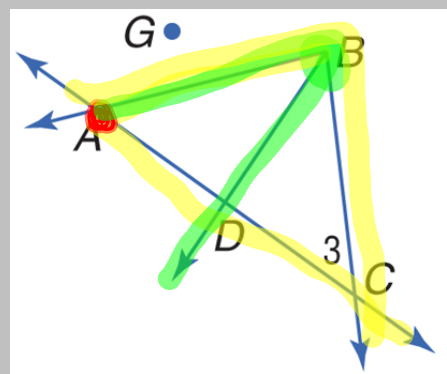


Friday, 8/29/14

1. Take out vocab prep
2. Complete Warm up
3. Notes: Section 1.5

HW: 1.5 Practice WS
1.3 Practice WS

WARM UP



1. Name the vertex of $\angle 3$. **B**
2. Name a side of $\angle BAC$. **\vec{AC}**
3. Name an acute angle with a vertex at B.

Objectives

- Identify and use special pairs of angles.
- Identify perpendicular lines.

Content Standards

Preparation for G.SRT.7 Explain and use the relationship between the sine and cosine of complementary angles.

Key Vocab

- adjacent angles
- linear pair
- vertical angles
- complementary angles
- supplementary angles
- perpendicular

SPECIAL ANGLE RELATIONSHIPS

Look at the examples and non examples of the special angle relationships on the next page.

With your partner, make a *conjecture* about what defines each special relationship.

Adjacent angles:

Examples $\angle 1$ and $\angle 2$ are adjacent angles.

Nonexamples $\angle 3$ and $\angle ABC$ are nonadjacent angles

Linear Pair

Example $\angle 1$ and $\angle 2$ *adjacent \angle s

Nonexample $\angle ADB$ and $\angle ADC$

Vertical angles:

Examples $\angle 1$ and $\angle 2$; $\angle 3$ and $\angle 4$

Nonexample $\angle AEB$ and $\angle DEC$

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

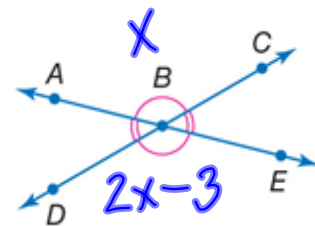
A **linear pair** is a pair of **adjacent angles** with **noncommon sides** that **are opposite rays**.

Vertical angles are **two nonadjacent angles** formed by **two intersecting lines**.

Vertical angles are congruent.

Examples $\angle ABC \cong \angle DBE$ and $\angle ABD \cong \angle CBE$

$$x = 2x - 3$$

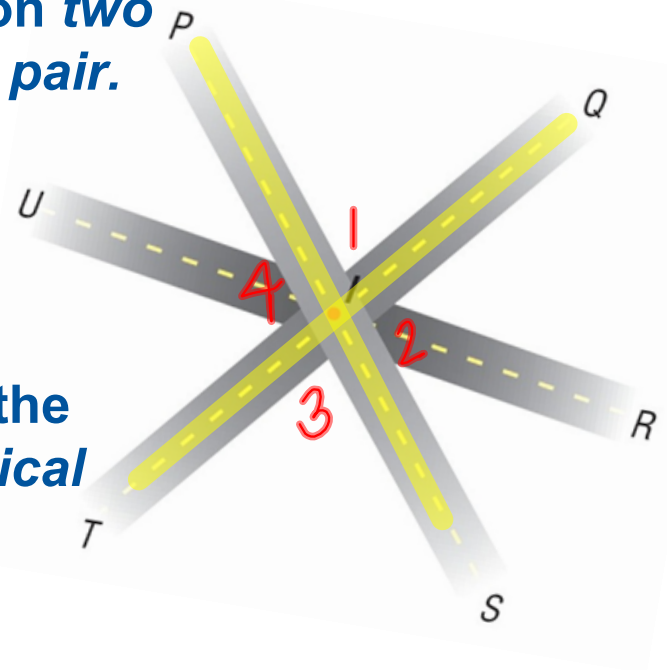


A. ROADWAYS Name an angle pair that satisfies the condition *two angles that form a linear pair*.

$\angle VIP$ & $\angle VIS$

B. ROADWAYS Name an angle pair that satisfies the condition *two acute vertical angles*.

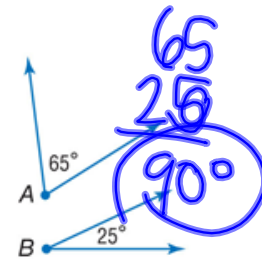
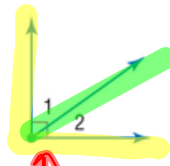
$\angle 1$ & $\angle 3$



d

Complementary angles are two angles with measures that have a **sum of 90.**

Examples $\angle 1$ and $\angle 2$ are complementary.
 $\angle A$ is complementary to $\angle B$.

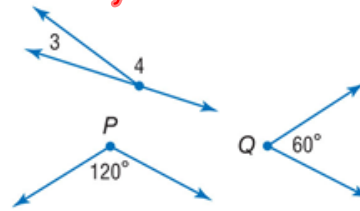


**don't have to be adjacent*

90° b/c rt. ∠

Supplementary angles are two angles with measures that have a **sum of 180.**

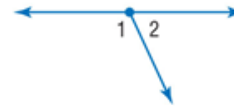
Examples $\angle 3$ and $\angle 4$ are supplementary.
 $\angle P$ and $\angle Q$ are supplementary.



