

G E O M E T R Y

Working With Linear Pairs

Name: Key

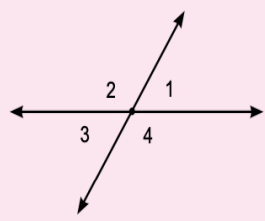
Write the correct answer each question below.

Each angle in Figure 1 is numbered. What makes a linear pair with:

A) $\angle 1$ $\angle 2$ or $\angle 4$

B) $\angle 4$ $\angle 1$ or $\angle 3$

Figure 1



In Figure 2 what angles make a linear pair with:

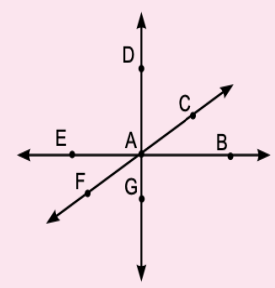
A) $\angle BAC$ $\angle BAF$ or $\angle CAE$

B) $\angle DAE$ $\angle DAB$ or $\angle EAG$

C) $\angle GAF$ $\angle FAD$ or $\angle GAB$

D) $\angle BAD$ $\angle BAG$ or $\angle DAE$

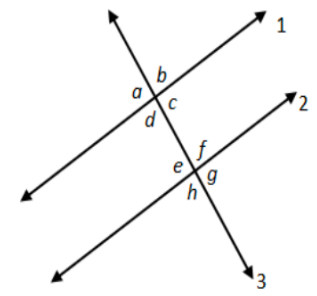
Figure 2



Special Angle Pairs with Parallel Lines

Line 1 is parallel to line 2. List all the angle pairs that fall into each category.

Corresponding	Alternate Interior
$\angle a$ and $\angle e$ $\angle b$ and $\angle f$ $\angle d$ and $\angle h$ $\angle c$ and $\angle g$	$\angle d$ and $\angle f$ $\angle c$ and $\angle e$
Alternate Exterior	Consecutive Interior
$\angle a$ and $\angle g$ $\angle b$ and $\angle h$	$\angle d$ and $\angle e$ $\angle c$ and $\angle f$



Line *a* is parallel to line *b*. Tell if each statement is true (T) or false (F).

$\angle 1$ and $\angle 10$ are alternate exterior angles. F

$\angle 8$ and $\angle 11$ are alternate interior angles. T

$\angle 2$ and $\angle 10$ are corresponding angles. T

$\angle 2$ and $\angle 7$ are alternate interior angles. F

$\angle 7$ and $\angle 15$ are corresponding angles. T

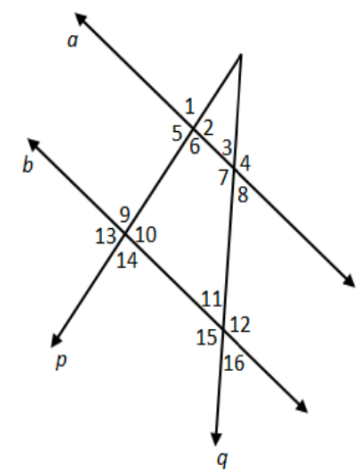
$\angle 5$ and $\angle 10$ are alternate interior angles. T

$\angle 7$ and $\angle 11$ are consecutive interior angles. T

$\angle 10$ and $\angle 14$ are consecutive interior angles. F

$\angle 1$ and $\angle 3$ are corresponding angles. F

$\angle 4$ and $\angle 15$ are alternate exterior angles. T

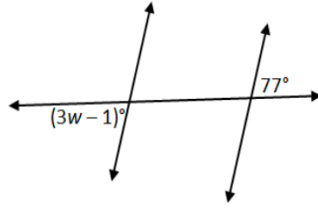


Parallel Lines: Finding the Unknown

Each diagram is formed by two parallel lines and a transversal. Write the equation you can use to find the value of the variable. Then find the value of the variable.

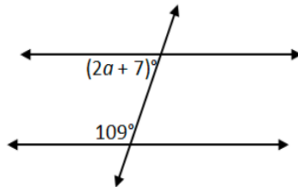
Equation $3w - 1 = 77$

$w = 26$



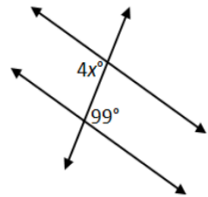
Equation $2a + 7 + 109 = 180$

$a = 32$



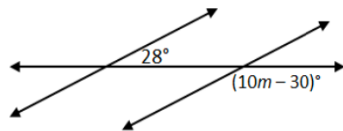
Equation $4x = 99$

$x = 24.75$



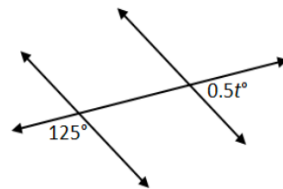
Equation $28 + 10m - 30 = 180$

$m = 18.2$



Equation $125 + 0.5t = 180$

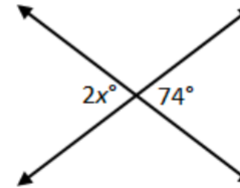
$t = 110$



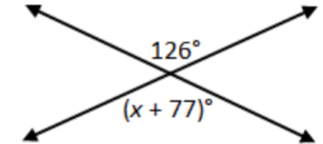
Writing Equations for Vertical Angles

Find the values of x and y .

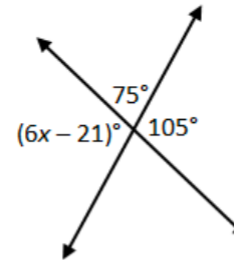
1. $x = 37$



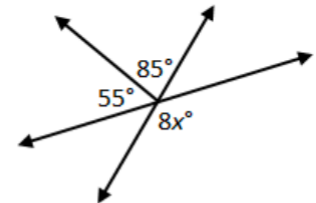
2. $x = 49$



3. $x = 21$

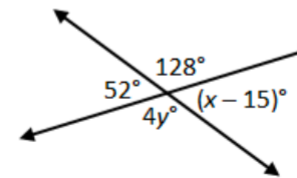


4. $x = 17.5$



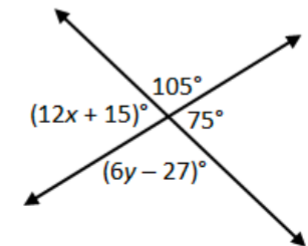
5. $x = 67$

$y = 32$



6. $x = 5$

$y = 22$



Using Angle Relationships

Find the values of the variables.

$$a = \underline{123} \quad b = \underline{16} \quad c = \underline{40}$$

$$d = \underline{55} \quad e = \underline{46} \quad f = \underline{107}$$

$$g = \underline{16} \quad h = \underline{3} \quad j = \underline{18} \quad k = \underline{36}$$

