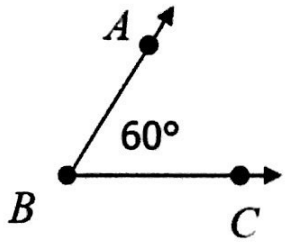
Main Ideas/Questions	Notes	1.4 Angles

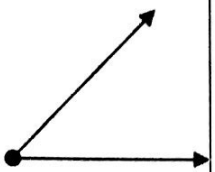
ANGLES



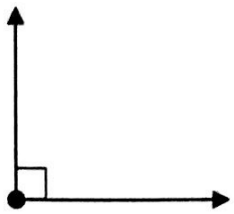
- An angle is formed by two rays with a **common endpoint**.
- This common endpoint is called the vertex.
- The **rays** are called the sides.
- Name an angle using three letters. *The **middle letter** must always represent the **vertex**!
- Use a single letter is there is **only one** angle located at the vertex.
- When referring to the measure, use a lowercase m.

Example: $m\angle ABC = 60°$

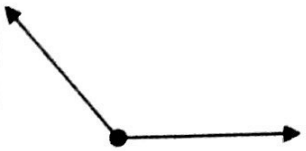
types of Angles



acute
$< 90°$



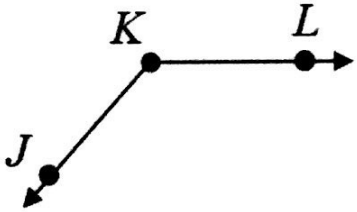
right
$= 90°$



obtuse
$90 - 180°$

straight
$= 180°$

Example 1



a) Name the vertex of the angle. K

b) Name the sides (rays) of the angle. $\overrightarrow{KL}$ $\overrightarrow{KJ}$

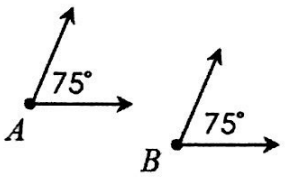
c) Give three different ways to name the angle.

$\angle K$, $\angle LKJ$, $\angle JKL$

d) Classify the angle. obtuse

Congruent Angles

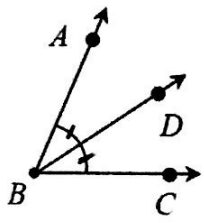
If $m\angle A = m\angle B$, then the angles are congruent. This is written as $\angle A \cong \angle B$.



Angle Bisector

A ray that divides an angle into two congruent angles.

In the diagram to the right, $\overrightarrow{BD}$ is an angle bisector, therefore, $\angle ABD \cong \angle CBD$.

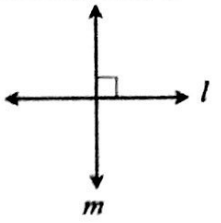


Perpendicular Lines

Two lines that intersect at a right angle.

The symbol for perpendicular is $\perp$.

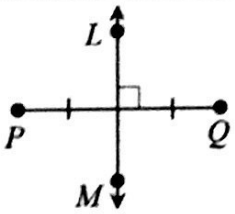
In the diagram to the right, line $\ell \perp$ line m.



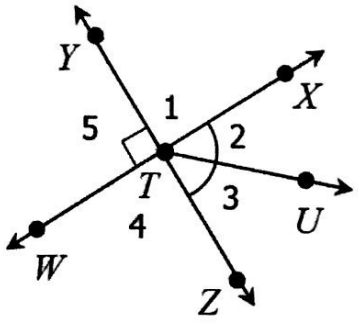
Perpendicular Bisector

A line, segment, or ray perpendicular to a segment at its midpoint.

In the diagram to the right, $\overleftrightarrow{LM}$ is the perpendicular bisector to $\overline{PQ}$.



Example 2



a) Name the vertex of $\angle 2$. T

b) Name the sides of $\angle 4$. $\overrightarrow{TW}$ and $\overrightarrow{TZ}$

c) Write another name for $\angle 1$. $\angle YTX$, $\angle XTY$

d) Classify $\angle YTW$. right

e) Classify $\angle YTU$. obtuse

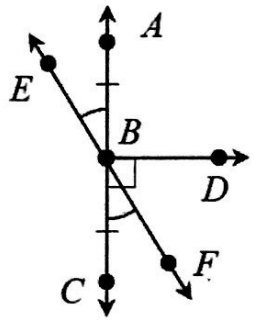
f) Classify $\angle XTU$. acute

g) Classify $\angle WTX$. Straight

h) Name two perpendicular lines. $\overleftrightarrow{WX} \perp \overleftrightarrow{YZ}$

i) Name an angle bisector. $\overrightarrow{TU}$ bisects $\angle XTZ$

Example 3



a) Write another name for $\angle CBF$. $\angle FBC$

b) Name the sides of $\angle EBD$. $\overrightarrow{BE}$ and $\overrightarrow{BD}$

c) Classify $\angle ABC$. Straight

d) Give an example of an obtuse angle. $\angle EBD$, $\angle FBA$

e) Name two congruent angles. $\angle ABE \cong \angle CBF$

f) Name a perpendicular bisector. $\overrightarrow{BD} \perp$ bisector of $\overline{AC}$