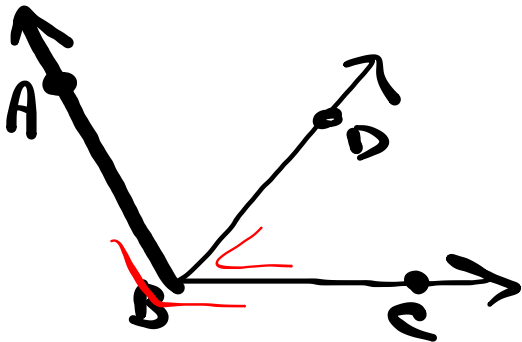
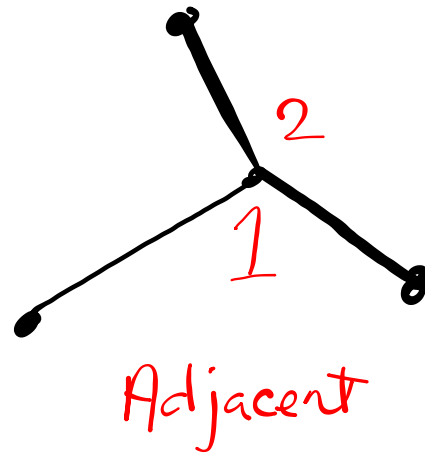
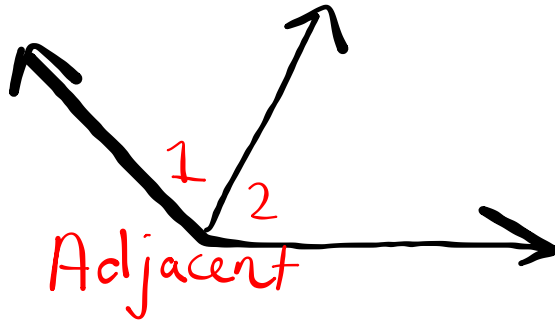
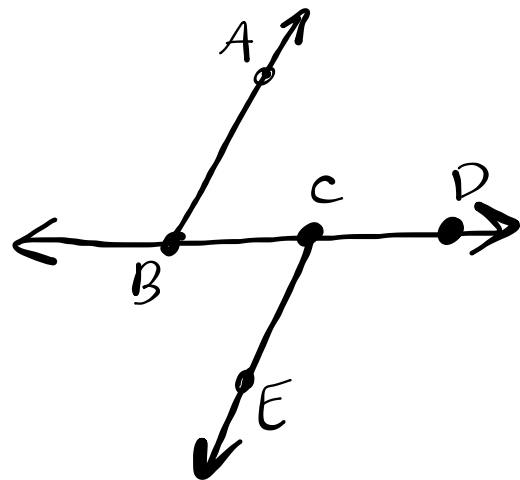


ANGLE RELATIONSHIPS

Adjacent Angles - two angles that lie in the same plane and have a common vertex and a common side, but no common interior points.

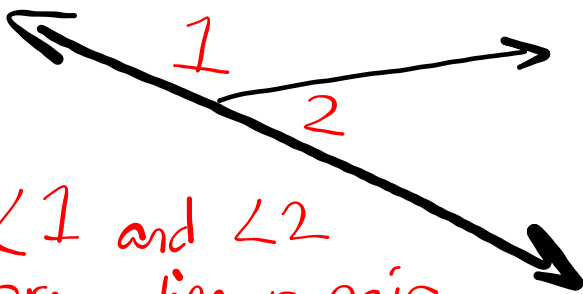


$\angle ABC$ and $\angle DBC$
NOT adjacent;
 they share an interior

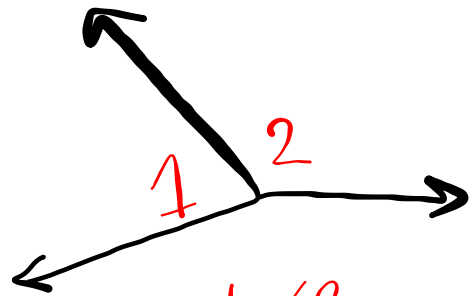


$\angle ABC$ and $\angle DCE$
NOT adjacent;
 no common vertex

Linear pair - pair of adjacent angles with noncommon sides forming opposite rays.



