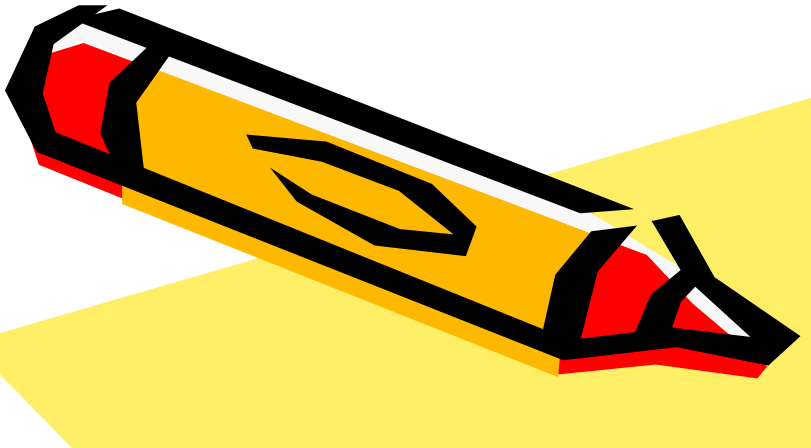
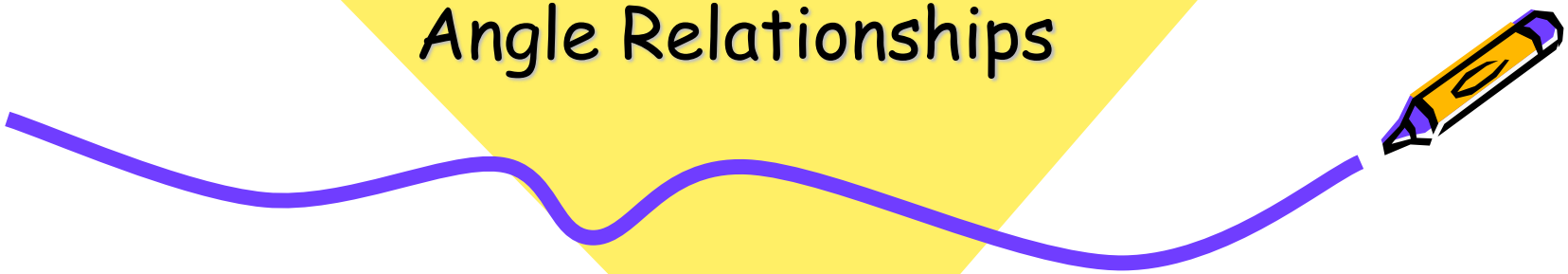


Geometry

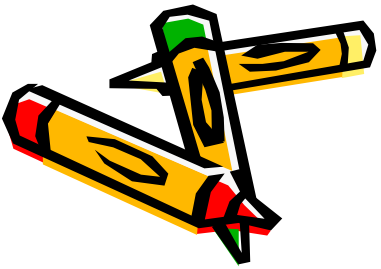
Angle Relationships



Angle Relationships

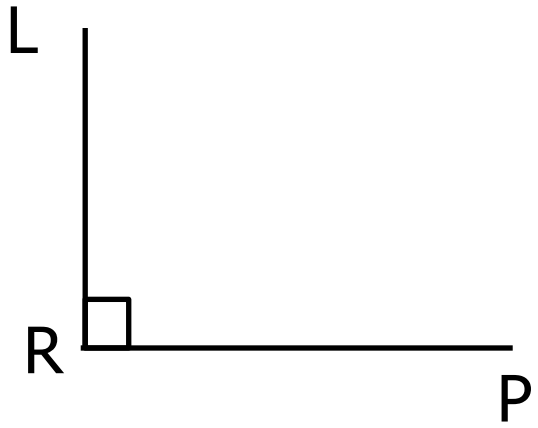
- Complementary Angles: Any 2 angles whose measures total 90^0. One angle is the compliment of the other.

- Supplementary Angles: Any 2 angles whose measures total 180^0. One angle is the supplement of the other.



Angle Relationships

Perpendicular lines ($\perp$): Perpendicular lines intersect to form right angles. A right angle indicator (a small box drawn near the vertex) may be used to indicate a right angle.



