Vocabulary Sheet for Lesson 2-4

Definition	Diagram/ Notes
<u>Complementary angles:</u> Two angles whose measures add to = 90° Each angle is called a complement of the other.	
<u>Supplementary angles:</u> Two angles whose measures add to = 180° Each angle is called a supplement of the other	
Example1: Find the measures of a complement and supplement of < A m< A = 89° m< A = y°	comp = 90 - 89 = 1° Supp = 180 - 89 = 91° comp = (90 - y)° Supp = (180 - y)°
Example 2: If <A and <B are supplementary, find the value of x. m< A = x + 16, m< B = 2x – 16 What would the value of x be if <A and <B were complementary?	x + 16 + 2x - 16 = 180 3x = 180 x = 60° x + 16 + 2x - 16 = 90 3x = 90 x = 30°
Example 3: The measure of a supplement of an angle is 12 more than twice the measure of the angle. Find the measure of the angle and its supplement	180 - x = 12 + 2x 180 = 12 + 3x 168 = 3x x = 56° Supp = 180 - 56 = 124°

Example 4:

A supplement of an angle is six times as large as the complement of the angle. Find the measures of the angle, its supplement, and its complement

$180 - x = 6(90 - x)$

$180 - x = 540 - 6x$

$5x = 360$

$x = 72°$

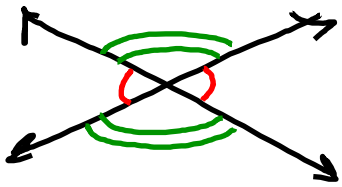
Supp: $180 - 72 = 108°$

Comp: $90 - 72 = 18°$

Vertical angles:

Two angles such that the sides of one angle are opposite rays to the sides from the other angle.

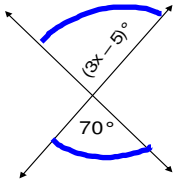
Theorem 2-3: Vertical angles are congruent



Example 5

- Solve for x

a)

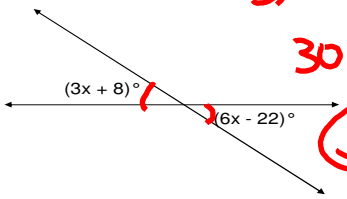


$3x - 5 = 70$

$3x = 75$

$x = 25$

b)



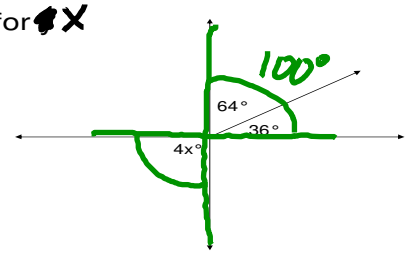
$3x + 8 = 6x - 22$

$30 = 3x$

$x = 10$

Example 6

- Solve for x

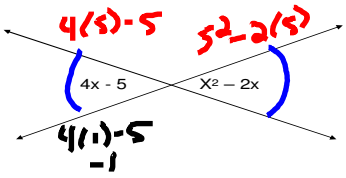


$4x = 100$

$x = 25$

Example 7

- Solve for x



$4x - 5 = x^2 - 2x$

$-4x \quad +5 \quad -4x \quad +5$

$0 = x^2 - 6x + 5$ ← add ← mult.

$0 = (x-1)(x-5)$

$x-1=0$ $\quad$ $x-5=0$

~~$x=1$~~ $\quad$ $x=5$