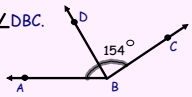
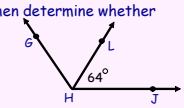
Bell Work

1. $\overrightarrow{BD}$ bisects ∠ABC. Find m∠ABD and m∠DBC.

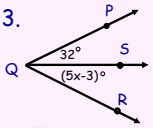


2. $\overrightarrow{HL}$ bisects ∠GHJ. Find m∠GHL and m∠GHJ. Then determine whether ∠GHJ is acute, right, obtuse or straight.

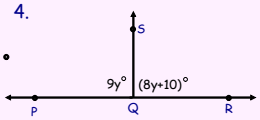


$\overrightarrow{QS}$ bisects ∠PQR. Find the value of the variable.

3.



4.



review homework

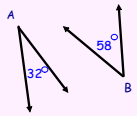
2.3 Complementary and Supplementary Angles

In this lesson, you will learn to:

-- Find measures of complementary and supplementary angles.

Two angles are complementary angles if the sum of their measures is 90°.

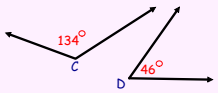
Each angle is the complement of the other.



∠A and ∠B are complementary angles.
m∠A + m∠B = 32° + 58° = 90°.

Two angles are supplementary angles if the sum of their measures is 180°.

Each angle is the supplement of the other.

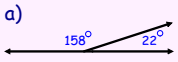


∠C and ∠D are supplementary angles.
m∠C + m∠D = 134° + 46° = 180°.

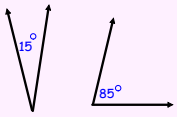
Example 1

Determine whether the angles are complementary, supplementary, or neither.

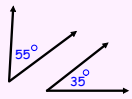
a)



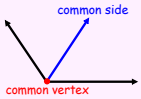
b)



c)



Two angles are adjacent angles if they share a common vertex and side, but have no common interior points.

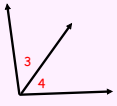


Example 2

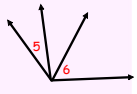
Tell whether the numbered angles are adjacent or nonadjacent.

a)

b)



c)



Example 3

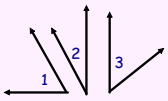
a) $\angle A$ is a complement of $\angle C$, and $m\angle A = 47^0$. Find $m\angle C$.

b) $\angle P$ is a supplement of $\angle R$, and $m\angle R = 36^0$. Find $m\angle P$.

A theorem is a true statement that follows from other true statements.

Theorems 2.1 and 2.2

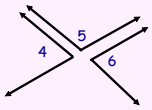
2.1 Congruent Complements Theorem



If two angles are complementary to the same angle, then they are congruent.

If $m\angle 1 + m\angle 2 = 90^\circ$ and $m\angle 2 + m\angle 3 = 90^\circ$, then $\angle 1 \cong \angle 3$.

2.2 Congruent Supplements Theorem

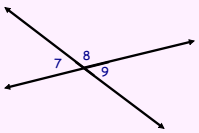


If two angles are supplementary to the same angle, then they are congruent.

If $m\angle 4 + m\angle 5 = 180^\circ$ and $m\angle 5 + m\angle 6 = 180^\circ$, then $\angle 4 \cong \angle 6$.

Example 4

$\angle 7$ and $\angle 8$ are supplementary, and $\angle 8$ and $\angle 9$ are supplementary. name a pair of congruent angles. Explain your reasoning.



Assignment