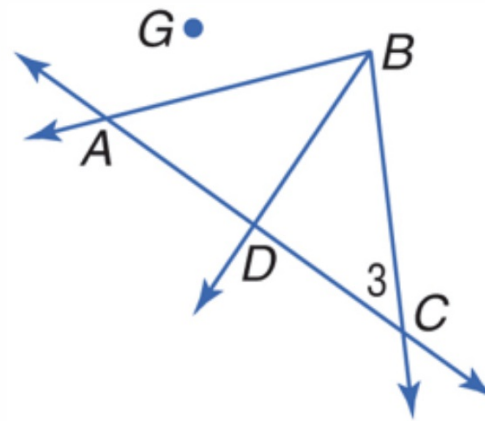


BELLRINGER

1.) Name angle 3 another way.

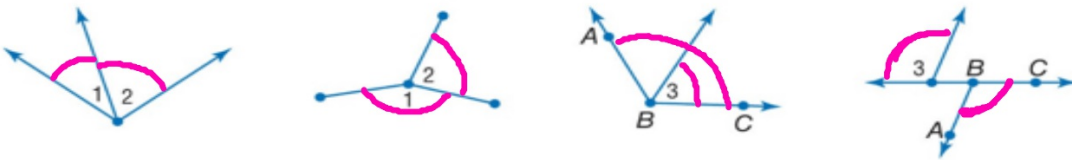
2.) Name it's sides

3.) Name it's vertex



KeyConcept Special Angle Pairs

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.

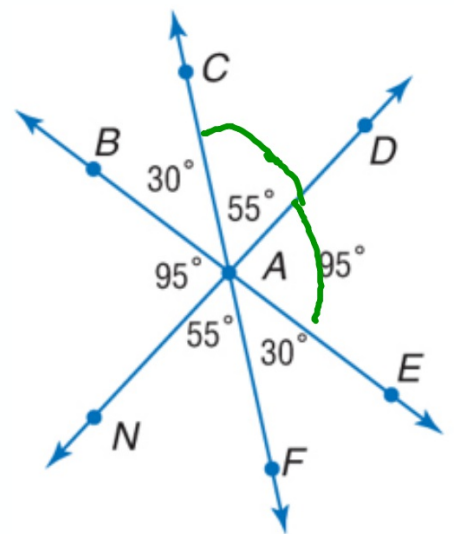


LESSON 1-5 Angle Relationships

Real-World Example 1

A. Name two adjacent angles.

$\angle CAD$ $\angle DAE$

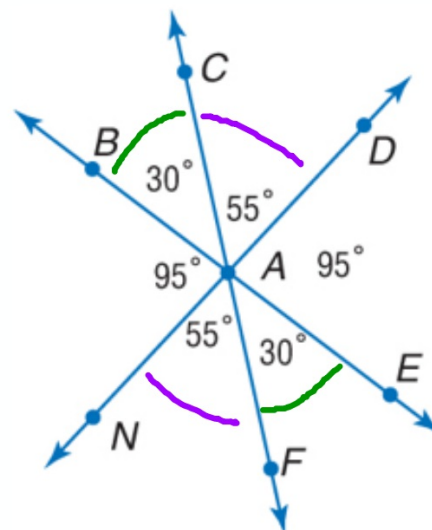


 Real-World Example 1

B. Name two acute vertical angles.

$\angle CAD$ and $\angle NAF$

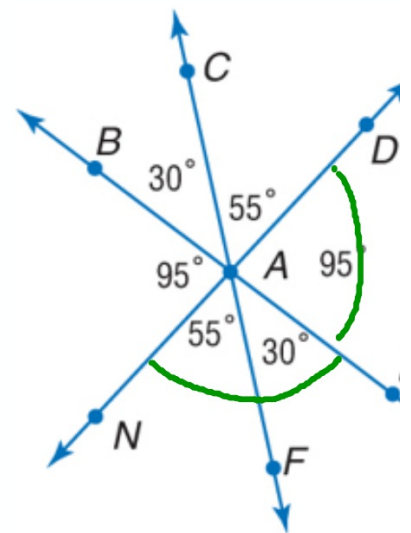
$\angle BAC$ and $\angle FAE$



 Real-World Example 1

C. Name two angles that form a linear pair.

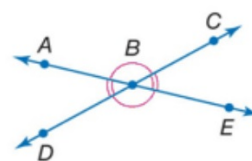
$\angle NAE$ and $\angle DAE$



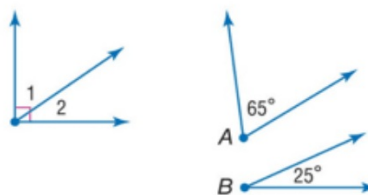
LESSON 1-5 Angle Relationships

Key Concept Angle Pair Relationships

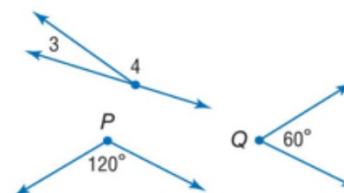
Vertical angles are congruent.