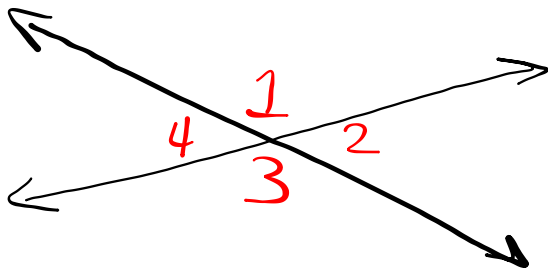
$\angle 1$ and $\angle 2$
are a linear pair



$\angle 1$ and $\angle 2$ are
not a linear pair.

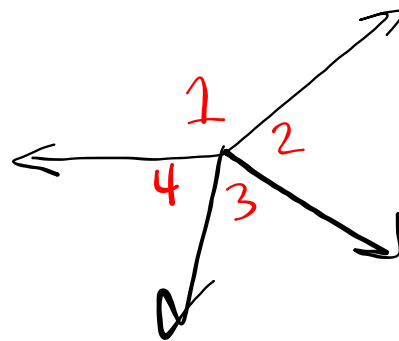
The noncommon sides are not
opposite rays.

Vertical Angles - two nonadjacent angles formed by two intersecting lines.



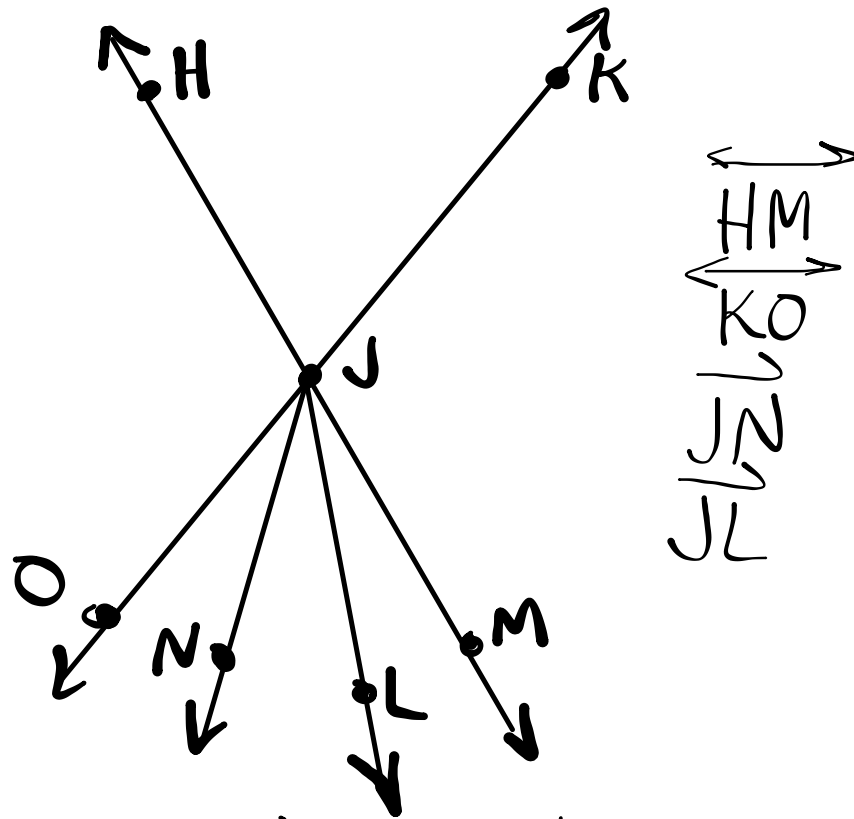
$\angle 1$ and $\angle 3$ are vertical angles.

$\angle 2$ and $\angle 4$ are vertical angles.



No vertical angles

No angles are formed by intersecting lines.



