures that have the same shape or that overlap perfectly
Equal (**Symbol: =**) – having the same numerical quantity

Congruent Segments (Tick Marks)

$\overline{AB} \cong \overline{CD}$

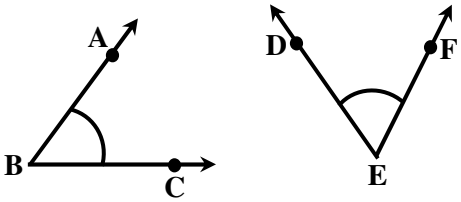
$AB = CD$



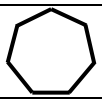
Congruent Angles (Arcs)

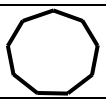
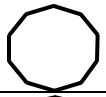
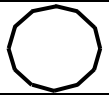
$\angle ABC \cong \angle DEF$

$m\angle ABC = m\angle DEF$



Polygon – a closed figure formed by three or more segments joined at their endpoints.

Number of Sides	Type of Polygon (Classification)	Diagram
3	Triangle	
4	Quadrilateral	
5	Pentagon	
6	Hexagon	
7	Heptagon	

Number of Sides	Type of Polygon (Classification)	Diagram
8	Octagon	
9	Nonagon	
10	Decagon	
12	Dodecagon	
n	n-gon	

Equilateral – all sides are congruent
Equiangular – all angles are congruent
Regular – both equilateral and equiangular