

Pop Quiz.

Get out a scrap sheet of paper. Everything else goes under your desk.

- 1. *Describe the segment addition postulate.***
- 2. *Define an angle.***
- 3. *Describe the angle addition postulate.***

Bellwork

08/25/2011

Classify each angle as acute, obtuse, right, or straight.

1. $m \angle A = 90^\circ$ right
2. $m \angle B = 62^\circ$ acute
3. $m \angle C = 119^\circ$ obtuse

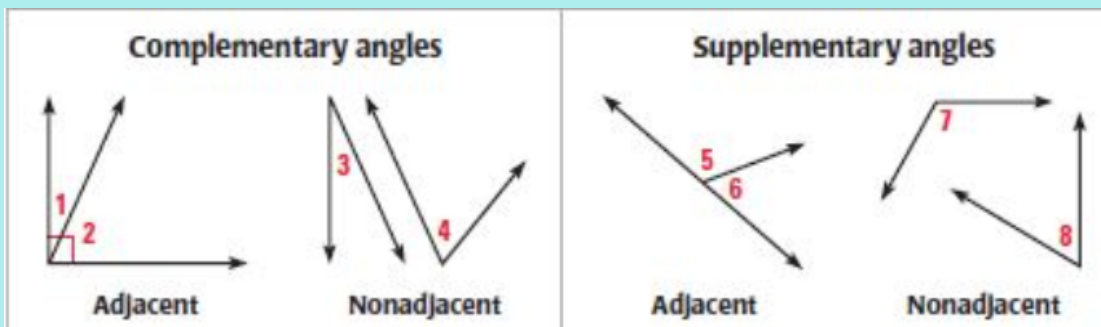
Geometry

1.5 Describe Angle Pair Relationships

Standard(s): 3,8

Vocabulary:

1. **Complementary Angles:** The sum of two angles is 90° .
2. **Supplementary Angles:** The sum of the measures of two angles is 180° .
3. **Adjacent Angles:** Two angles that share a common vertex and side, but have no common interior points.



4. **Linear Pair:** Two adjacent angles that form a straight line.
5. **Vertical Angles:** Two angles that form two pairs of opposite rays.



Find Measures of a Complement and a Supplement

Given that $\angle 1$ is a complement of $\angle 2$ and $m \angle 1 = 17^\circ$, find $m \angle 2$.

$$\begin{aligned} \angle 1 + \angle 2 &= 90^\circ \\ 17^\circ + m \angle 2 &= 90^\circ \\ -17 & \quad -17 \\ m \angle 2 &= 73^\circ \end{aligned}$$

Given that $\angle 3$ is a supplement of $\angle 4$ and $m \angle 3 = 119^\circ$, find $m \angle 4$.

$$\begin{aligned} m \angle 3 + m \angle 4 &= 180 \\ 119^\circ + m \angle 4 &= 180 \\ -119 & \quad -119 \\ m \angle 4 &= 61^\circ \end{aligned}$$

A and B are supplementary. Find $m \angle A$ and $m \angle B$.

$$m \angle A = (7x - 3)^\circ \quad 158^\circ$$

$$m \angle B = (x - 1)^\circ \quad 22^\circ$$

$$m \angle A + m \angle B = 180^\circ$$

$$\underline{7x - 3} + \underline{x - 1} = 180$$

$$8x - 4 = 180$$

$$+4 +4$$

$$8x = 184$$

$$x = 23^\circ$$

A and B are complementary. Find $m \angle A$ and $m \angle B$.

$$m \angle A = (4x - 2)^\circ$$

$$m \angle B = (11x + 17)^\circ$$

Find Measures of a Complement and a Supplement

1 and 2 are complementary angles. 2 and 3 are supplementary angles. Given the measure of 1, find the measure of 2 and 3.

