

1-5 Angle Relationships

- You measured and classified angles.
(Lesson 1-4)

- **1** Identify and use special pairs of angles.

- 2** Identify perpendicular lines.

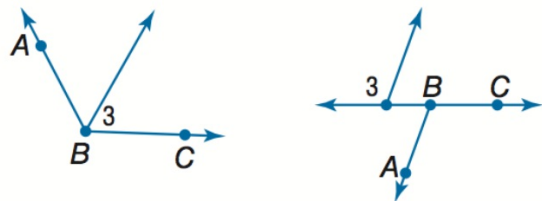
Adjacent angles

are two angles next to each other that share a side.

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

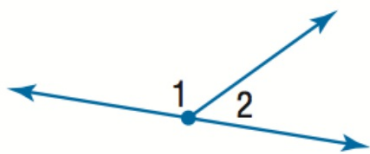


Nonexamples $\angle 3$ and $\angle ABC$ are nonadjacent angles

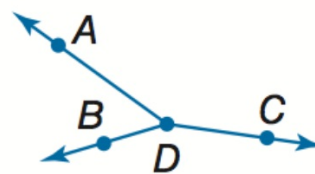


A **Linear Pair** is a pair of adjacent angles that together make a line.

Example $\angle 1$ and $\angle 2$



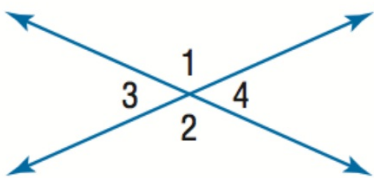
Nonexample $\angle ADB$ and $\angle ADC$



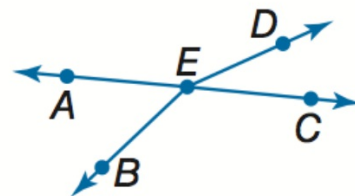
Vertical angles

are two angles directly across from each other formed by intersecting lines

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



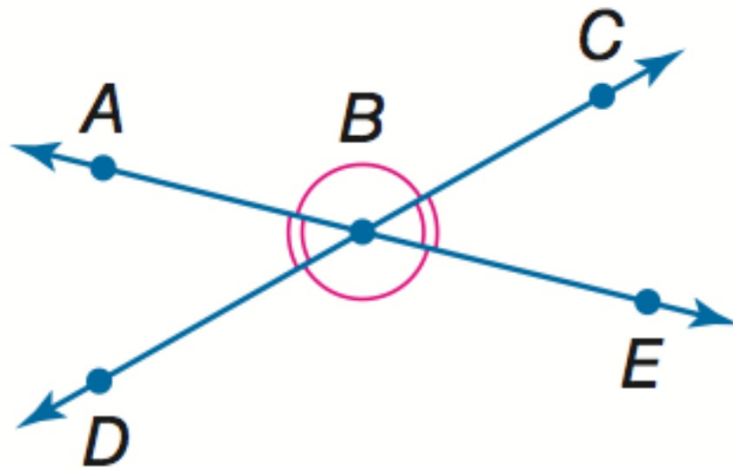
Nonexample $\angle AEB$ and $\angle DEC$



Of note: Vertical angles are congruent. Always.

Examples $\angle ABC \cong \angle DBE$

$\angle ABD \cong \angle CBE$



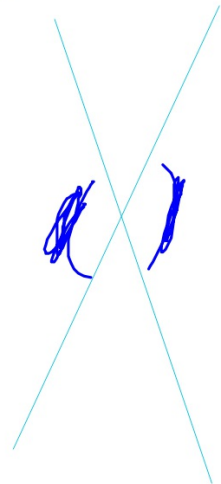
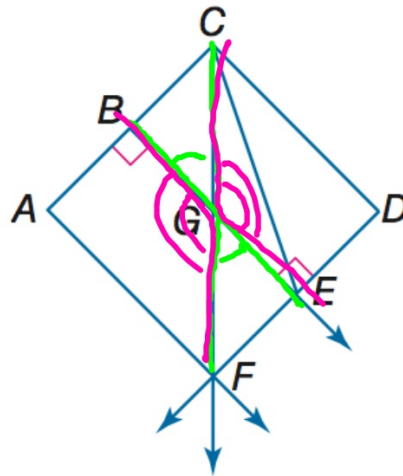
Geometry BELL WORK

Name an angle pair that satisfies each condition.

1. two acute vertical angles
2. two obtuse vertical angles

① $\angle BGC$
 $\angle FGE$

② $\angle BGF$
 $\angle CGE$



1-5 Angle Relationships

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(Lesson 1-4)

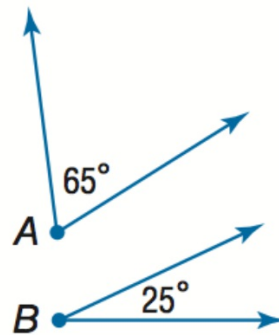
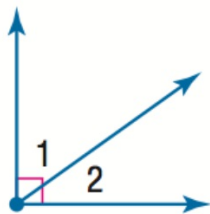
- **1** Identify and use special pairs of angles.