8

The angles in a linear pair are supplementary.

Example $m\angle 1 + m\angle 2 = 180$



ALGEBRA Find the measures of two **supplementary angles** if the measure of one angle is 6 less than five times the measure of the other angle.

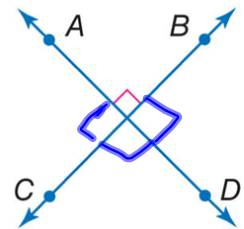
$$m\angle 1 + m\angle 2 = 180$$

$$(a) + (5a - 6) = 180 \leftarrow \text{Algebra}$$

solve for a
plug back in

 **KeyConcept** Perpendicular Lines

- Perpendicular lines intersect to form four right angles.
- Perpendicular lines intersect to form congruent adjacent angles.
- Segments and rays can be perpendicular to lines or other line segments and rays.
- The right angle symbol in the figure indicates that the lines are perpendicular.

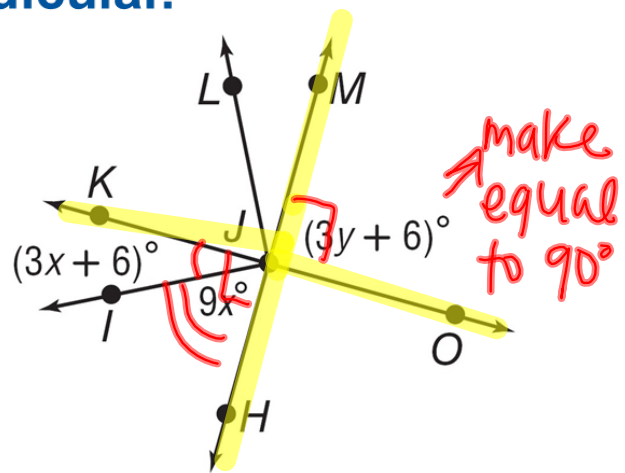


Symbol \perp is read *is perpendicular to*.

Example $\overleftrightarrow{AD} \perp \overleftrightarrow{CB}$

ALGEBRA Find x and y so that \overleftrightarrow{KO} and \overleftrightarrow{HM} are perpendicular.

$$3y + 6 = 90$$



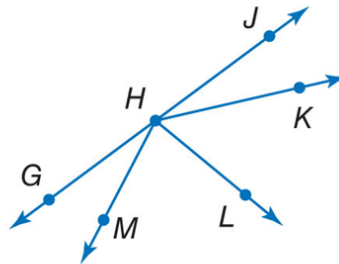
$$3x + 6 + 9x = 90$$

Read in Book 1.5

KeyConcept Interpreting Diagrams

CAN be Assumed

- All points shown are coplanar.
- $G, H,$ and J are collinear.
- $\overrightarrow{HM}, \overrightarrow{HL}, \overrightarrow{HK},$ and \overleftarrow{GJ} intersect at H .
- H is between G and J .
- L is in the interior of $\angle MHK$.
- $\angle GHM$ and $\angle MHL$ are adjacent angles.
- $\angle GHL$ and $\angle LHJ$ are a linear pair.
- $\angle JHK$ and $\angle KHG$ are supplementary.



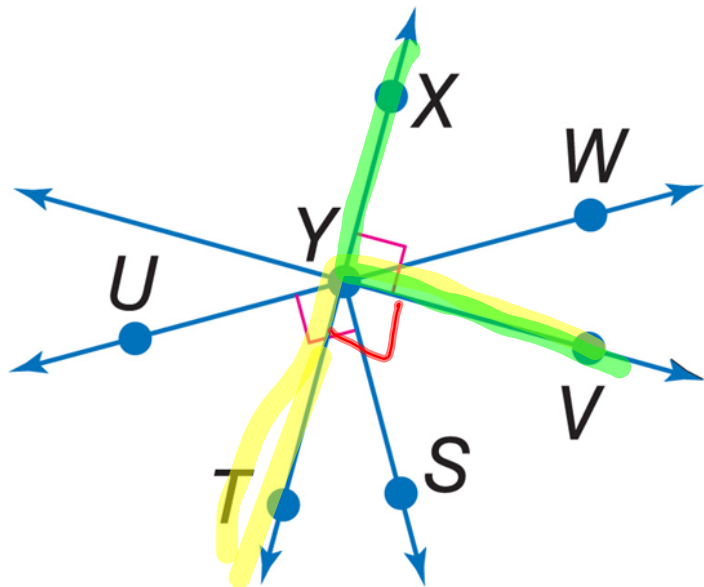
CANNOT be Assumed

- Perpendicular lines: $\overrightarrow{HM} \perp \overrightarrow{HL}$
- Congruent angles: $\angle JHK \cong \angle GHM$
- $\angle JHK \cong \angle KHL$
- $\angle KHL \cong \angle LHM$
- Congruent segments: $\overline{GH} \cong \overline{HJ}$
- $\overline{HJ} \cong \overline{HK}$
- $\overline{HK} \cong \overline{HL}$
- $\overline{HL} \cong \overline{HG}$

A. Determine whether the following statement can be justified from the figure below. Explain.

$$m\angle VYT = 90$$

yes.



B. Determine whether the following statement can be justified from the figure below. Explain.

$\angle TYW$ and $\angle TYU$ are supplementary.

