1-4 Angle Measure

Main concepts

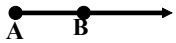
- measure and classify angles
- identify and use congruent angles and the bisector of an angle

Def. Ray

A part of a line with EXACTLY 1 endpt. that extends infinitely in 1 direction.

The symbol for ray is $\overrightarrow{\quad}$

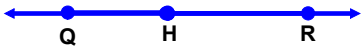
To name a ray, you use 2 pts. (the first pt. is ALWAYS the endpt. the other pt. is any other pt on the ray) with the symbol for ray above them.



$\overrightarrow{AB}$

Def. Opposite rays (straight ∠)

2 rays that share a common endpt. but go in EXACT opposite directions.
Opposite rays form a line.



Name the common endpoint: _____

Name the opposite rays (2 of them):

_____, _____

Def. Angle

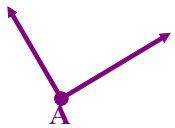
2 rays, called the SIDES, that share a common endpt., called the VERTEX.

The symbol for angle is ∠

To name an ∠, you have 3 options:

1. You can use the symbol for angle followed by the vertex pt.

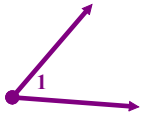
ex.



∠ A

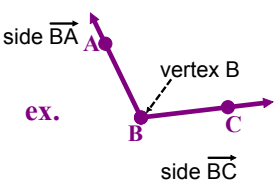
2. You can assign a number to the angle, then use the symbol followed by the number.

ex.



∠ 1

3. You can use the symbol for angle followed by 3 pts. 1 point from each ray (side) and the vertex point, where the vertex pt. is ALWAYS the middle pt.



∠ ABC

or

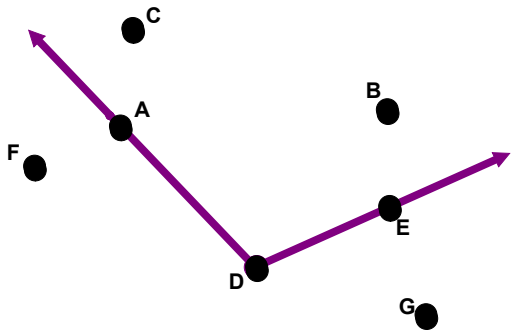
∠ CBA

Every angle divides a plane into 3 distinct parts:

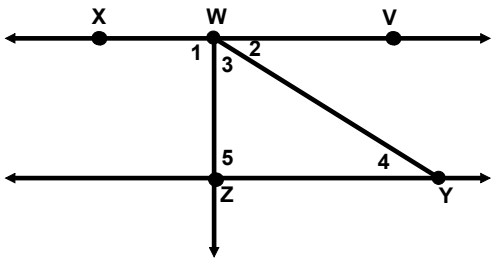
1) Points A, D and E lie **ON THE ANGLE**

2) Points C and B lie **IN THE INTERIOR OF THE ANGLE**

3) Points F and G lie **IN THE EXTERIOR OF THE ANGLE**



Naming parts of angles



Name all angles that have W as a vertex: ____, ____

____, ____

____, ____

Name the sides of ∠ 1. _____, _____

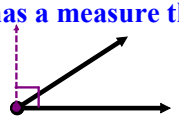
Write another name for ∠ WYZ. _____, _____, _____

Is it okay to call ∠ 3 by the name ∠ W? Why? Why not?

Name a pair of opposite rays.

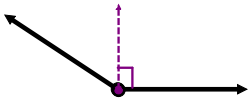
Def. Acute ∠, Right ∠, Obtuse ∠

An acute ∠ has a measure that is less than 90°



A right ∠ has a measure that is EXACTLY 90°

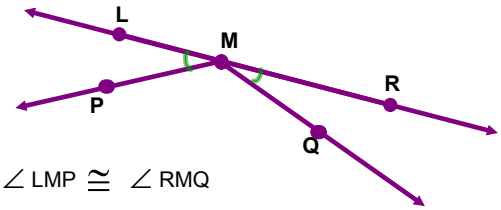
An obtuse ∠ has a measure that is greater than 90 °



Congruent Angles

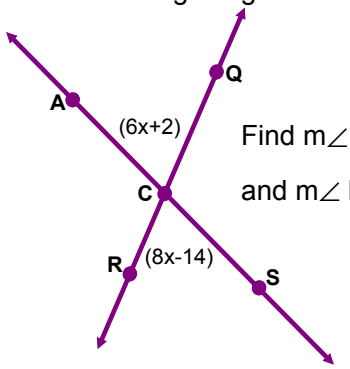
Angles that have the same measure are **congruent.**

Arcs on the figure indicate congruent angles.



∠ LMP ≅ ∠ RMQ

Practice using congruent angles

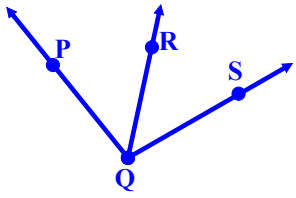


Find m∠ ACQ

and m∠ RCS.

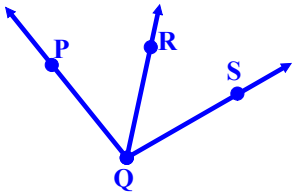
Angle Addition

If pt. R is in the interior of ∠PQS, then $m\angle PQR + m\angle RQS = m\angle PQS$



Def. ∠ bisector

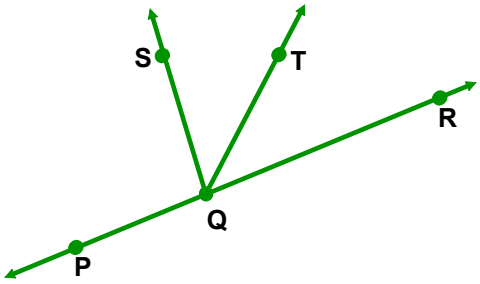
A ray that divides an angle into 2 ≅ angles.



$\overrightarrow{QR}$ bisects ∠ PQS. Name two congruent angles and show the congruence on the diagram.

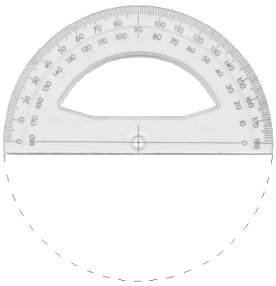
Practice

Text p. 36 # 7, 8 in your notes.



Post. 2-10 Protractor Post.

∠'s are measured in units called DEGREES between 0 and 180 that determine how far apart (wide) the 2 sides are.



The symbol for the measurement of an ∠ is $m\angle$