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



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



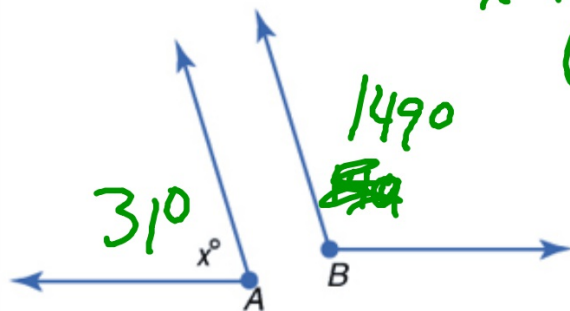
The angles in a linear pair are supplementary.



EXAMPLE 2

Angle Measure

ALGEBRA Find the measures of $\angle A$ and $\angle B$ if $m\angle A = x$ and the $m\angle B = 5x - 6$, and $\angle A$ and $\angle B$ are supplementary.



$$x + 5x - 6 = 180$$

$$6x - 6 = 180$$

$$+6 \quad +6$$

$$\frac{6x}{6} = \frac{186}{6}$$

$$x = 31$$

EXAMPLE 3

ALGEBRA Find the measures of two complementary angles if one angle measure is $2x + 10$ and the measure of the other angle is $3x + 5$.

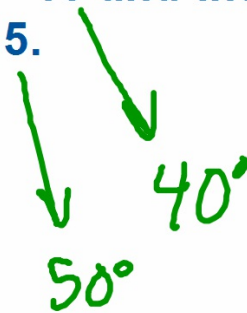
$$2x + 10 + 3x + 5 = 90$$

$$5x + 15 = 90$$

$$\begin{array}{r} -15 \quad -15 \\ \hline \end{array}$$

$$5x = 75$$

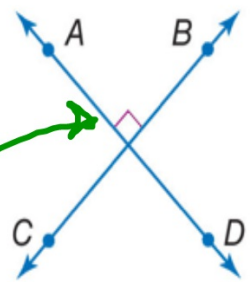
$$x = 15$$



LESSON 1-5 Angle Relationships

KeyConcept Perpendicular Lines

- Perpendicular lines intersect to form four right angles. \perp \leftrightarrow \updownarrow \sphericalangle 's
- Perpendicular lines intersect to form congruent adjacent angles. \perp \leftrightarrow \cong \sphericalangle 's
- Segments and rays can be perpendicular to lines or other line segments and rays. $\overline{}$ \leftrightarrow \perp \leftrightarrow $\overline{}$ \sphericalangle 's
- The right angle symbol in the figure indicates that the lines are perpendicular. \sphericalangle \perp



Symbol \perp is read *is perpendicular to*.

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

EXAMPLE 4**Perpendicular Lines**

ALGEBRA Find x and y so that KO and HM are perpendicular.

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

$$12x + 6 = 90$$

$$\quad -6 \quad -6$$

$$12x = 84$$

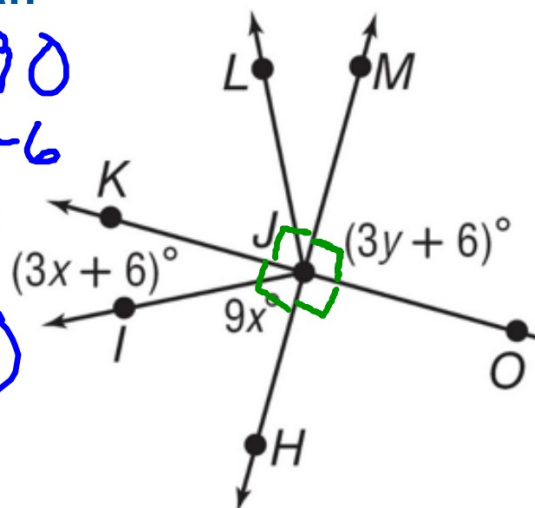
$$x = 7$$

$$3y + 6 = 90$$

$$\quad -6 \quad -6$$

$$3y = 84$$

$$y = 28$$



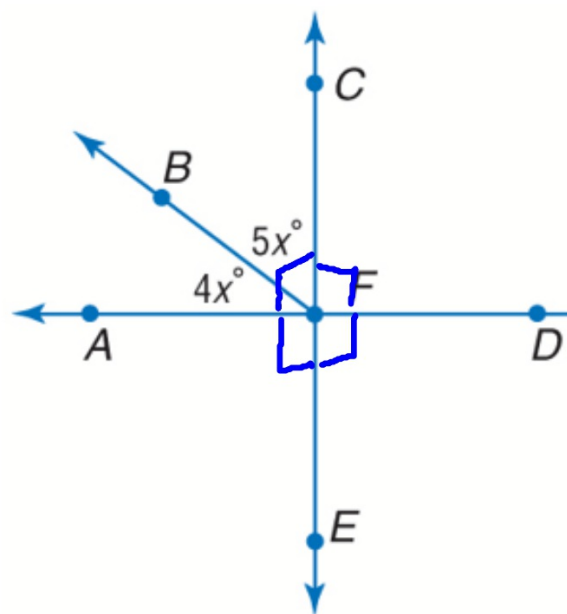
EXAMPLE 5

ALGEBRA Find x so that \overrightarrow{AD} and \overrightarrow{CE} are perpendicular.

$$4x + 5x = 90$$

$$9x = 90$$

$$x = 10$$



Complete Skills Practice 1-5
problem #'s 1 - 13 all.

Complete Practice 1-5
problem #'s 1 - 12 all.

Assignment

Complete Practice 1-5
problem #'s 1 - 12 all.

