Day 1 – Definitions and Geometric Relationships Notesheet

**The BIG THREE** – Geometry is built upon these three definitions.

**Point**: A specific **L**_________ in space. Represented by a dot.

**Line**: The set of all **P**_________ that define the **S**_________ distance between two points and extends forever in both **D**_________. We name lines using the following format.

![Line Diagram]

**Plane**: A **F**_________ **S**_________ that extends forever in **A**______ directions. A plane is represented by a **P**_________ and is named in this way:

![Plane Diagram]

**More Basic Geometry Definitions:**

**Line Segment**: Part of a **L**_______ that has a specific **S**_________ Point and **E**_________ Point.

![Line Segment Diagram]

**Ray**: Part of a **L**_______ that has a **S**_________ Point and goes on in a certain **D**_________ forever.

![Ray Diagram]

**Parallel Lines**: Two or more lines that are in the same **P**_________ and never cross. These lines have the same **S**_________.

![Parallel Lines Diagram]

**Perpendicular Lines**: Two lines that intersect to form **R**_______ **A**_______. These lines have slopes that are **O**_________ **R**_________.

![Perpendicular Lines Diagram]
**Skew Lines:** Two or more lines in different **P**lane that never **I**ntersect.

**Midpoint:** A point that **D**ivides a **S**egment into two congruent parts.

**Collinear Points:** Points that **L**ie on the same **L**ine.

**Vertex:** A point where two **L**ines intersect.

**Angle:** Formed when two **R**ays share a common **E**ndpoint.

**Acute Angle:** Angle that has a measure **L**ess than **90**.

**Obtuse Angle:** Angle that has a measure **G**reater than **90**.

**Straight Angle:** Angle that has a measure of **180**.

**Right Angle:** Angle formed by **P**erpendicular rays.

**Vertical Angles:** Two angles that are **O**pposite each other when two lines cross.

**Adjacent Angles:** Two angles that **S**hare a common **S**egment.

**Complementary Angles:** Two angles that have measures that add up to **90**.

**Supplementary Angles:** Two angles that have measures that add up to **180**.

**Linear Pair:** Two **A**ngles, **S**upplementary angles.

**Angle Bisector:** A line that **S**plits an angle into two **C**ongruent Angles.
Naming Angles: Angles are named in a variety of ways.

* If an angle sits alone, you can name it using only its vertex.

** If an angle lies with other angles, you should name it using _____ letters, with the V_______ Point being the middle letter

*** Sometimes angles are labeled with numbers. If so, you can name the angle with a number.

Practice Problems: Use the given definitions to help you solve the following problems.

1) Name the following using the proper notation.
   a)  
   b)  
   c)  

2) Name the angle given in three different ways.

3) Use the given picture to at least one of the following:
   a) Acute Angle  
   b) Line  
   c) Right Angle  
   d) Vertex  
   d) Obtuse Angle  
   e) Segment  
   f) Straight Angle  
   g) Ray  
   h) Vertical Angles  
   i) Linear Pair  
   j) Complementary Angles  
   k) Collinear Points  
   l) Supplementary Angles  
   m) Adjacent Angles
4) Given the following angle measures, which angles are...

a) Supplementary:

b) Complementary:

5) Use the given pictures to find the value of each variable.

a) 

b) 

c) 

d) 

6) $\overrightarrow{PV}$ is an angle bisector of $\angle APH$. If $m\angle VPH = 47^0$, find the measure of $\angle HPA$.

7) $X$ is the midpoint of $\overline{DW}$. If $DW = 6y + 5$ and $DX = 4y - 2$, what is the length of $XW$?

8) If the figure, $L$ is the midpoint of $\overline{FA}$. $K$ is the midpoint of $\overline{FE}$.

AE has a length of 12 in. ME has a length of 8.5 in.

Find the length of each segment:

a) $FM =$

b) $LE =$

c) $AM =$

d) $EF =$