

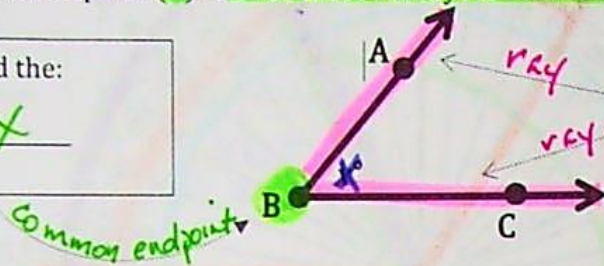
# UNIT 8: 2-D GEOMETRY

~ Unit 8, Page 3 ~

## Angles

Angles are made up of two rays with a common endpoint, called the vertex. Rays are named starting with the endpoint and then another point on the ray. Ray  $\overrightarrow{BA}$  and ray  $\overrightarrow{BC}$  share a common endpoint (B). Notice that both rays are named starting with B.

Point B is called the:  
Vertex

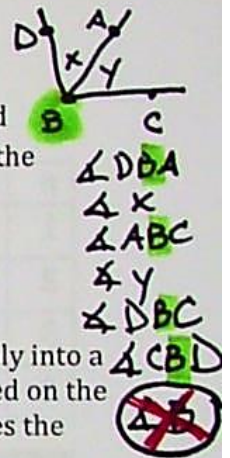


The sides of the angle are:

$\overrightarrow{BA}$  and  $\overrightarrow{BC}$   
(rays)

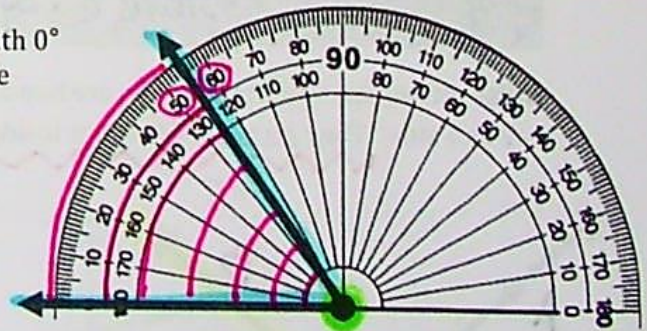
Angles are usually named by three capital letters. The middle letter names the vertex. If only one angle is located at a vertex, then the angle can be named using the vertex letter alone. And if there is a lower case letter between the two sides, the angle can also be referred to using the lower case letter.

The angle above can be named:  $\triangle ABC$   $\triangle CBA$   $\triangle B$   $\triangle x$


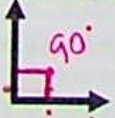
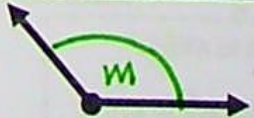



**ANGLE MEASURES** A protractor is used to measure angles. The protractor is divided evenly into a half circle of 180 degrees ( $180^\circ$ ). When the middle of the bottom of the protractor is placed on the vertex, and one of the rays of the angle is lined up with  $0^\circ$ , the other ray of the angle crosses the protractor at the measure of the angle.

The angle below has the ray pointing left lined up with  $0^\circ$  (the outside numbers), and the other ray of the angle crosses the protractor at  $55^\circ$ .

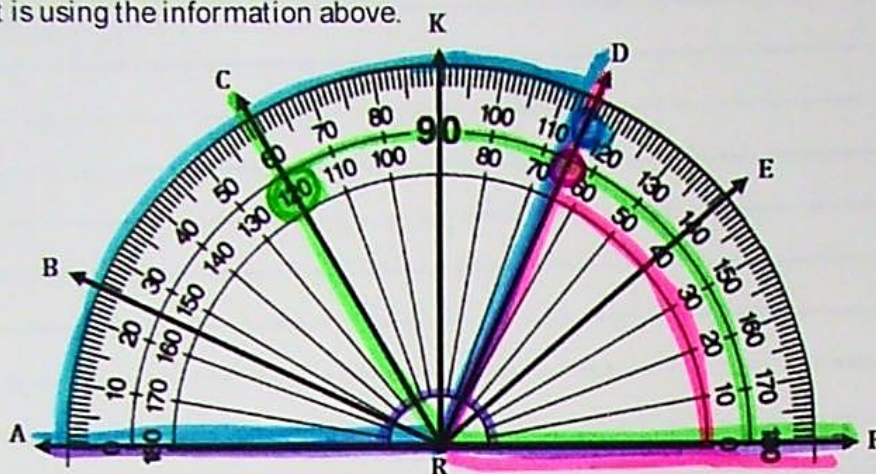


## Types of Angles

 <p>Type <u>acute</u></p> <p>Measure <math>0 &lt; m &lt; 90</math></p>	 <p>Type <u>right</u></p> <p>Measure <math>m = 90</math></p> <p>(exact)</p>	 <p>Type <u>obtuse</u></p> <p>Measure <math>90 &lt; m &lt; 180</math></p>	 <p>Type <u>straight</u></p> <p>Measure <math>m = 180^\circ</math></p> <p>(exact)</p>
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~~ Unit 8, Page 4 ~~