- 2** Identify perpendicular lines.

Pass forward the 1.4 assignment.

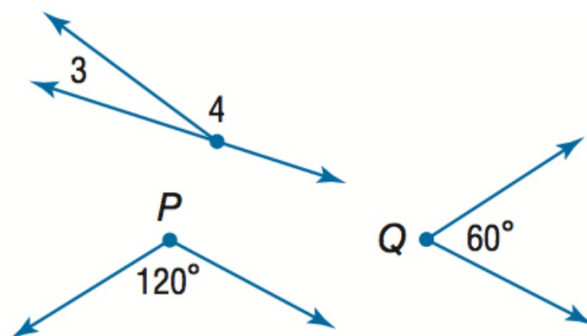
Complementary angles are two angles with measures that have a sum of 90

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



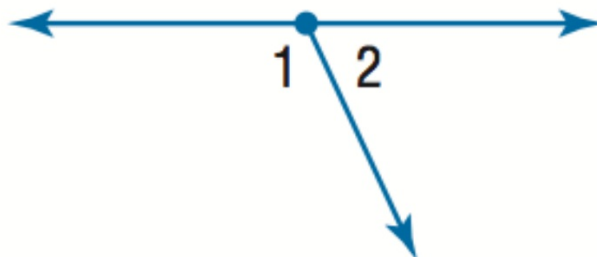
Supplementary angles are two angles with measures that have a sum of 180

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

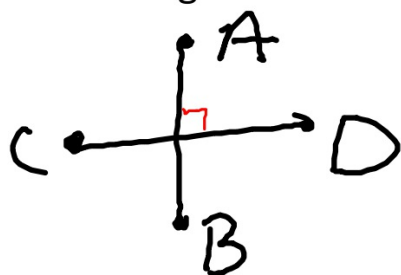


Of note: The angles in a linear pair are supplementary. Always.

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



Line segments that form right angles are **perpendicular**.



$\overline{AB} \perp \overline{CD}$

perpendicular to

90°
right angle
perpendicular



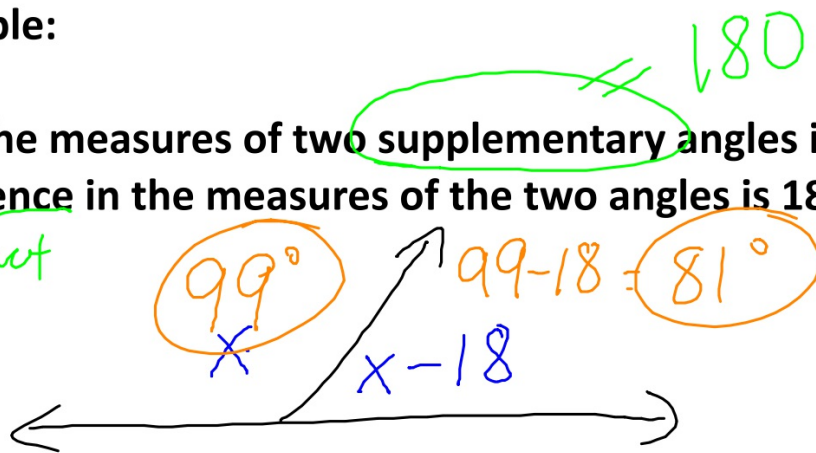
complimentary

} mean 90°

Example:

Find the measures of two supplementary angles if the difference in the measures of the two angles is 18.

subtract



$$x + x - 18 = 180$$

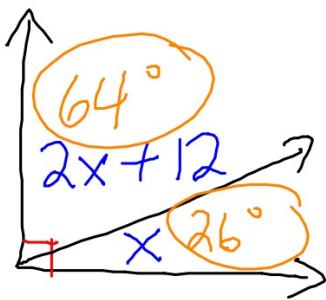
$$\begin{array}{r} 2x - 18 = 180 \\ +18 \quad +18 \\ \hline \end{array}$$

$$\begin{array}{r} 2x = 198 \\ \hline \end{array}$$

$$x = 99$$

Example:

Find the measures of two complementary angles if the measure of the larger angle is 12 more than twice the measure of the smaller angle.



$$2x + 12 + x = 90$$

$$3x + 12 = 90$$
$$\begin{array}{r} -12 \\ -12 \end{array}$$

$$\frac{3x}{3} = \frac{78}{3}$$
$$x = 26$$

Pull out a piece of paper.
Put your name, period, and today's date on it.
Then title it 1.5 and write the assignment on it.

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