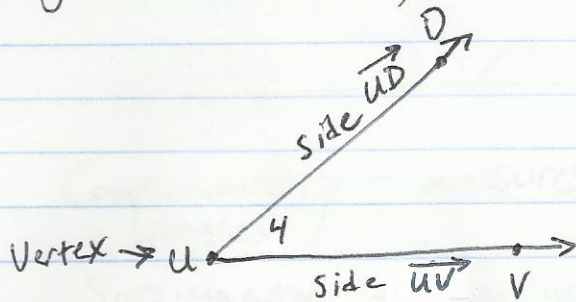


Section 1-6: Measuring Angles

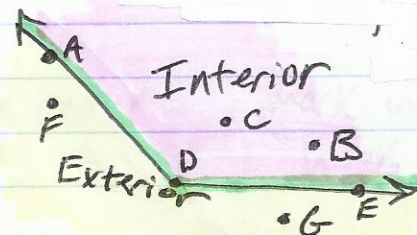
Angle - formed by two rays w/ same endpoint



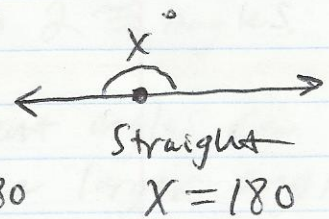
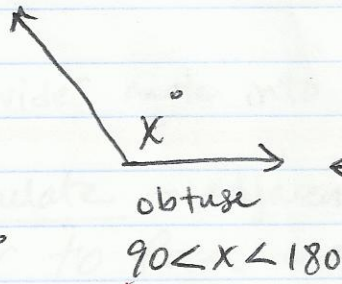
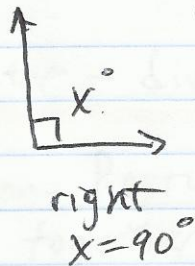
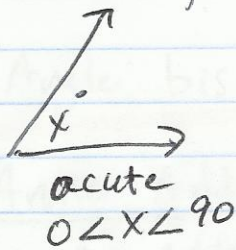
Names: $\angle U$ $\angle DUV$
 $\angle 4$ $\angle VUD$

3 parts of an angle:

* angles measured in degrees ($^\circ$).
 $m\angle A \rightarrow$ "measure of $\angle A$ ".

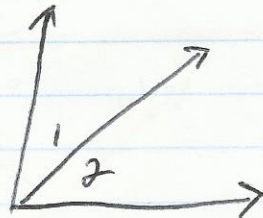


Classified by measure:

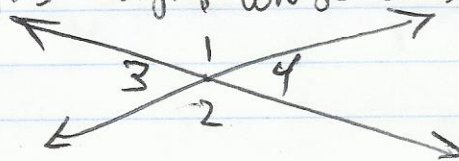


Angle Relationships:

Adjacent angles - coplanar; share a vertex and a ray

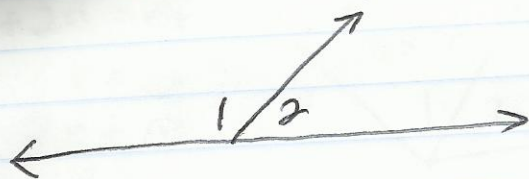


Vertical angles - angles whose sides are opposite rays.



* they are \cong .

Linear Pair - adjacent angles whose non-common sides are opposite rays.

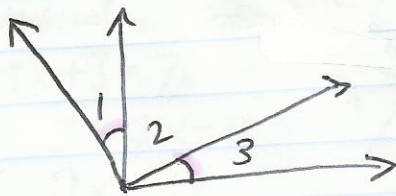


*supplementary

Complementary angles - measures add up to 90°

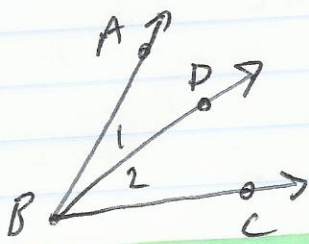
Supplementary angles - measures add up to 180°

\cong angles - same measure; mark w/ arcs or "hook marks."