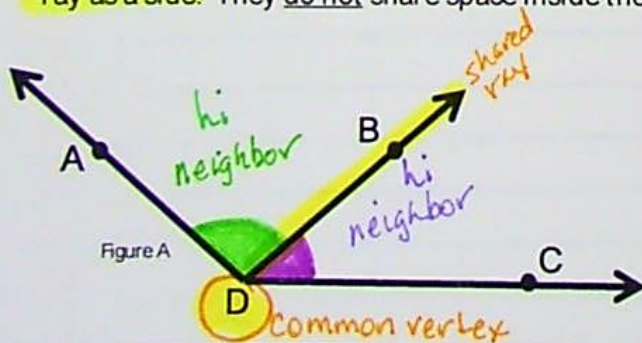
Using the protractor below, find the measure of the following angles. Then, tell what type of angle it is using the information above.



#	Question	Measure	Type of Angle
1	What is the measure of $\angle ARF$ ?	$180^\circ$	straight
2	What is the measure of $\angle CRF$ ?	$120^\circ$	obtuse
3	What is the measure of $\angle DRF$ ?	$65^\circ$	acute
4	What is the measure of $\angle ARD$ ?	$115^\circ$	obtuse

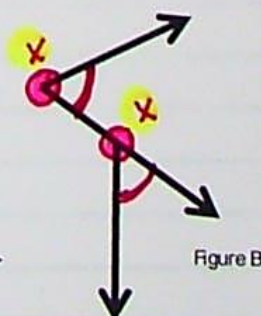
**Adjacent Angles - next to each other... like neighbors!**

**Adjacent Angles** - Adjacent angles are two angles that have the same vertex and share one ray as a side. They do not share space inside the angles.

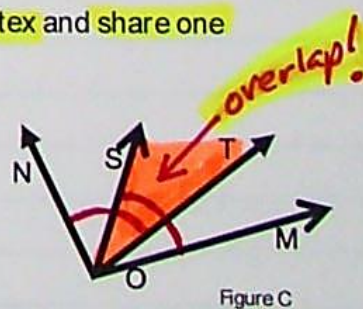


A)  $\angle ADB$  is adjacent to  $\angle BDC$ .

However,  $\angle ADB$  is not adjacent to  $\angle ADC$  because adjacent angles do not share any space inside the angle.



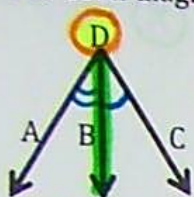
B) These two angles are **not adjacent**. They share a common ray but **do not share the same vertex**.



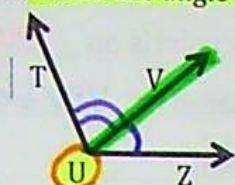
C)  $\angle NOT$  is **not adjacent** to  $\angle SOM$ . They share space inside the angles. (**overlap**)

~ Unit 8, Page 5 ~

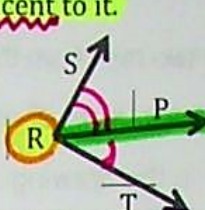
For each diagram below, name the angle that is adjacent to it.



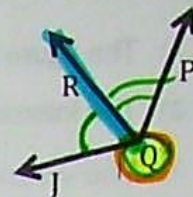
1)  $\angle CDB$  is adjacent to  $\angle ADB$   
 or  $\angle BDA$



2)  $\angle TUV$  is adjacent to  $\angle VUZ$   
 or  $\angle ZUV$



3)  $\angle SRP$  is adjacent to  $\angle PRT$   
 or  $\angle TRP$



4)  $\angle PQR$  is adjacent to  $\angle JQR$   
 or  $\angle RQJ$

**Independent Practice**

Part 1: Circle the correct choice for each question.

- 1) Which of the following is not a point on  $\overleftrightarrow{AC}$ ?  
 (Y) B    (R) D    (V) A
- 2) Which of the following is not a correct name for this line?  
 (A)  $\overleftrightarrow{PQ}$     (L)  $\overleftrightarrow{QP}$     (G)  $\overleftrightarrow{PQ}$
- 3) Which of the following is not the name of a segment in this figure?  
 (O)  $\overline{RS}$     (T)  $\overline{ST}$     (H)  $\overline{TR}$
- 4) Which of the following is not the name of a ray in this figure?  
 (W)  $\overrightarrow{EG}$     (S)  $\overrightarrow{FG}$     (U)  $\overrightarrow{FE}$
- 5) Which of the following is not a correct name for this angle?  
 (I)  $\angle ACB$     (Y)  $\angle CBA$     (L)  $\angle B$
- 6) Which of the following is not the name of a line in this figure?  
 (G)  $\overleftrightarrow{ZX}$     (R)  $\overleftrightarrow{XY}$     (K)  $\overleftrightarrow{YZ}$
- 7) Which of the following is a segment that has B as an endpoint?  
 (N)  $\overline{CD}$     (C)  $\overline{AC}$     (T)  $\overline{CB}$
- 8) Which of the following is not the name of a ray in this figure?  
 (H)  $\overrightarrow{MO}$     (S)  $\overrightarrow{LM}$     (P)  $\overrightarrow{KO}$
- 9) Which of the following is not a correct name for an angle in this figure?

**Assignment Pp 5-7**

