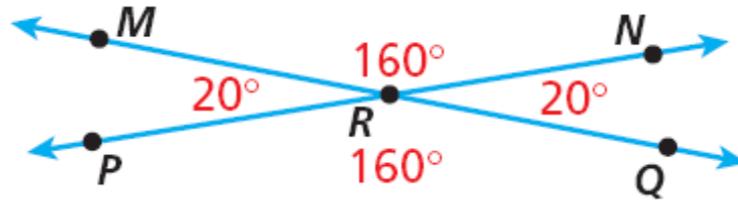# Vocabulary

congruent

vertical angles

adjacent angles

complementary angles

supplementary angles

Congruent angles have the same measure.
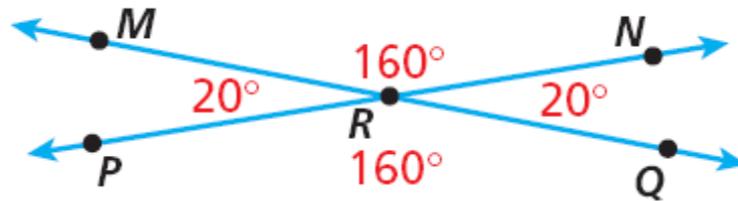

Vertical angles are formed opposite each other when two lines intersect. Vertical angles have the same measure, so they are always congruent.

∠MRP and ∠NRQ are vertical angles.

∠MRN and ∠PRQ are vertical angles

Adjacent angles are side by side and have a common vertex and ray. Adjacent angles may or may not be congruent.
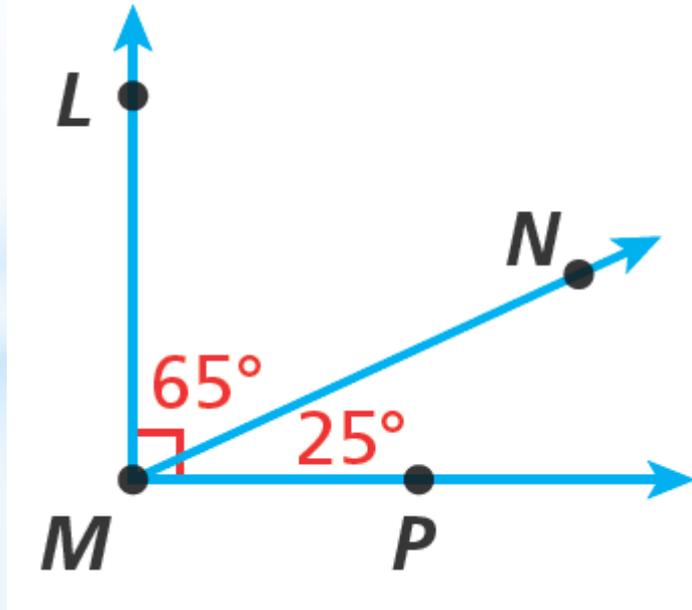

$\angle MRN$ and $\angle NRQ$ are adjacent angles. They share vertex R and $\overrightarrow{RN}$.

$\angle NRQ$ and $\angle QRP$ are adjacent angles. They share vertex R and $\overrightarrow{RQ}$.

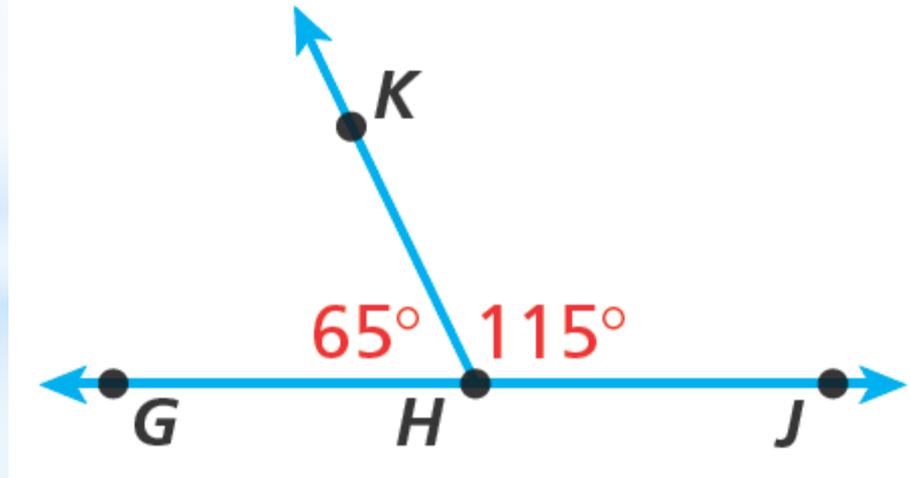**<u>Complementary angles</u>** are two angles whose measures have a sum of 90°.

65° + 25° = 90°

∠*LMN* and ∠*NMP* are complementary.