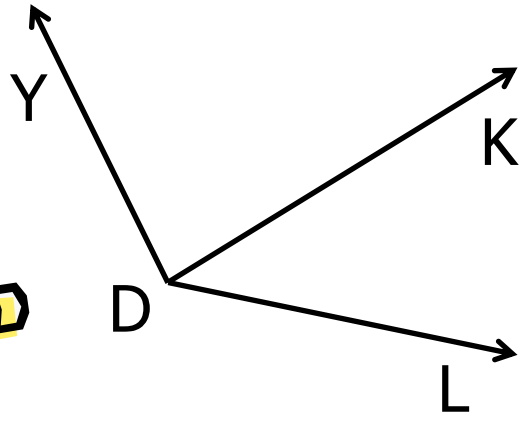
$\overline{LR} \perp \overline{RP}$

$\angle LRP$ is a right angle

$m\angle LRP = 90^0$

Angle Relationships

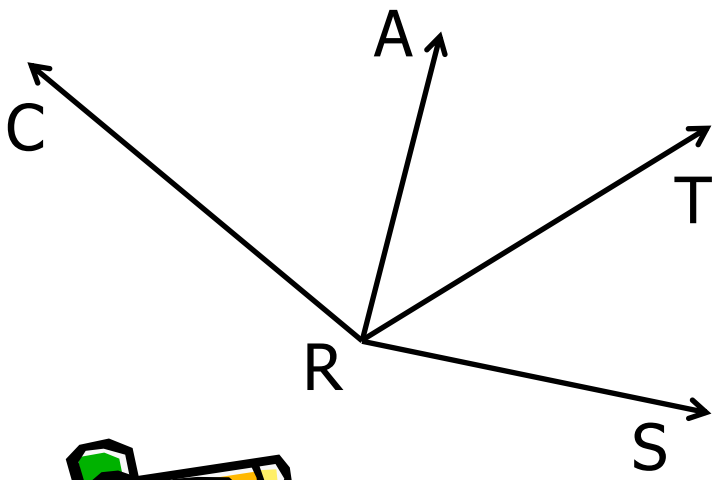
Adjacent Angles: Adjacent Angles share no interior points. They share a vertex and one common side (the side that separates them). They are next to each other with no gaps and no overlap, and share the vertex.



∠YDK and ∠KDL are adjacent angles

Angle Relationships

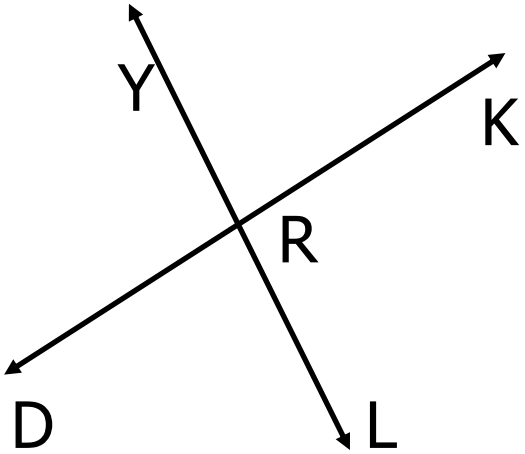
Note that ∠CRA and ∠TRS are non-adjacent (gap).
∠CRT and ∠ARS are also non-adjacent (overlap).



Name 2 pairs of adjacent angles in the figure.

Angle Relationships

Vertical Angles: two non-adjacent angles formed by intersecting lines (opposite angels from an X). Vertical Angles are congruent.



$\angle YRK$ and $\angle DRL$ are vertical angles

$\angle YRK \cong \angle DRL$

$m\angle YRK = m\angle DRL$

and

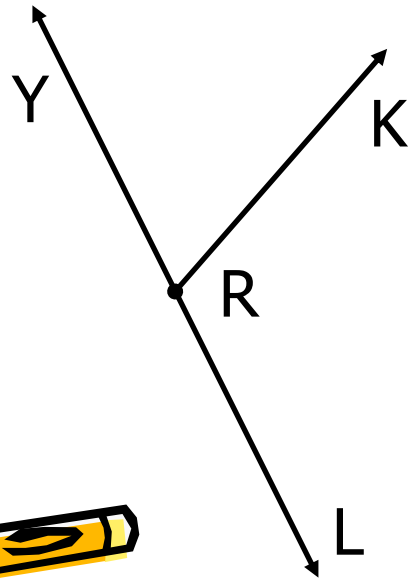
$\angle YRD$ and $\angle KRL$ are vertical angles

