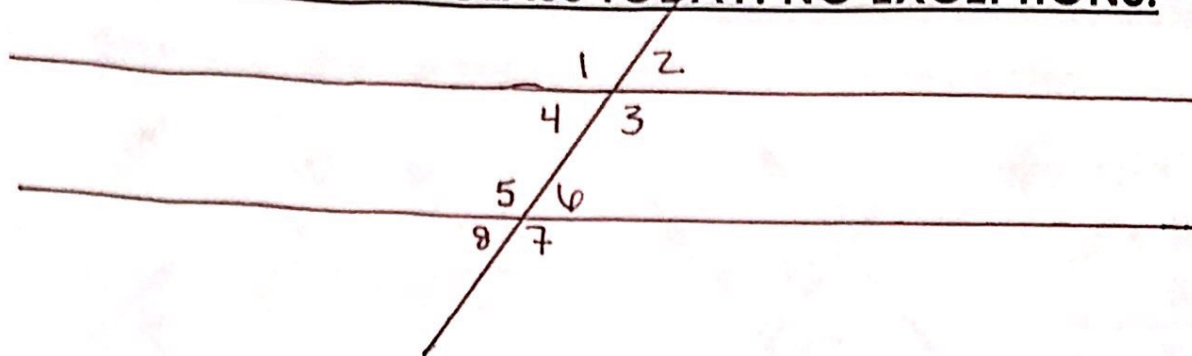


Parallel Lines

Fill in the chart with the notes posted on the board. In the "YOU DO" section, write another example that shows the same relationship.

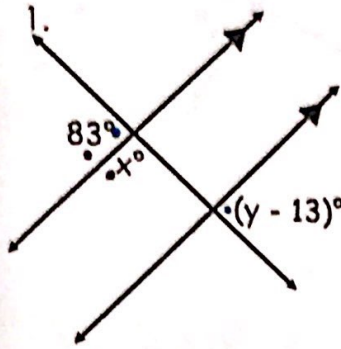
**DUE AT THE END OF CLASS TODAY. NO EXCEPTIONS.**



TYPE	DESCRIPTION	EXAMPLES	YOU DO
VERTICAL (Congruent)	<ul style="list-style-type: none"> <li>• share a vertex</li> <li>• directly across</li> </ul>	$\angle 1 \cong \angle 3$ $\angle 8 \cong \angle 6$	$\angle 2 \cong \angle 4$ $\angle 5 \cong \angle 7$
CORRESPONDING (Congruent)	<ul style="list-style-type: none"> <li>• same position across parallel lines</li> </ul>	$\angle 1 \cong \angle 5$ $\angle 3 \cong \angle 7$	$\angle 4 \cong \angle 8$ $\angle 2 \cong \angle 6$
ALTERNATE INTERIOR (Congruent)	<ul style="list-style-type: none"> <li>• opposite sides of transversal</li> <li>• between //s</li> </ul>	$\angle 4 \cong \angle 6$	$\angle 3 \cong \angle 5$
ALTERNATE EXTERIOR (Congruent)	<ul style="list-style-type: none"> <li>• opposite sides of transversal</li> <li>• outside // lines.</li> </ul>	$\angle 1 \cong \angle 7$	$\angle 2 \cong \angle 8$
CONSECUTIVE INTERIOR (add to $180^\circ$ )	<ul style="list-style-type: none"> <li>• same side of transversal</li> <li>• between // lines</li> </ul>	$m\angle 6 + m\angle 3 = 180^\circ$	$m\angle 4 + m\angle 5 = 180^\circ$
CONSECUTIVE EXTERIOR (add to $180^\circ$ )	<ul style="list-style-type: none"> <li>• same side of transversal</li> <li>• outside // lines</li> </ul>	$m\angle 1 + m\angle 8 = 180^\circ$	$m\angle 2 + m\angle 7 = 180^\circ$

**DUE AT THE END OF CLASS TODAY. NO EXCEPTIONS!**

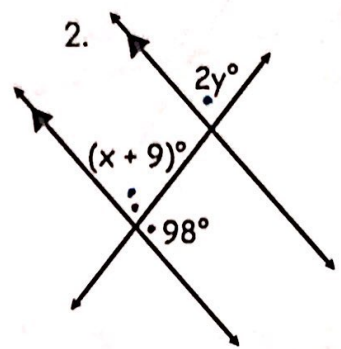
Name the relationship you would use to solve for variable(s). Then solve for each variable.