Supplementary angles are two angles whose measures have a sum of 180°.

65° + 115° = 180°

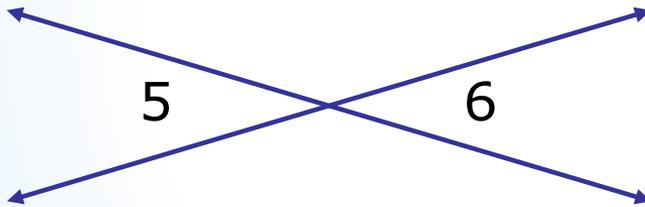∠*GHK* and ∠*KHJ* are supplementary.

*Transversal Line

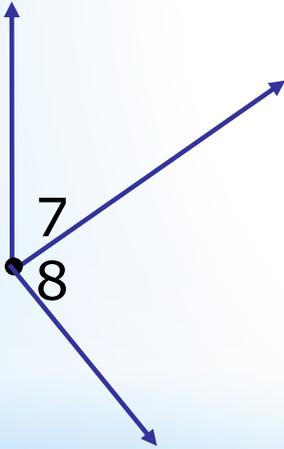When two parallel lines are cut by a third line, the third line is called the *transversal*.
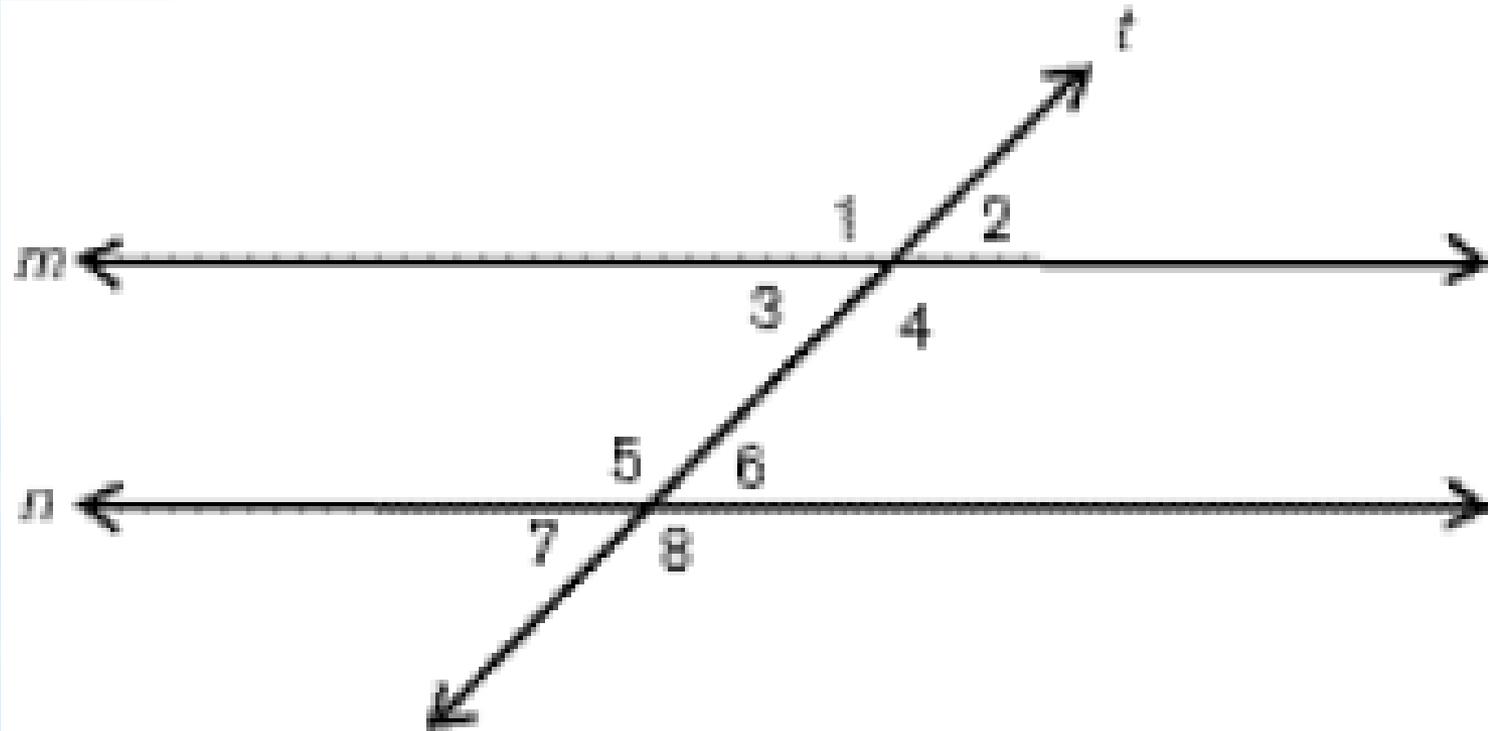
Identify the type of each angle pair shown.

