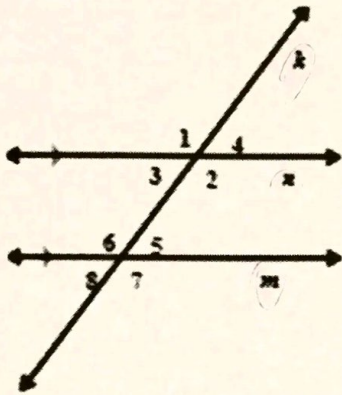


# Notes 7-2

Give an example of each term listed below.



Transversal:

*k*

Alternate Interior Angles:

$\angle 2 \hat{=} \angle 6$   
 $\angle 3 \hat{=} \angle 7$

Vertical Angles:

$\angle 1 \hat{=} \angle 2$      $\angle 5 \hat{=} \angle 8$   
 $\angle 3 \hat{=} \angle 4$      $\angle 6 \hat{=} \angle 7$

Alternate Exterior Angles:

$\angle 1 \hat{=} \angle 7$   
 $\angle 4 \hat{=} \angle 8$

Corresponding Angles:

$\angle 3 \hat{=} \angle 8$      $\angle 4 \hat{=} \angle 6$   
 $\angle 2 \hat{=} \angle 7$      $\angle 1 \hat{=} \angle 5$

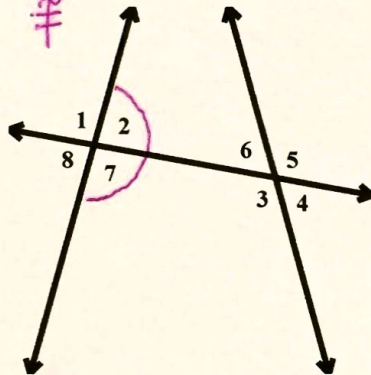
Ex. 1 Classify each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, *vertical*, linear pair or *neither*.

1)  $\angle 1$  &  $\angle 4$

*Alt ext*  $\neq$

2)  $\angle 2$  &  $\angle 7$

*supp linear pair*

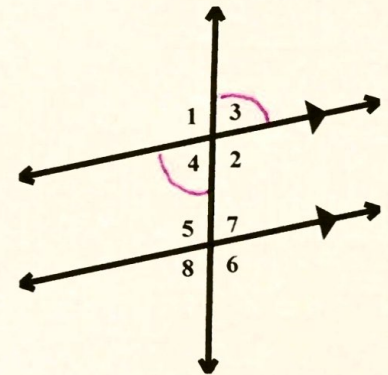


3)  $\angle 3$  &  $\angle 4$

*vert*  $\cong$

4)  $\angle 3$  &  $\angle 7$

*corr*  $\cong$



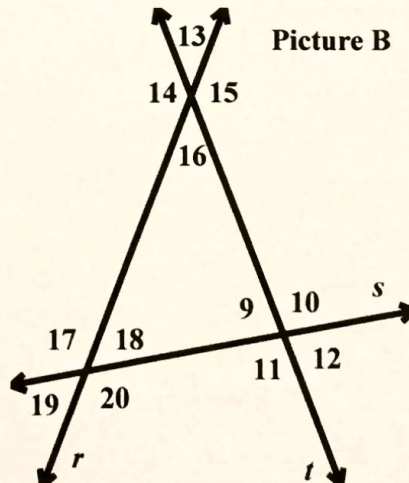
Ex. 2 Classify each pair of angles as *alternate interior*, *alternate exterior*, *corresponding*, *vertical*, or *neither*.

5)  $\angle 18$  &  $\angle 15$

6)  $\angle 10$  &  $\angle 16$

7)  $\angle 19$  &  $\angle 13$

8)  $\angle 17$  &  $\angle 20$



Notes 7-2

Int 2

More Parallel Lines and Transversals

Unit 7

Ex. 3 Find the indicated angle measure. Name the angles AND relationship used. (There may NOT be enough information to find the value.)

