

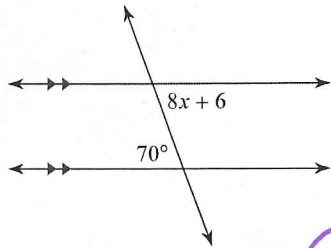
## Parallels Cut by a Transversal In Class Examples:

Directions: Find the value of the variable and justify your set up.

You must use only the following relationships:

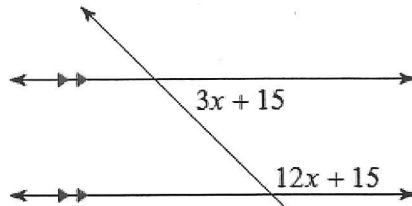
- Corresponding angles are congruent
- Alternate interior angles are congruent
- Alternate exterior angles are congruent
- Consecutive interior angles are supplementary
- Linear pairs are supplementary
- Vertical angles are congruent

1.



$8x + 6 = 70$  alt. int.  $\angle$ s are  $\cong$   
 $x = 8$

2.



$3x + 15 + 12x + 15 = 180$   
 $15x + 30 = 180$   
 $x = 10$

con int.  $\angle$ s are Suppl.

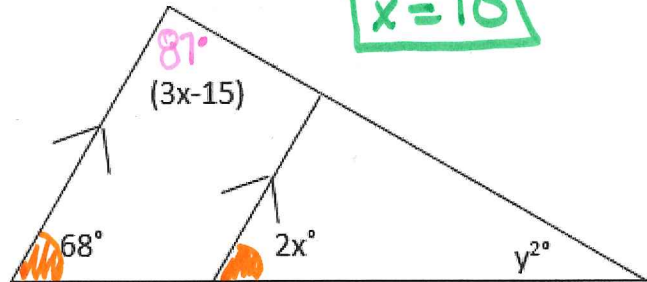
3. Find the value of x and y

Find x

$68 = 2x$  corr.  $\angle$ s are  $\cong$   
 $34 = x$

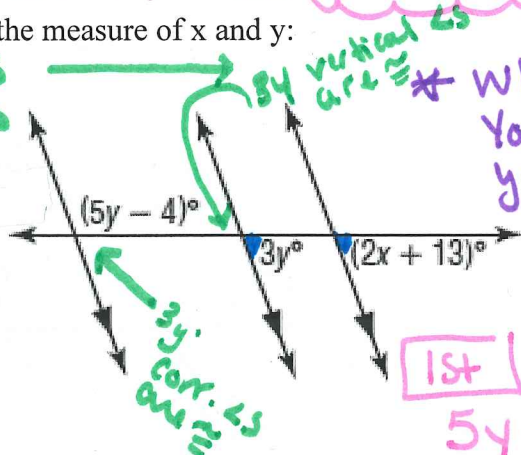
Find y

$68 + 87 + y^2 = 180$   $\Delta$  sum thm  $y^2 = 25$   $y = 5$



4) Find the measure of x and y:

use this b/c it is newer w/ con. int  $\angle$ s



\* When you place  $\angle$ s in a diff location you must indicate the move in your picture.

\* Ask yourself "What can I find 1st?" Notice here it is the y value b/c there are 2 y's!

$5y - 4 + 3y = 180$

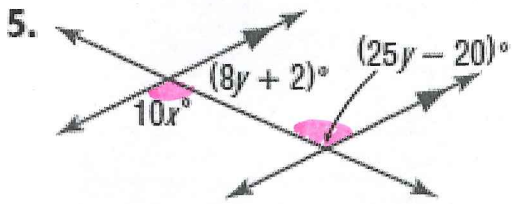
$8y - 4 = 180$   
 $y = 23$

consecutive int.  $\angle$ s are Suppl.

2nd

$3(23) = 2x + 13$  corr.  $\angle$ s are  $\cong$   
 $69 = 2x + 13$   
 $28 = x$

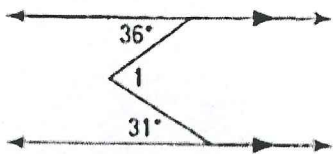
Find  $x$  and  $y$  in each figure.



