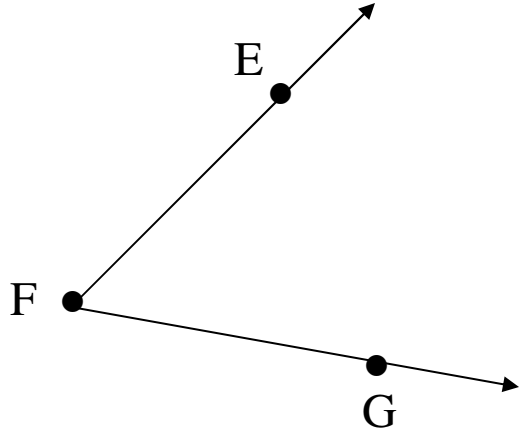
Notes for Lesson 1-4

Angles

Angle

- Consists of two different rays with the same endpoint.
- The rays are the sides of the angle and the endpoint is the vertex.

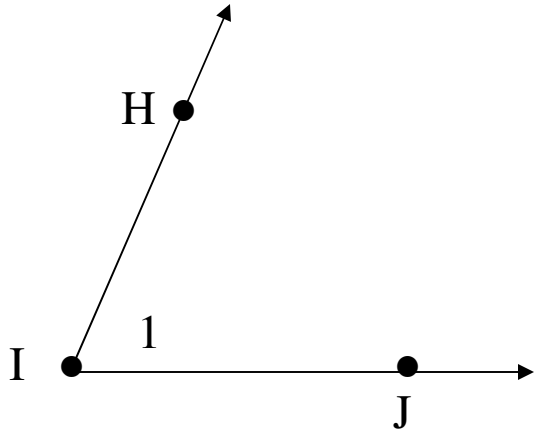
For the angle to the right, F is the vertex and $\overrightarrow{FE}$ and $\overrightarrow{FG}$ are the sides.



Naming an Angle

- An angle can be named several different ways.

We can name the given angle as < I, < HIJ, < JIH, or < 1.

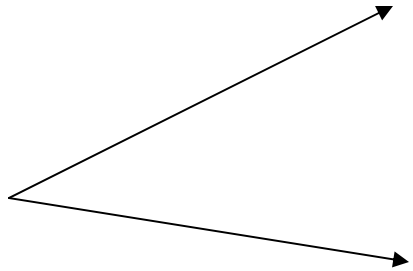


If three letters are used to name an angle the middle letter must be the vertex.