$$m \angle 1 = 52^\circ$$

$$52 + m \angle 2 = 90$$

$$\underline{m \angle 2 = 38^\circ}$$

$$38 + m \angle 3 = 180$$

$$m \angle 3 = 142^\circ$$

$$m \angle 1 = 76^\circ$$

$$76 + m \angle 2 = 90$$

$$\underline{m \angle 2 = 14^\circ}$$

$$14 + m \angle 3 = 180$$

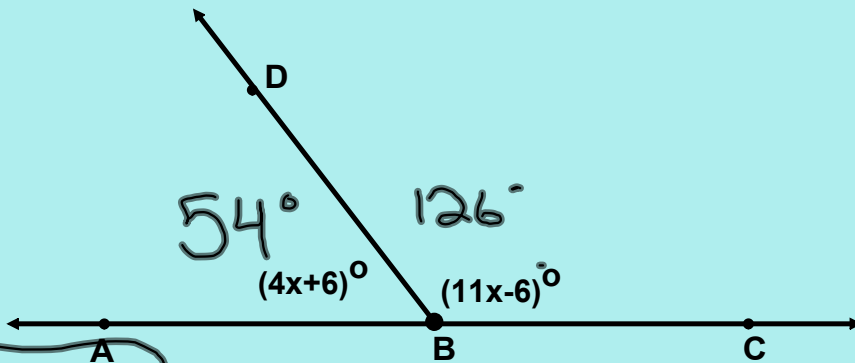
$$\underline{m \angle 3 = 166^\circ}$$

$$m \angle 1 + m \angle 2 = 90^\circ$$

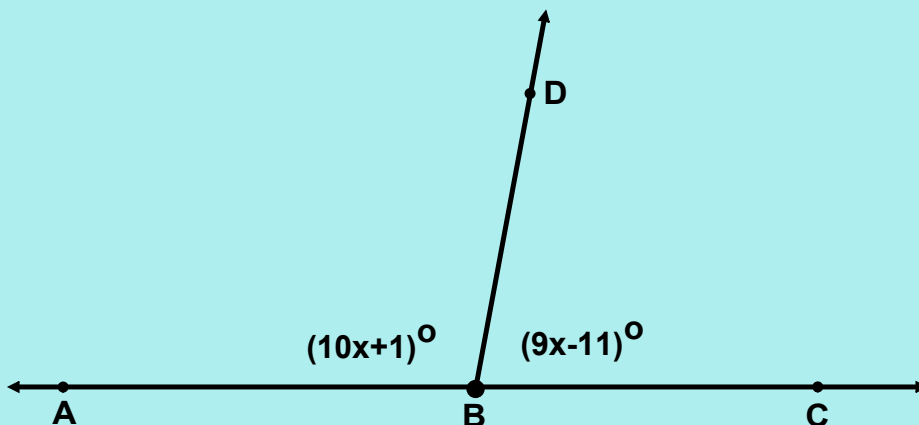
$$m \angle 2 + m \angle 3 = 180^\circ$$

Find Angle Measures

Find $m \angle ABD$ and $m \angle DBC$.

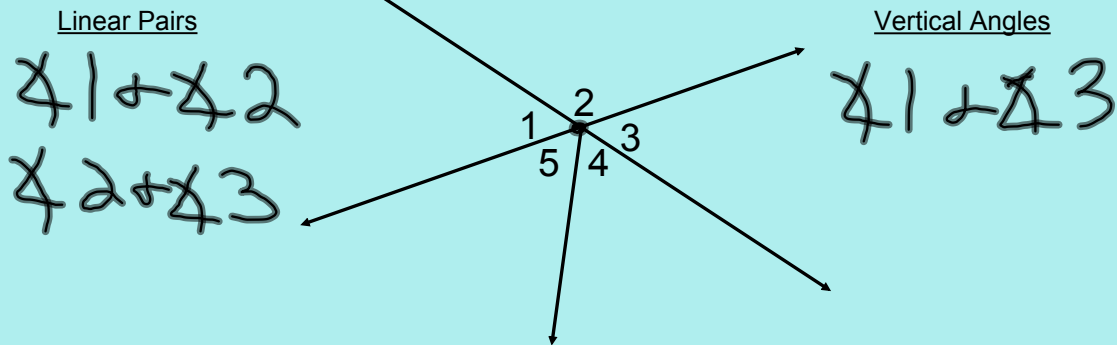


$$\begin{aligned}
 m\angle ABD &= 54^\circ \\
 m\angle DBC &= 126^\circ \\
 4x+6 + 11x-6 &= 180 \\
 15x &= 180 \\
 x &= 12
 \end{aligned}$$



Identify Angle Pairs

Identify all of the linear pairs and all of the vertical angles in the figure.



Find Angle Measures in a Linear Pair

Two angles form a linear pair. The measure of one angle is 3 times the measure of the other angle. Find the measure of each angle.

$$\angle 1 = x$$

$$\angle 2 = 3x$$

$$m\angle 1 = 45^\circ$$

$$m\angle 2 = 135^\circ$$

$$1x + 3x = 180$$

$$4x = 180$$

$$x = 45^\circ$$

Finding Missing Values

Find the values of x and y.

$$20y + 19 = 139$$

$$20y = 120$$

$$y = 6$$

$$(6x - 11)^\circ$$

$$139^\circ$$

$$(20y + 19)^\circ$$

$$(2x - 9)^\circ$$

$$41^\circ$$

$$\underline{6x - 11} + \underline{2x - 9} = 180$$

$$8x - 20 = 180$$

$$8x = 200$$

$$x = 25$$

Homework Assignment

Worksheet 1.5B

