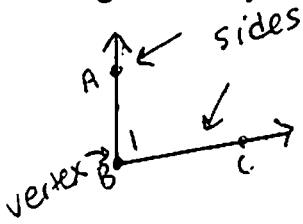


Section 3: Angles and Angle Relationships

Angle: two rays that have a common endpoint (vertex)

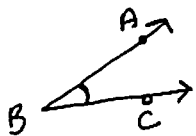


Names of angle: $\angle ABC$, $\angle CBA$, $\angle B$ (only possible if it's the only $\angle B$)
 * vertex has to be in middle

All angles have a first and last name: \angle B
 first last

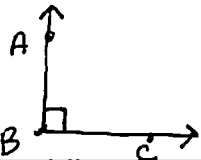
measure of $\angle ABC \rightarrow m\angle ABC$ $m\angle ABC = 90^\circ$

Types of Angles:



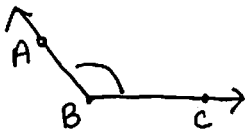
Acute angle:

$$0^\circ < m\angle B < 90^\circ$$



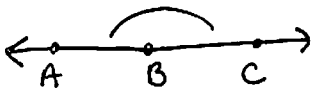
Right angle:

$$m\angle B = 90^\circ$$



Obtuse angle:

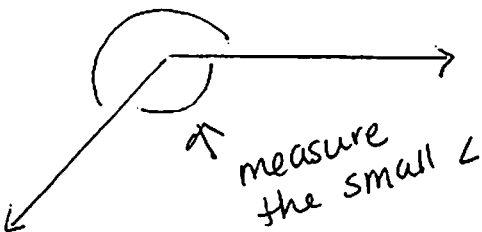
$$90^\circ < m\angle B < 180^\circ$$



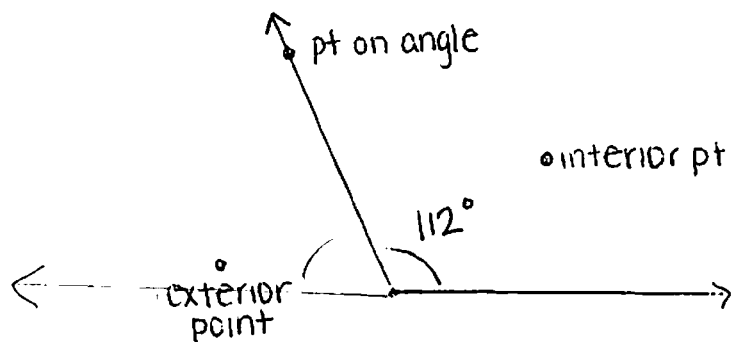
Straight angle:

$$m\angle B = 180^\circ$$

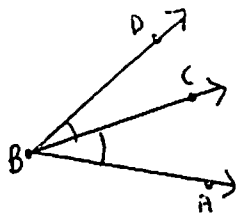
What if the angle is like this? What do you measure?



measure this angle w/ a protractor

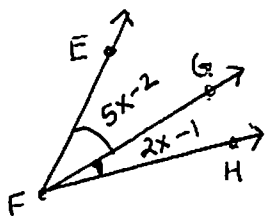


Angle Addition Postulate: (sum of parts equal the whole)



$$m\angle ABC + m\angle CBD = m\angle ABD$$

Ex 1: $m\angle HFG = 2x - 1$ $m\angle GFE = 5x - 2$ $m\angle HFE = 46$ Solve for x .



$$2x - 1 + 5x - 2 = 46$$

$$7x - 3 = 46$$

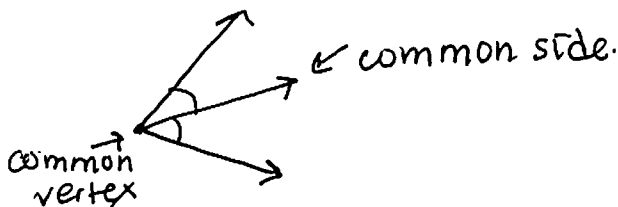
$$7x = 49$$

$$x = 7$$

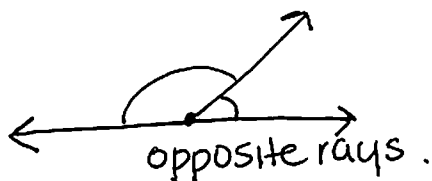
Angle Relationships:

1.) **Adjacent angles** - angles that share a side and have a common vertex.

(next to)
(side by side)



2.) **Linear pair** - adjacent angles where the non-common sides are opposite rays.



3.) **Supplementary angles** - describes two angles whose measure sums to 180° .

(linear pairs are always supplementary)

4.) **Complementary angles** - describes two angles whose measure sums to 90° .

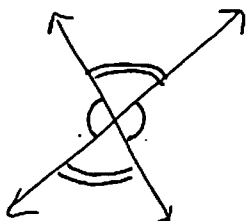


} don't have to be next to each other.

*** Remember: C before S, 90 before 180

5.) **Vertical angles** - two non adjacent angles formed by two intersecting lines.

(opposite \angle s of 2 intersecting lines)



* vert. \angle s are always \cong