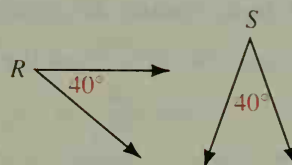


Congruent angles are angles that have equal measures.

Since $\angle R$ and $\angle S$ both have measure 40, you can write

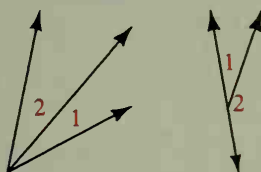
$$m\angle R = m\angle S \text{ or } \angle R \cong \angle S.$$

The definition of congruent angles tells us that these two statements are equivalent. We will use them interchangeably.

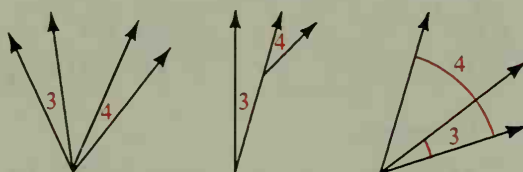


Adjacent angles (adj. \angle s) are two angles in a plane that have a common vertex and a common side but no common interior points.

$\angle 1$ and $\angle 2$ are adjacent angles.



$\angle 3$ and $\angle 4$ are not adjacent angles.



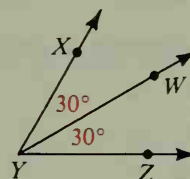
The **bisector of an angle** is the ray that divides the angle into two congruent adjacent angles. In the diagram,

$$m\angle XYW = m\angle WYZ,$$

$$\angle XYW \cong \angle WYZ,$$

and

$$\overrightarrow{YW} \text{ bisects } \angle XYZ.$$



There are certain things that you can conclude from a diagram and others that you can't. The following are things you can conclude from the diagram shown below.

All points shown are coplanar.

\overleftrightarrow{AB} , \overleftrightarrow{BD} , and \overleftrightarrow{BE} intersect at B .

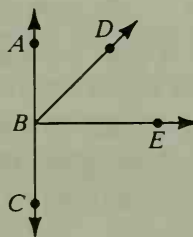
A , B , and C are collinear.

B is between A and C .

$\angle ABC$ is a straight angle.

D is in the interior of $\angle ABE$.

$\angle ABD$ and $\angle DBE$ are adjacent angles.



The diagram above does *not* tell you that $\overline{AB} \cong \overline{BC}$, that $\angle ABD \cong \angle DBE$, or that $\angle CBE$ is a right angle. These three new pieces of information can be indicated in a diagram by using marks as shown at the right. Note that a small square is used to indicate a right angle (rt. \angle).