Two acute adjacent angles

$$\angle OJN \text{ \& } \angle NJL$$

$$\angle NJL \text{ \& } \angle LJM$$

A linear pair

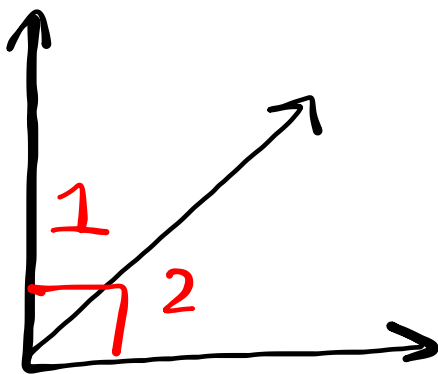
$$\angle HJK \text{ \& } \angle KJM$$

Vertical Angles

$$\angle HJK \text{ and } \angle OJM$$

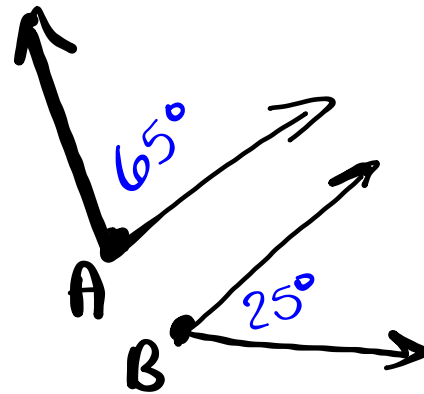
Complementary Angles -

two angles with measures that sum to 90° .



$$m\angle 1 + m\angle 2 = 90^\circ$$

The angles are complementary and adjacent

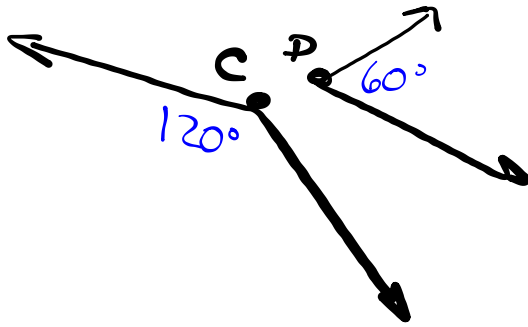


$$\begin{aligned} m\angle A + m\angle B &= 65^\circ + 25^\circ \\ &= 90^\circ \end{aligned}$$

The angles are complementary and nonadjacent

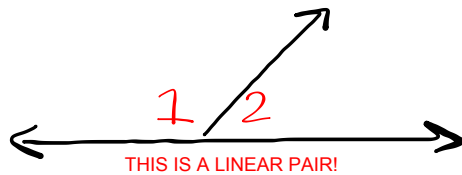
Supplementary Angles -

two angles whose measures sum to 180° .



$$\begin{aligned} m\angle C + m\angle D &= 120^\circ + 60^\circ \\ &= 180^\circ \end{aligned}$$

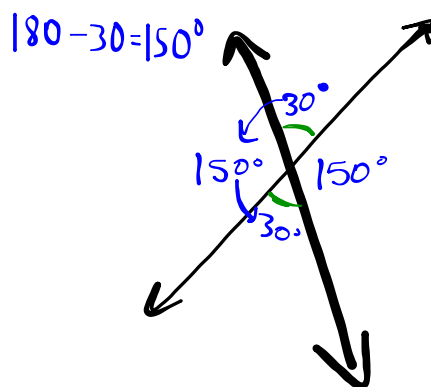
The angles are supplementary and nonadjacent



$$m\angle 1 + m\angle 2 = 180^\circ$$

The angles are supplementary and adjacent

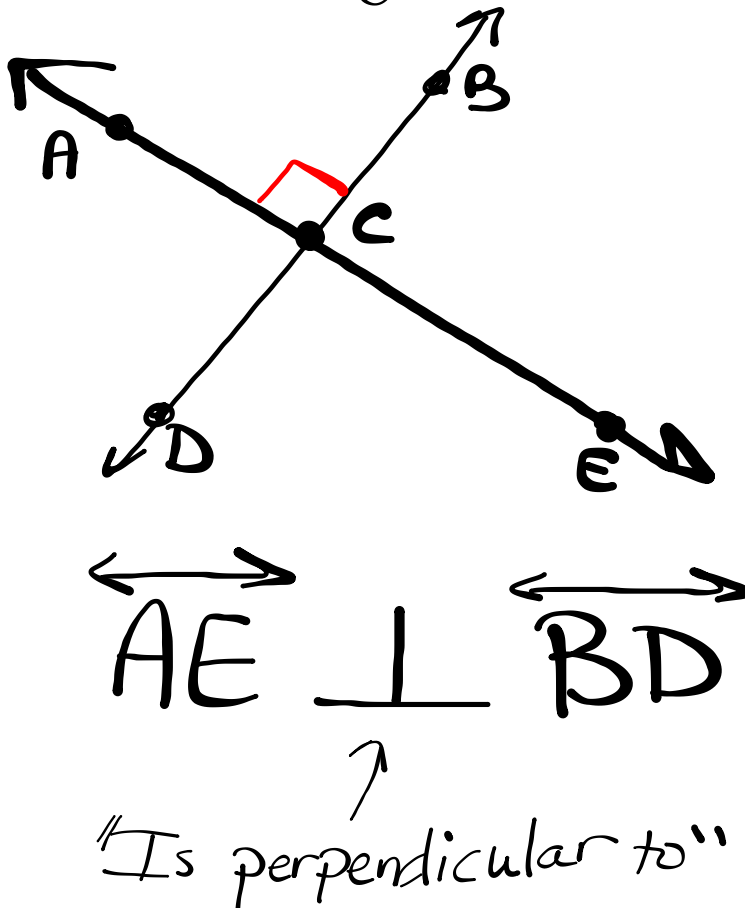
* All linear pairs are supplementary.