The  $m\angle 5 = 68^\circ$ .

a)  $m\angle 6 = 112^\circ$

Supp  $\angle 5$

$$\begin{array}{r} 180 \\ -68 \\ \hline 112 \end{array}$$

Supp = 180

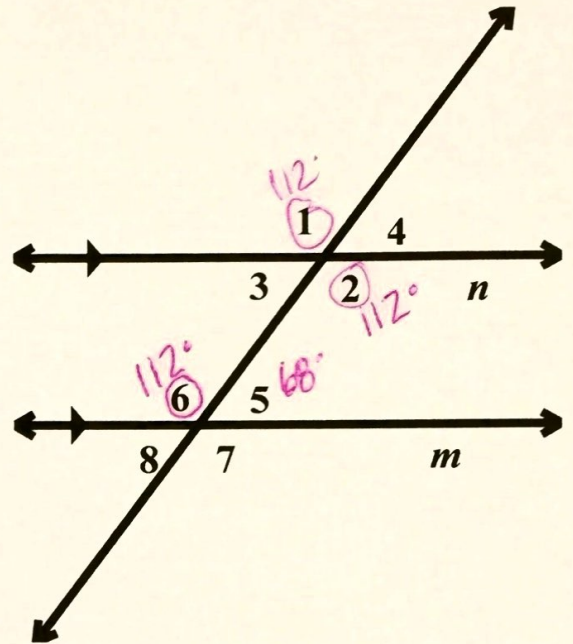
b)  $m\angle 2 = 112^\circ$

Alt int  $\angle 6$

c)  $m\angle 1 = 112^\circ$

vert  $\angle 2$

Corr  $\angle 6$



Ex. 4 Find the indicated angle measure. Name the angles AND relationship used. (There may NOT be enough information to find the value.)

The  $m\angle 3 = 87^\circ$ .

b)  $m\angle 8 = 87^\circ$

Alt ext  $\angle 3$

Alt ext, given angle

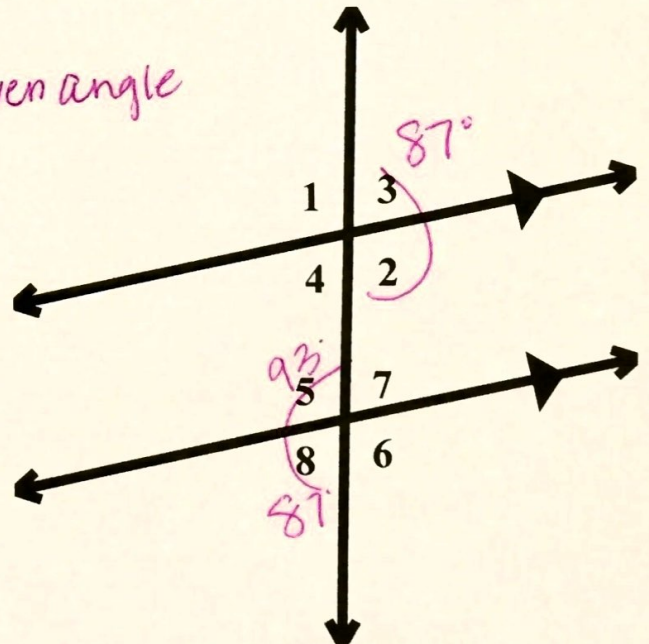
b)  $m\angle 5 = 93^\circ$

Supp  $\angle 8$

c)  $m\angle 2 = 93^\circ$

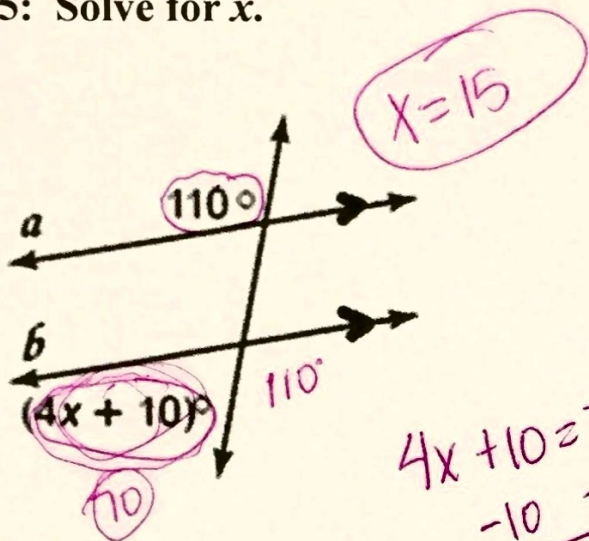
Supp  $\angle 3$

Alt ext  $\angle 5$



Ex. 5: Solve for x.