To be able to use just one letter it can only be the vertex of one angle

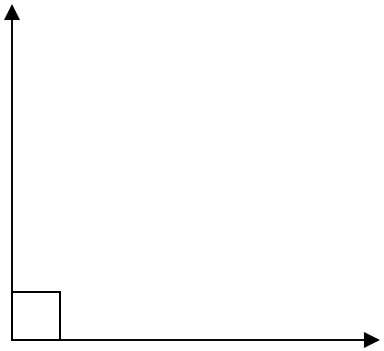
Acute Angle

- An angle whose measure is greater than 0° but less than 90°



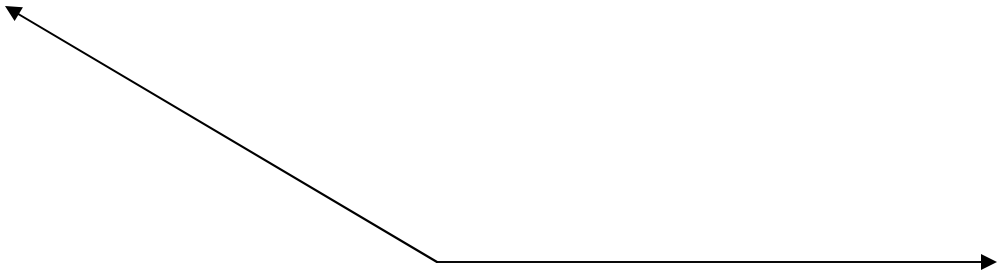
Right Angle

- An angle whose measure = 90°



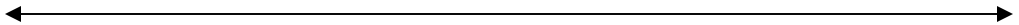
Obtuse Angle

- An angle whose measure is greater than 90° but less than 180°



Straight Angle

- An angle whose measure = 180°

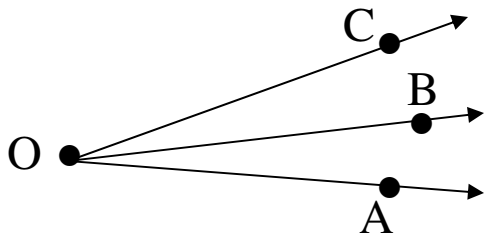


Protractor Postulate

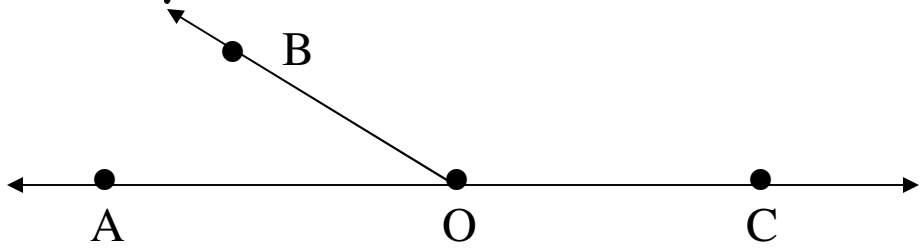
- On $\overleftrightarrow{AB}$ in a given plane, choose any point O between A and B. Consider $\overrightarrow{OA}$ and $\overrightarrow{OB}$ and all the rays that can be drawn from O on one side of $\overleftrightarrow{AB}$. These rays can be paired with the real numbers from 0 to 180 in such a way that:
- A) $\overrightarrow{OA}$ is paired with 0 and $\overrightarrow{OB}$ is paired with 180
- B) If $\overrightarrow{OP}$ is paired with x, and $\overrightarrow{OQ}$ with y, then $m\angle POQ = |x - y|$

Angle Addition Postulate

- If point B lies in the interior of ∠AOC then m∠AOB + m∠BOC = m∠AOC



- If ∠AOC is a straight angle and B is any point not on AC, then m∠AOB + m∠BOC = 180°



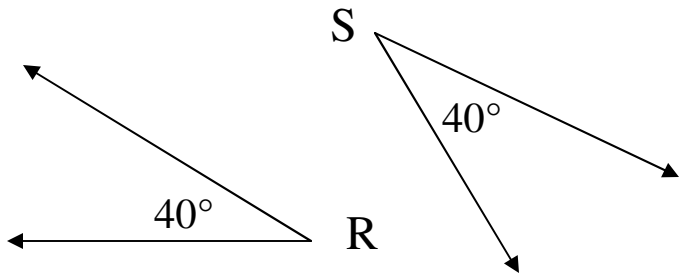
Congruent Angles

- Angles that have equal measures

We can say that the

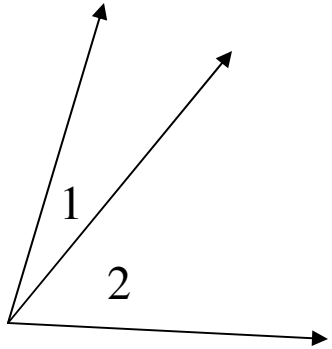
m<R = m<S and/or

<R is congruent to <S



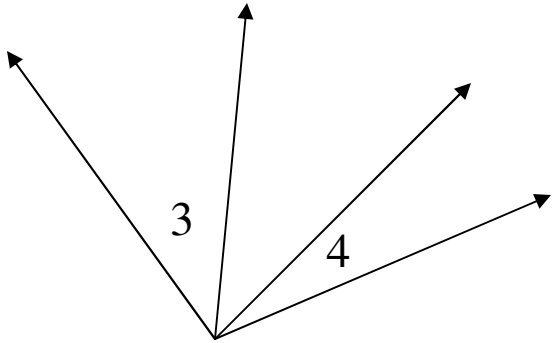
Adjacent Angles

- Two angles that share a common vertex and side but do not have any interior points in common



<1 and <2 are

adjacent angles

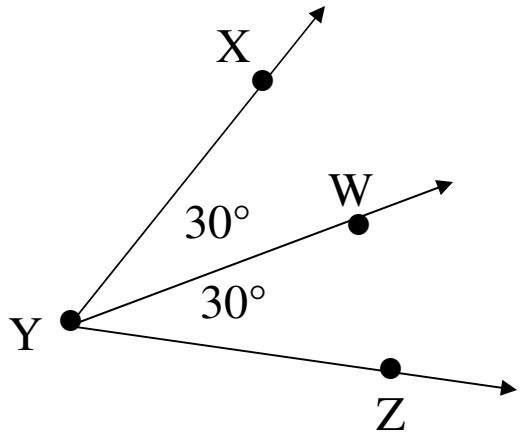


<3 and <4 are

not adjacent

Angle Bisector

- A ray that divides an angle into two angles that are congruent



$\overrightarrow{YW}$ is a bisector of ∠XYZ

m∠XYW = m∠WYZ