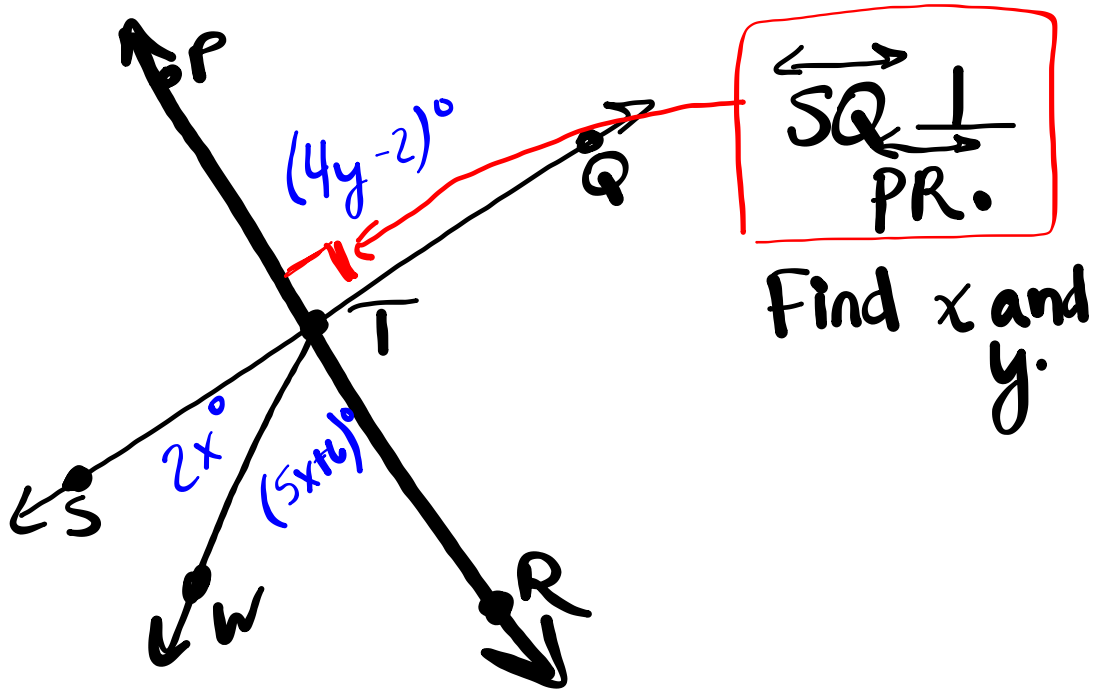


* All vertical angles are Congruent.

Perpendicular Lines -

- Intersect to form 4 right angles.
- Intersect to form congruent adjacent angles.





$$\begin{array}{r}
 4y - 2 = 90 \\
 \quad +2 \quad +2 \\
 \hline
 4y = 92 \\
 \frac{4y}{4} = \frac{92}{4} \\
 \boxed{y = 23}
 \end{array}$$

$$\begin{array}{r}
 2x + 5x + 6 = 90 \\
 7x + 6 = 90 \\
 \quad -6 \quad -6 \\
 \hline
 7x = 84 \\
 \frac{7x}{7} = \frac{84}{7} \\
 \boxed{x = 12}
 \end{array}$$