1-5 Angle Relationships

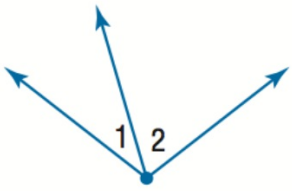
- You measured and classified angles. (Lesson 1-4)

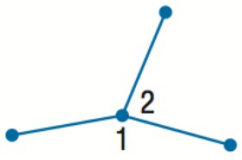
- 1 Identify and use special pairs of angles.
- 2 Identify perpendicular lines.

Adjacent angles

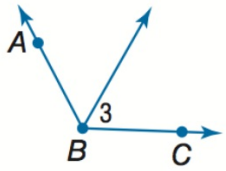
are two angles next to each other that share a side.

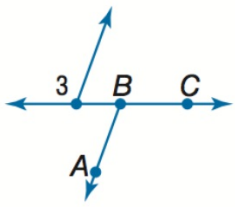
Examples $\angle 1$ and $\angle 2$ are adjacent angles.





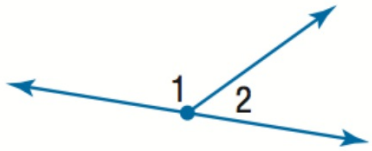
Nonexamples $\angle 3$ and $\angle ABC$ are nonadjacent angles



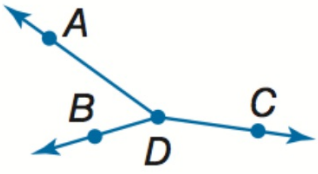


A **Linear Pair** is a pair of adjacent angles that together make a line.

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



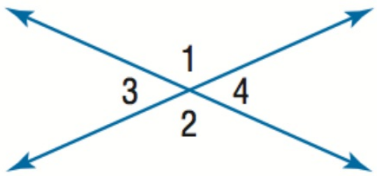
Nonexample $\angle ADB$ and $\angle ADC$



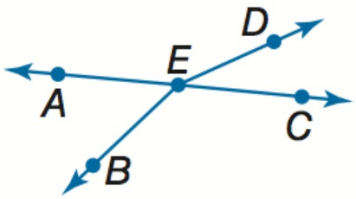
Vertical angles

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

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

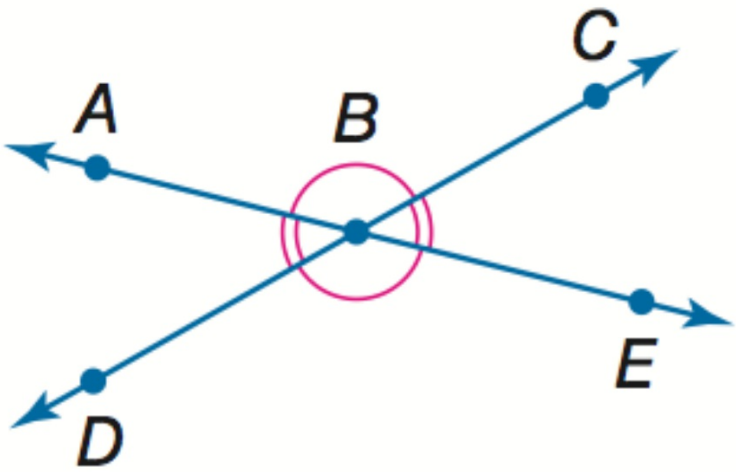


Nonexample $\angle AEB$ and $\angle DEC$



Of note: Vertical angles are congruent. Always.

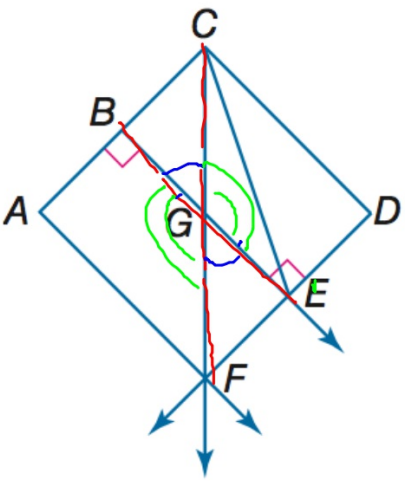
Examples $\angle ABC \cong \angle DBE$ $\angle ABD \cong \angle CBE$

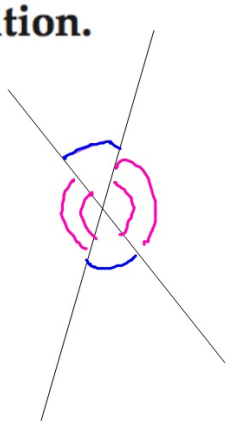


Geometry BELL WORK

Name an angle pair that satisfies each condition.