∠5 and ∠6 are opposite each other and are formed by two intersecting lines.

They are vertical angles.

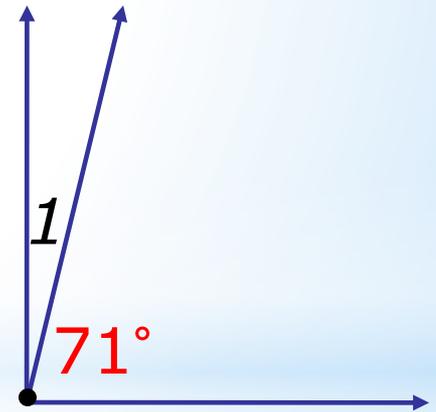# Identify the type of each angle pair shown.

$\angle7$ and $\angle8$ are side by side and have a common vertex and ray.
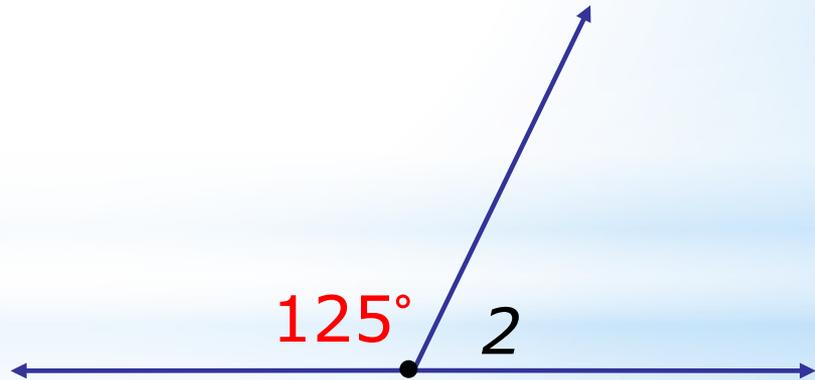
They are adjacent angles.

Find each unknown angle measure.

The angles are complementary.

Find each unknown angle measure.
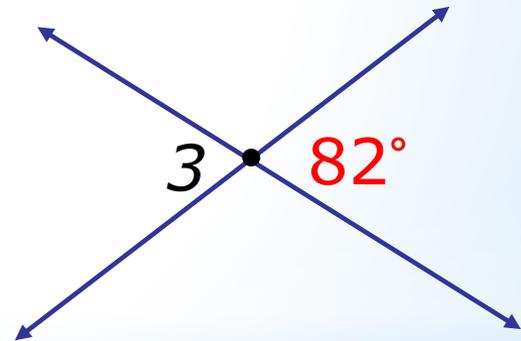
The angles are supplementary.

125° 2

Additional Example 2C: Identifying an Unknown Angle Measure

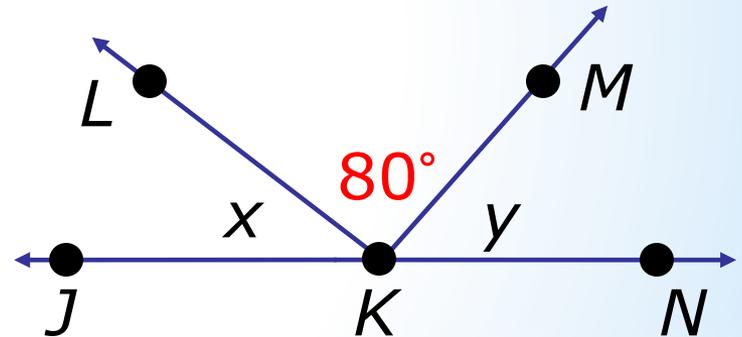**Find each unknown angle measure.**

The angles are vertical angles.
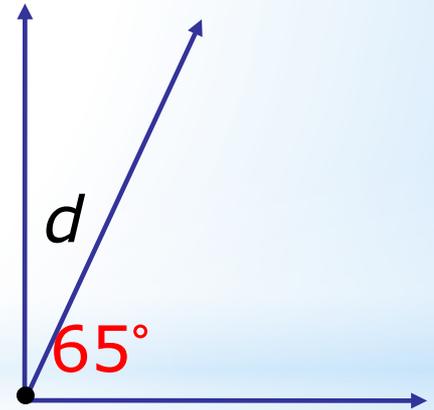
m∠3 = 82°

Vertical angles are congruent.

