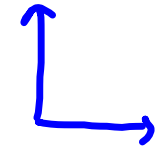
2.3 Complementary and Supplementary Angles

Objective: Find measures of complementary and supplementary angles.

Two angles are <u>complementary angles</u> if the sum of their measures is 90 degrees.

Each angle is the <u>complement</u> of the other.



corner

Two angles are <u>supplementary angles</u> if the sum of their measures is 180 degrees.

Each angle is the <u>supplement</u> of the other.

Straight

Example 1: Checkpoint at the bottom of page 67

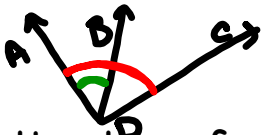
1. $30+39$
69
neither

2. $41+49$
90
complementary

3. $148+32$
180
supplementary

Two angles are <u>adjacent angles</u> if they share a common vertex and side, but have no common interior points.

∠ADB and ∠BDC adjacent



∠ADB and ∠ ADC not adjacent

Example 2: Example 2 towards the top of pg. 68

a. nonadjacent

b. adjacent

c. nonadjacent

Example 3: Checkpoint at the bottom of pg. 68

4. $m\angle B + 79^\circ = 90^\circ$
$\quad -79 \quad -79$

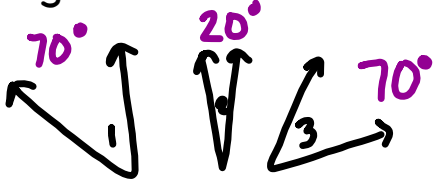
$m\angle B = 11^\circ$

5. $m\angle H + 115^\circ = 180^\circ$
$\quad -115 \quad -115$

$m\angle H = 65^\circ$

A theorem is a true statement that follows from other true statements.

Congruent Complements Theorem: If two angles are complementary to the same angle, then they are congruent.



$\angle 1 + \angle 2 = 90°$ $\quad 70+20=90$

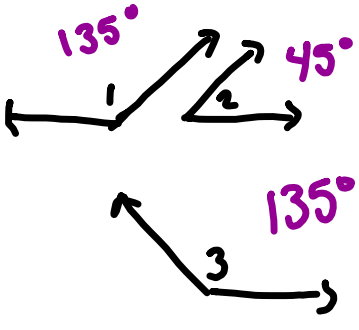
$\angle 3 + \angle 2 = 90°$ $\quad 70+20=90$

$\angle 1 \cong \angle 3$

Congruent Supplements Theorem: If two angles are supplementary to the same angle, then they are congruent.

$\angle 1 + \angle 2 = 180°$ $\quad 135+45=180$

$\angle 3 + \angle 2 = 180°$ $\quad 135+45=180$



$\angle 1 \cong \angle 3$

Example 4: Checkpoint at the bottom of page 69.

$m\angle 10 + m\angle 11 = 90°$

$m\angle 11 + m\angle 12 = 90°$

$\angle 10 \cong \angle 12$

Congruent Complements Thm.

October 2, 2017

Name

2.3

pg. 70-73 #1-14

16-24 even

25-32

35-37

40-42

44

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