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





① ∠BGC
∠FGE

② ∠CGE
∠BGF

1-5 Angle Relationships

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

- 1 Identify and use special pairs of angles.
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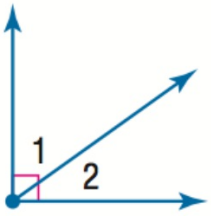
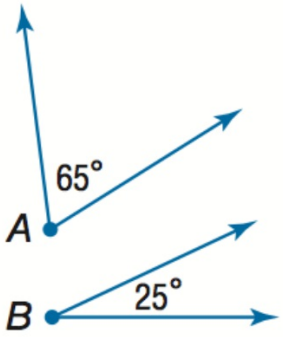
Pass forward the 1.4 assignment.

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

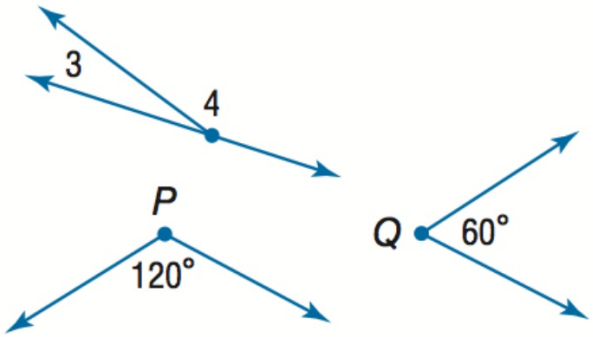
Examples $\angle 1$ and $\angle 2$ are complementary.
$\angle A$ is complementary to $\angle B$.





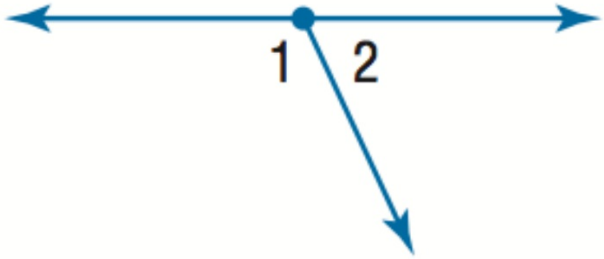
Supplementary angles are two angles with measures that have a sum of 180

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.

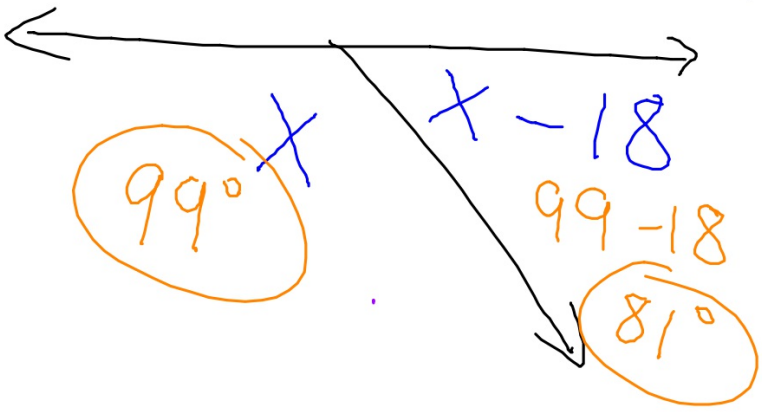
Example $m\angle 1 + m\angle 2 = 180$



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

Example:

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



$x + x - 18 = 180$

$2x - 18 = 180$

$+18 \quad +18$

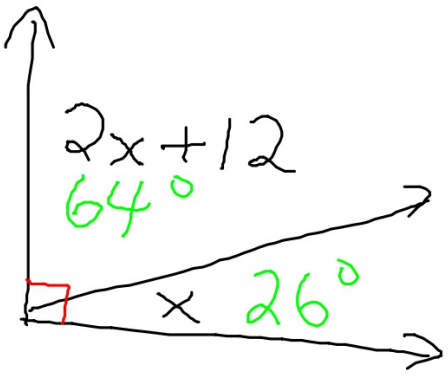
$\frac{2x}{2} = \frac{198}{2}$

$x = 99$

Example:

add to 90°

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.



$2x+12+x=90$

$3x+12=90$

$-12 \quad -12$

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

$x=26$

Name 8/24
Per 1

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