1. 

$$\begin{array}{r} 83 = y - 13 \\ +13 \quad +13 \\ \hline y = 96 \end{array}$$

$$\begin{array}{r} 83 + x = 180 \\ -83 \quad -83 \\ \hline x = 97 \end{array}$$

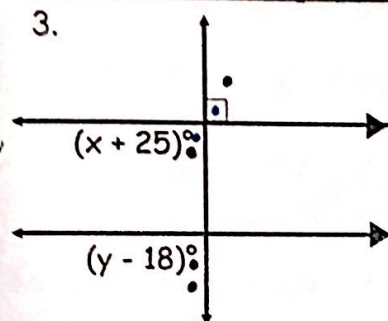
- linear pair (supplementary)
- alternate interior angles

2. 

$$\begin{array}{r} 98 + x + 9 = 180 \\ x + 107 = 180 \\ -107 \quad -107 \\ \hline x = 73 \end{array}$$

$$\frac{82}{2} = \frac{2y}{2} \quad y = 41$$

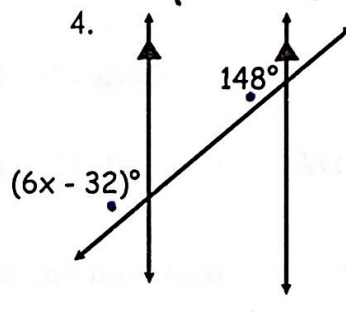
- corresponding angles are congruent
- linear pairs are supplementary

3. 

$$\begin{array}{r} x + 25 = 90 \\ -25 \quad -25 \\ \hline x = 65 \end{array}$$

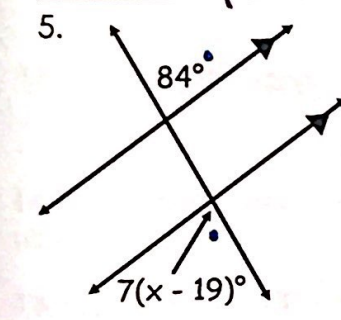
$$\begin{array}{r} y - 18 = 90 \\ +18 \quad +18 \\ \hline y = 108 \end{array}$$

- alt. exterior  $\angle$ 's are  $\cong$
- vertical angles are  $\cong$
- corresponding angles  $\cong$

4. 

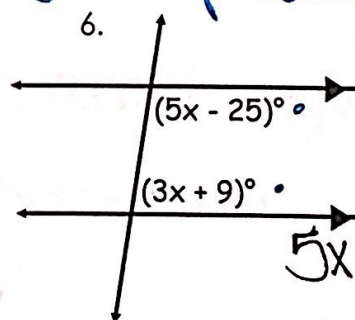
$$\begin{array}{r} 6x - 32 = 148 \\ +32 \quad +32 \\ \hline 6x = 180 \\ \frac{6x}{6} = \frac{180}{6} \\ x = 30 \end{array}$$

- corresponding angles are  $\cong$

5. 

$$\begin{array}{r} 84 = 7(x - 19) \\ \frac{84}{7} \quad \frac{7}{7} \\ 12 = x - 19 \\ +19 \quad +19 \\ \hline x = 31 \end{array}$$

- Alt. exterior  $\angle$ 's are  $\cong$

6. 

$$\begin{array}{r} 5x - 25 = 3x + 9 \\ 5x - 25 + 3x + 9 = 180 \\ 8x - 16 = 180 \\ +16 \quad +16 \\ 8x = 196 \\ \frac{8x}{8} = \frac{196}{8} \\ x = 24.5 \end{array}$$

- consecutive int.  $\angle$ 's are supplementary

PARALLEL LINES CLASS ASSIGNMENT

7.

$2x - 10 = 80$   
 $2x = 90$   
 $x = 45$

8.

$135 = 3x + 15$   
 $-15 \quad -15$   


---

 $120 = 3x$   
 $\frac{120}{3} = \frac{3x}{3}$   
 $x = 40$

alt. interior  $\angle$ 's are  $\cong$

corresponding  $\angle$ 's are  $\cong$

In the figure,  $m\angle 2 = 70$ . Find the measure of each angle.

1.  $\angle 3 = 70^\circ$  vertical

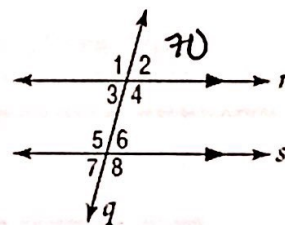
2.  $\angle 5 = 110^\circ$

3.  $\angle 8 = 110^\circ$  con. ext.

4.  $\angle 1 = 110^\circ$  linear pair

5.  $\angle 4 = 110^\circ$  linear pair

6.  $\angle 6 = 70^\circ$  corresponding



In the figure,  $m\angle 9 = 80$  and  $m\angle 5 = 68$ . Find the measure of each angle.

7.  $\angle 12 = 100^\circ$  linear pair

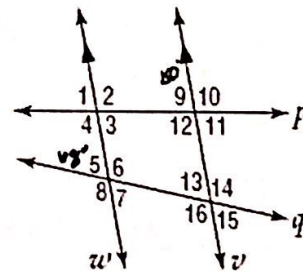
8.  $\angle 1 = 80^\circ$  corresponding

9.  $\angle 4 = 100^\circ$

10.  $\angle 3 = 80^\circ$  alt. int.

11.  $\angle 7 = 68^\circ$  vertical

12.  $\angle 16 = 112^\circ$  con. int. angles



In the figure,  $m\angle 3 = 75$  and  $m\angle 10 = 115$ . Find the measure of each angle.

13.  $\angle 2 = 105^\circ$  con. int.

14.  $\angle 5 = 105^\circ$

15.  $\angle 7 = 105^\circ$  linear pair

16.  $\angle 15 = 115^\circ$  alt. int.

17.  $\angle 14 = 65^\circ$  linear pair

18.  $\angle 9 = 65^\circ$  linear pair

