# Measuring Angles

**Today I Can**

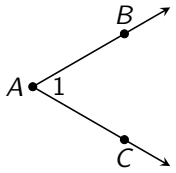
1. Find and compare the measures of angles.

**Angles**

**Angles** are formed by 2 rays with the same endpoint. The rays are the **sides** and the endpoint is the **vertex**.

You can name an angle by

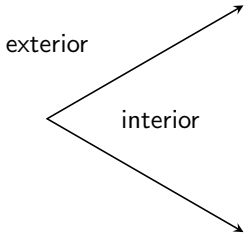
- its vertex, $\angle A$
- a point on each ray and the vertex, $\angle BAC$ or $\angle CAB$
- a number, $\angle 1$



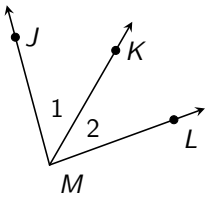

The **sides** of the angle are $\overrightarrow{AB}$ and $\overrightarrow{AC}$. The **vertex** is $A$.

The **interior** of an angle is the region containing all of the points between the rays.

The **exterior** of an angle is all of the points outside the interior.




**Example 1.** Use the diagram below to answer each.




(a) What are two other names for $\angle 1$?

(b) What are two other names for $\angle KML$?

Angles with the same measure are **congruent**. We denote congruent angles based on the number of marking arcs drawn.

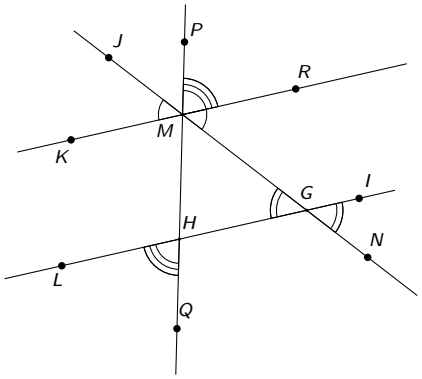

$$m\angle A = m\angle B$$
$$\angle A \cong \angle B$$

**Example 2.** Use the figure to fill in the missing value.

(a) $\angle LMK \cong$

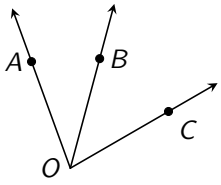
(b) $\angle IGN \cong$

(c) $\angle RMP \cong$



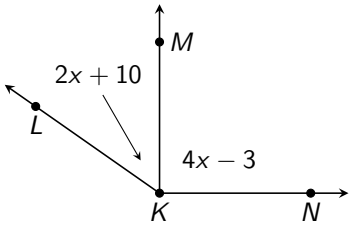

**Angle Addition Postulate**

If $B$ is in the interior of $\angle AOC$ then $m\angle AOB + m\angle BOC = m\angle AOC$.

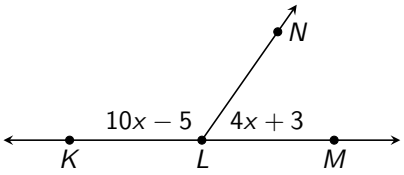



**Example 3.** Find the measure of each angle.

(a) $m\angle LKN = 145°$




(b) $\overleftrightarrow{KM}$




(c)