# Notes 6.5 Angle pairs

Two angles are **complementary angles** if the sum of their measures is 90°. Each angle is the *complement* of the other. Two angles are **supplementary angles** if the sum of their measures is 180°. Each angle is the *supplement* of the other.

Complementary angles and supplementary angles can be *adjacent angles* or *nonadjacent angles*. **Adjacent angles** are two angles that share a common vertex and side, but have no common interior points.

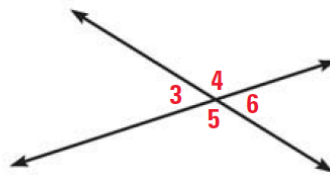| Complementary angles	Supplementary angles
Adjacent Nonadjacent	Adjacent Nonadjacent
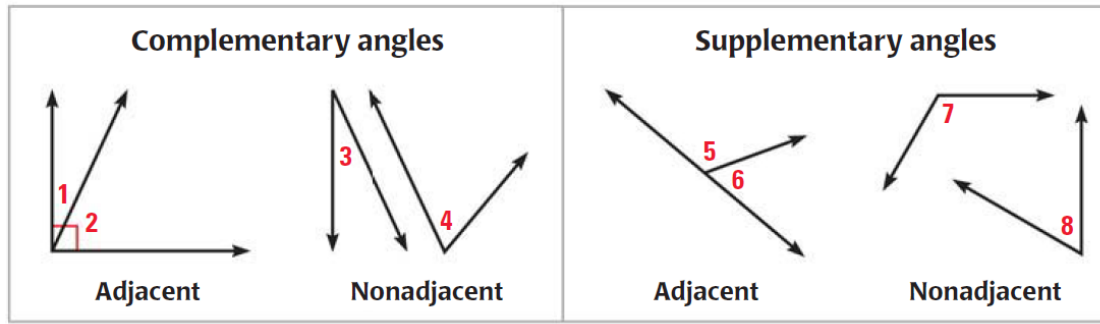
ANGLE PAIRS Two adjacent angles are a **linear pair** if their noncommon sides are opposite rays. The angles in a linear pair are supplementary angles.

Two angles are **vertical angles** if their sides form two pairs of opposite rays.
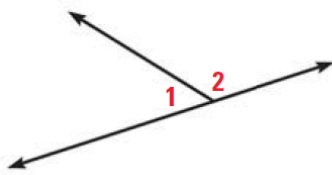
∠1 and ∠2 are a linear pair.

∠3 and ∠6 are vertical angles.
∠4 and ∠5 are vertical angles. Vertical angles are congruent

Interpreting a Diagram

There are some things you can conclude from a diagram, and some you cannot. For example, here are some things that you **can conclude** from the diagram at the right:
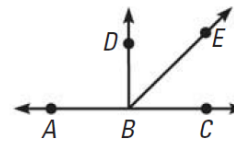
- All points shown are coplanar.
- Points *A*, *B*, and *C* are collinear, and *B* is between *A* and *C*.
- $\overleftrightarrow{AC}$, $\overleftrightarrow{BD}$, and $\overrightarrow{BE}$ intersect at point *B*.
- ∠*DBE* and ∠*EBC* are adjacent angles, and ∠*ABC* is a straight angle.
- Point *E* lies in the interior of ∠*DBC*.

In the diagram above, you **cannot conclude** that $\overline{AB} \cong \overline{BC}$, that ∠*DBE* ≅ ∠*EBC*, or that ∠*ABD* is a right angle. This information must be indicated, as shown at the right.