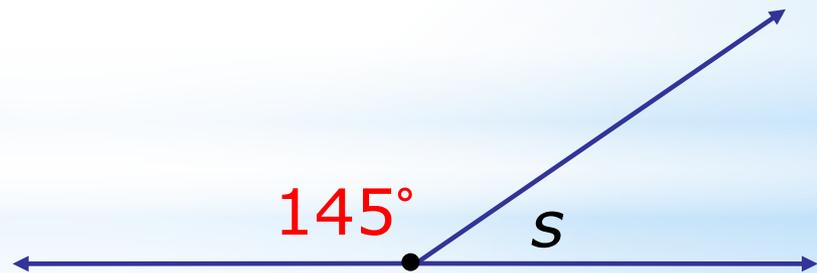**Find each unknown angle measure.**

∠*JKL* and ∠*MKN* are congruent.

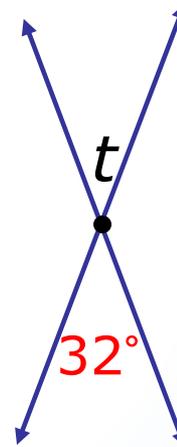**Find each unknown angle measure.**

The angles are complementary.

d

65°

Find each unknown angle measure.
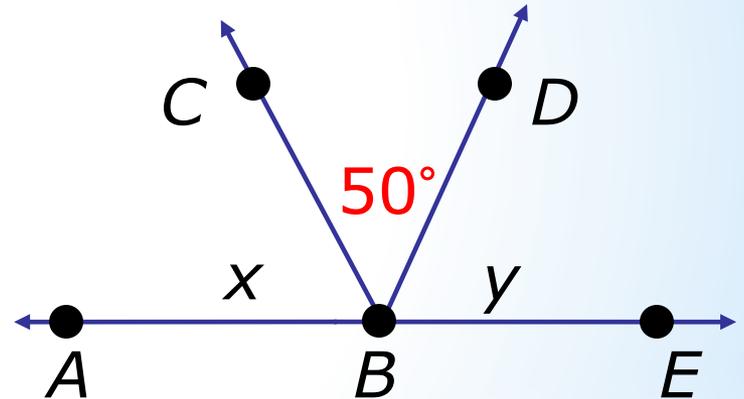
The angles are supplementary.

145° s

Find each unknown angle measure.

The angles are vertical angles.
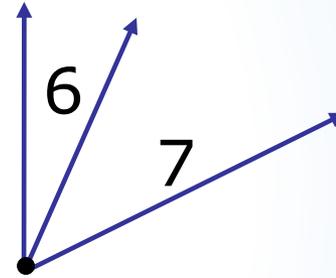
Find each unknown angle measure.

∠**ABC** and ∠**DBE** are
congruent.

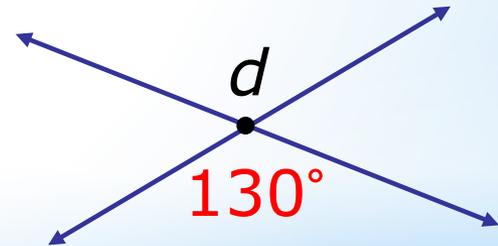# Lesson Quiz

1. Identify the type of angle pair shown.
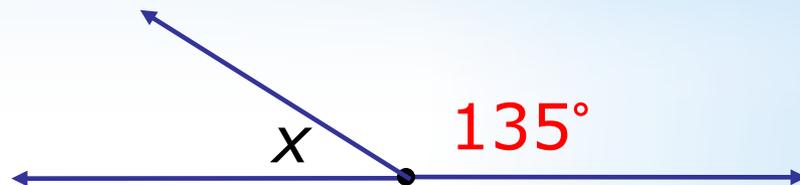
adjacent

Find each unknown angle measure.

2. The angles are vertical angles.

$d = 130°$

3. The angles are supplementary.

$x = 45°$

2. Identify the unknown angle measure if the angles are complementary.

A. 40°

B. 50°

C. 90°

D. 140°

A

40°
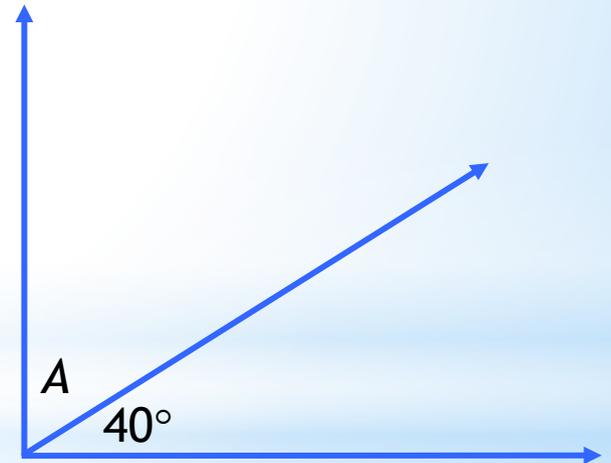
3. Identify the unknown angle measure if the angles are supplementary.

A. $y = 145°$

B. $y = 125°$

C. $y = 90°$

D. $y = 35°$

A 55°