Angle bisector - divides angle into 2 \cong angles.

Angle Addition Postulate - adjacent angles can be added together to form one larger angle.

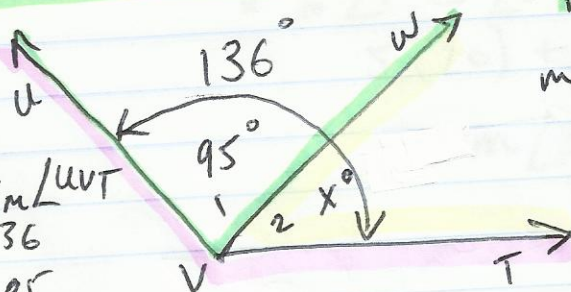


$$m\angle 1 + m\angle 2 = m\angle ABC$$

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

Ex 1)

$$\begin{array}{r}
 m\angle 1 + m\angle 2 = m\angle UVT \\
 95 + x = 136 \\
 \underline{-95} \quad \quad \underline{-95} \\
 x = 41^\circ
 \end{array}$$



$$m\angle 1 = 95^\circ$$

$$m\angle UVT = 136^\circ$$

Find $m\angle 2$

$$m\angle 2 = 41^\circ$$

$$m\angle 1 = 4x - 2 \quad m\angle UVT = 6x + 10 \quad m\angle 2 = 20^\circ$$

find x and $m\angle 1$

Example 2:

* Angle Add. Post. \angle

$$4x - 2 + 20 = 6x + 10$$

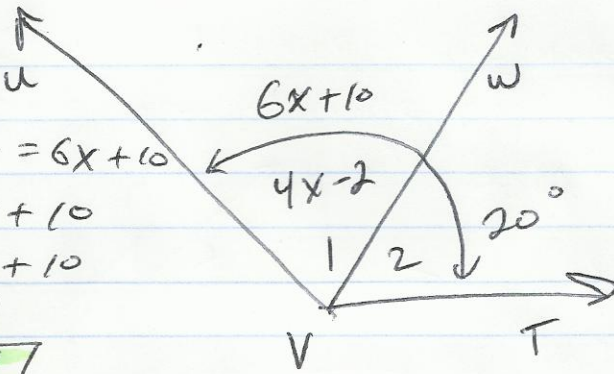
$$4x + 18 = 6x + 10$$

$$18 = 2x + 10$$

$$2x = 8$$

$$x = 4$$

$$m\angle 1 = 14^\circ$$



Example 3:

$$m\angle 1 = 5x + 3$$

$$m\angle 3 = 7x - 11$$

find $m\angle 2$

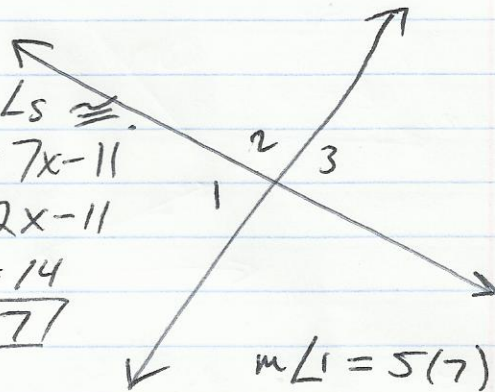
* Vertical \angle s \cong

$$5x + 3 = 7x - 11$$

$$3 = 2x - 11$$

$$2x = 14$$

$$x = 7$$



$$m\angle 1 = 5(7) + 3 = 38^\circ$$

$$180 - 38 = 142^\circ$$

$$m\angle 2 = 142^\circ$$

Ex. 4:

$$m\angle 1 = 5x + 3$$

$$m\angle 2 = 3x + 17$$

find $m\angle 3$

* $m\angle 1 + m\angle 2 = 180$ (linear pair)

$$5x + 3 + 3x + 17 = 180$$

$$8x + 20 = 180$$

$$8x = 160$$

$$x = 20$$

* $\angle 1 \cong \angle 3$ (vertical \angle s \cong)

$$5(20) + 3 = 103^\circ$$

$$m\angle 3 = 103^\circ$$