$\angle YRD \cong \angle KRL$

$m\angle YRD = m\angle KRL$

Angle Relationships

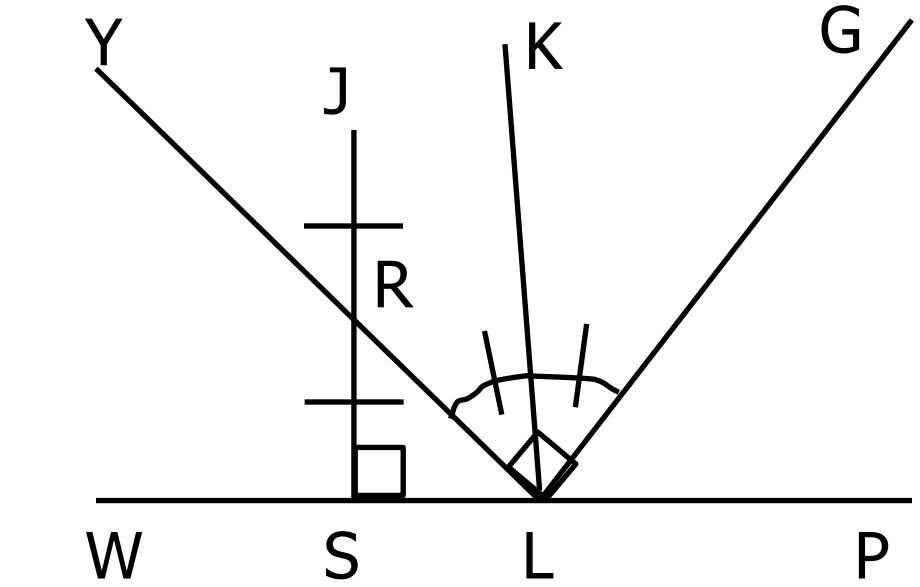
Linear Pair: A pair of angles (2 angles) that are both adjacent and supplementary.



$\angle YRK$ and $\angle KRL$ are a linear pair

$m\angle YRK + m\angle KRL = 180^0$

Angle Relationships

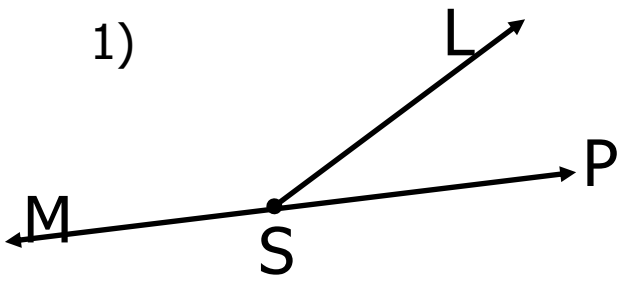


Name…

1. Right angle
2. Vertical angles
3. Complimentary angles
4. Supplementary angles
5. Linear pair
6. Congruent angles
7. Congruent segments
8. Perpendicular segments

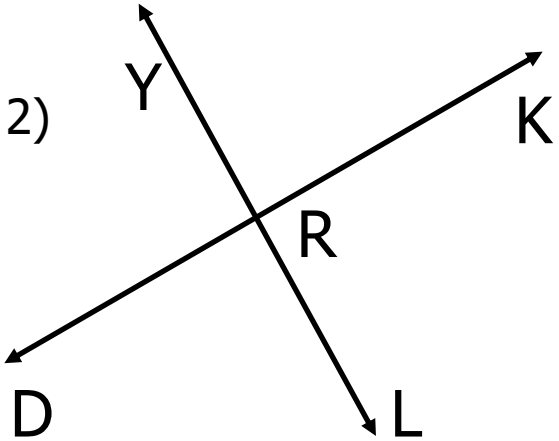
Examples

1)



$m\angle MSL = 6x + 20$, $m\angle LSP = 2x$
Find $\angle MSL$.

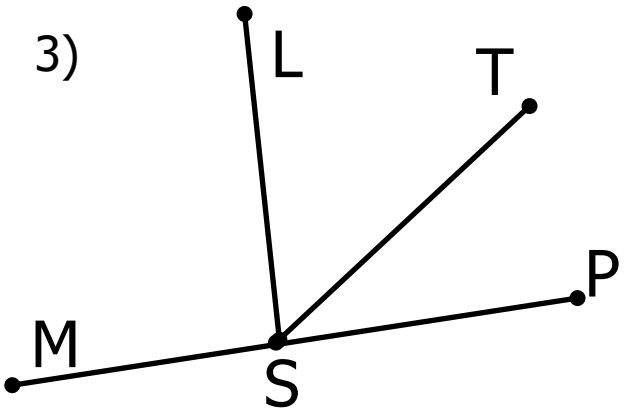
2)



$m\angle YRK = 5x+15$, $m\angle DRL = 4x + 25$
Find $\angle DRL$ and $\angle KRL$.

Examples

3)



$\overline{LS} \perp \overline{MP}$

$m\angle TSL = 3x + 20$, $m\angle PST = 4x$

Find $\angle TSL$.

4) $\angle ABC$ and $\angle STP$ are supplementary.

$m\angle STP = 8x - 15$, $m\angle ABC = 4x + 27$

Find and classify $\angle STP$