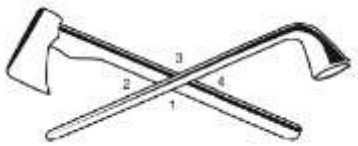
1.4 Day 1 Practice
Vertical Angles and Linear Pair Angles

Name: Key
Date: _____

Identify vertical angles and linear pair angles.
Find measures of vertical angles and linear pair angles.

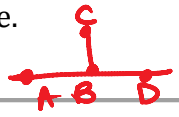
1) In 2004, several nickels were minted to commemorate the Louisiana Purchase and Lewis and Clark's expedition into the American West. One nickel shows a pipe and a hatchet crossed to symbolize peace between the American government and Native American tribes.



a) Name a pair of vertical angles. $\angle 2, \angle 4$ and $\angle 1, \angle 3$

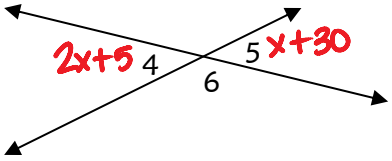
b) Name a linear pair of angles. $\angle 2, \angle 3$ & more

c) ABC and CBD form a linear pair and have equal measures. Tell if ABC is acute, right, or obtuse.



right

2)

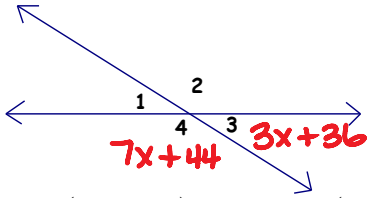


Given: $m\angle 4 = (2x + 5)°, m\angle 5 = (x + 30)°$

Find: $m\angle 6$

$2x+5 = x+30$
$x = 25$
$\angle 5 = 25+30 = 55$
$\angle 6 = 180-55 = \boxed{125}$

3)

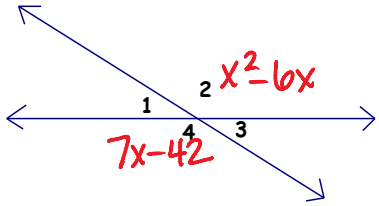


Given: $m\angle 4 = (7x + 44)°$, $m\angle 3 = (3x + 36)°$

Find: $m\angle 1$

$7x+44+3x+36 = 180$
$10x+80 = 180$
$10x = 100$
$x = 10$
$\angle 3 = 3(10)+36 = 66$
$\boxed{\angle 1 = 66}$

4)



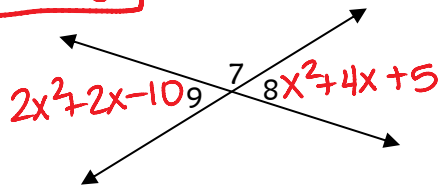
Given: $m\angle 2 = (x^2 - 6x)°$
$m\angle 4 = (7x - 42)°$

Find: $m\angle 2$

$x^2-6x = 7x-42$
$x^2-6x-7x+42 = 0$
$x^2-13x+42 = 0$
$(x-6)(x-7) = 0$
$x = 6 \quad x = 7$

$\angle 2 = (6)^2-6(6) = 0$
$\angle 2 = (7)^2-6(7) = 7$

5)



Given: $m\angle 8 = (x^2 + 4x + 5)°$,
$m\angle 9 = (2x^2 + 2x - 10)°$

Find: $m\angle 9$

$x^2+4x+5 = 2x^2+2x-10$
$0 = x^2-2x-15$
$0 = (x-5)(x+3)$
$x = 5 \quad x = -3$

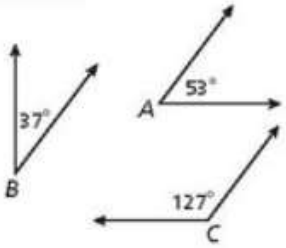
$\angle 9 = \angle 8$
$(-3)^2+4(-3)+5$
$\boxed{2°}$
OR $(5)^2+4(5)+5$
$\boxed{50°}$

STOP

1.4 Day 1 Notes

Complementary and Supplementary Angles

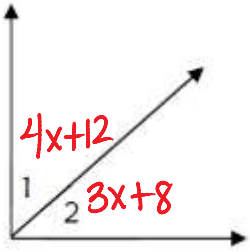
Identify complementary and supplementary angles.
Find measures of complementary and supplementary angles.



Example 1:

Given: $\angle 1$ and $\angle 2$ are complementary
$m\angle 1 = (4x + 12)°$
$m\angle 2 = (3x + 8)°$

Find: x, $m\angle 1$, and $m\angle 2$



$4x+12+3x+8=90$
$7x+20=90$
$7x=70$
$x=10$

$\angle 1 = 4(10)+12$
$= 52°$

$\angle 2 = 3(10)+8$
$= 38°$

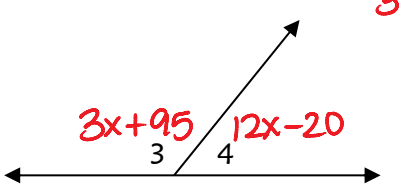
Example 2:

Given: $m\angle 3 = (3x + 95)°$
$m\angle 4 = (12x - 20)°$

*Are $\angle 3$ and $\angle 4$ supplementary? Explain.

yes, because they form a straight $\angle$

Find: x, $m\angle 3$, and $m\angle 4$



$3x+95+12x-20=180$
$15x+75=180$
$15x=105$
$x=7$

$m\angle 3 = 3(7)+95$
$= 116$

$\angle 4 = 180-116 = 64$

Example 3:

Given: $m\angle 5 = 26.8°$

Find: the complement of $\angle 5$

$90 - 26.8 = 63.2$

the supplement of $\angle 5$

$180 - 26.8 = 153.2$

Example 4:

Given: $m\angle 6 = (7x - 12)°$

Find: the complement of $\angle 6$

$90-(7x-12)$
$90-7x+12$
$102-7x$

the supplement of $\angle 6$

$180-(7x-12)$
$180-7x+12$
$192-7x$

If the measure of angle is x°, then what is the measure of its complement? Is supplement?

$90-x$ $180-x$