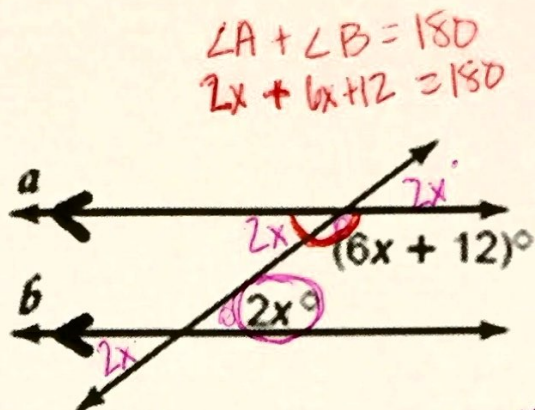
a)



$$4x + 10 = 70$$

$$\begin{array}{r} -10 \\ \hline 4x = 60 \\ \frac{4}{4} \quad \frac{60}{4} \\ x = 15 \end{array}$$

c)

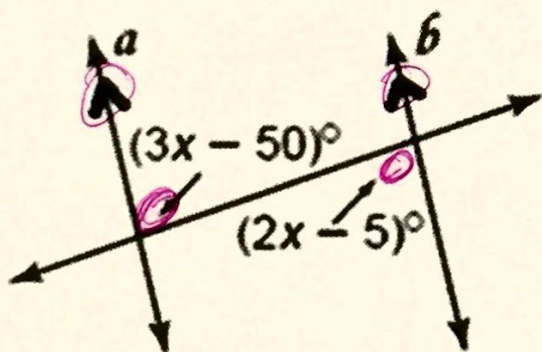


$$2x + 6x + 12 = 180$$

$$8x + 12 = 180$$

$$\begin{array}{r} -12 \\ \hline 8x = 168 \\ \frac{8}{8} \quad \frac{168}{8} \\ x = 21 \end{array}$$

b)



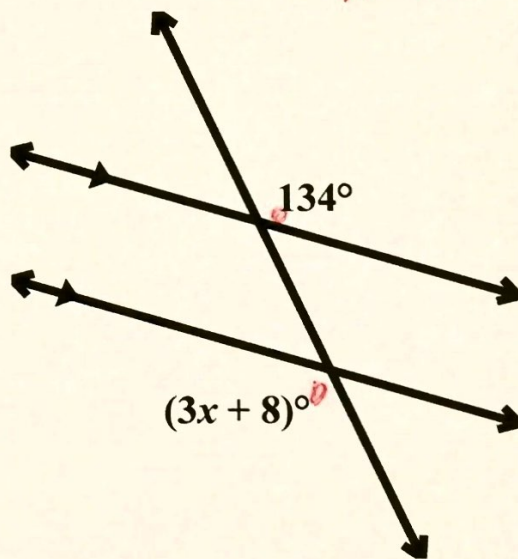
$$3x - 50 = 2x - 5$$

$$\begin{array}{r} -2x \\ \hline x - 50 = -5 \end{array}$$

$$\begin{array}{r} x - 50 = -5 \\ +50 \quad +50 \\ \hline \end{array}$$

$$x = 45$$

d)



$$3x + 8 = 134$$

$$\begin{array}{r} -8 \\ \hline 3x = 126 \end{array}$$

$$\begin{array}{r} 3x = 126 \\ \frac{3}{3} \quad \frac{126}{3} \\ \hline \end{array}$$

$$x = 42$$

## Vocabulary

### Transversal

A line that intersects two or more lines.

Example:  $k$

### Corresponding Angles:

Angles that are in the same position on the two lines in relation to the transversal. When parallel their measures are equal.

Example:  $\angle 1$  &  $\angle 4$

### Alternate Interior Angles:

Interior angles that lie on opposite sides of the transversal. When the lines are parallel, their measure are equal.

Example:  $\angle 3$  &  $\angle 5$      $\angle 2$  &  $\angle 6$

### Alternate Exterior Angles:

Exterior angles that lie on opposite sides of the transversal. When the lines are parallel, their measures are equal.

Example:  $\angle 4$  &  $\angle 8$      $\angle 1$  &  $\angle 7$

**Vertical Angles:** Two angles directly opposite each other when two straight lines cross.

Example:  $\angle 1$  &  $\angle 2$