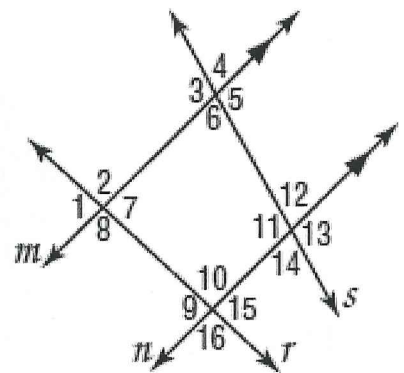
$8y + 2 + 25y - 20 = 180$  con. int.  $\angle$ s are Suppl.  
 $y = 6$

$10x = 25(6) - 20$  alt. int.  $\angle$ s are  $\cong$   
 $x = 13$

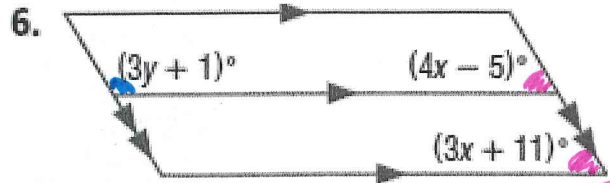
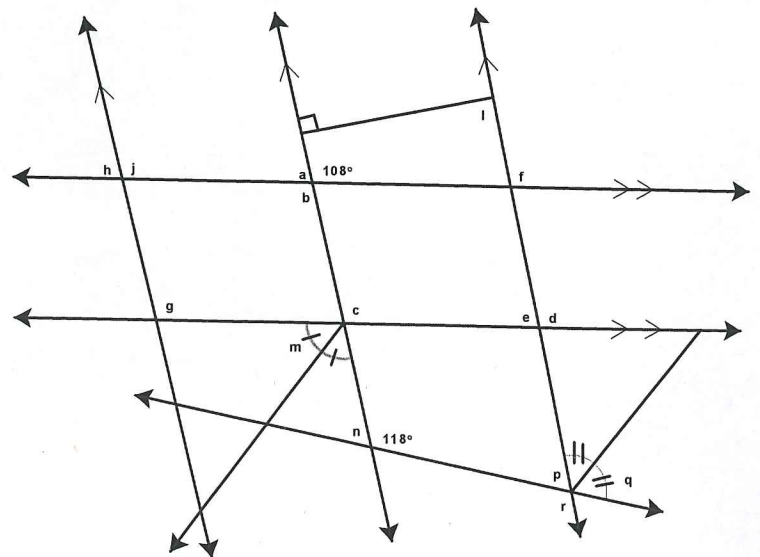
7. What is the  $m\angle 1$ ?



8. Find the measure of each angle if  $m\angle 2 = 92$  and  $m\angle 12 = 74$ .



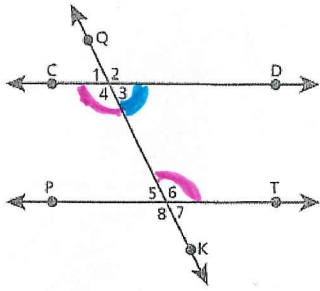
8. Find the measure of each angle.



$4x - 5 = 3x + 11$  Corr  $\angle$ s are  $\cong$   
 $x = 16$

$3y + 1 + 4(16) - 5 = 180$  con. int.  $\angle$ 's are Suppl.  
 $y = 40$

6. If  $CD \parallel PT$ ,  $m\angle 3 = (8y + 2)^\circ$ ,  $m\angle 6 = (25y - 20)^\circ$  and  $m\angle 4 = (10x)^\circ$ , find  $x$ ,  $y$  and  $m\angle 6$ . You will need to show your geometry and justify your geometric set up.



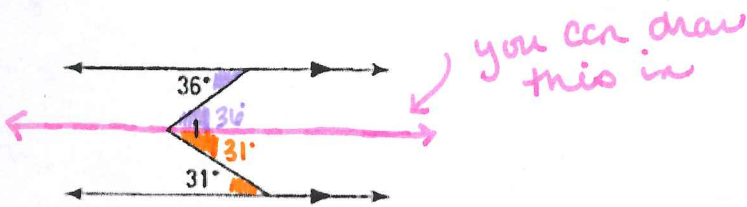
$\angle 3 + \angle 6 = 180^\circ$  consecutive int  $\angle$ s are  
 $8y + 2 + 25y - 20 = 180$  Suppl.

$y = 6$

$\angle 4 \cong \angle 6$  alt. int  $\angle$ s are  $\cong$   
 $10x = 25(6) - 20$

$x = 13$

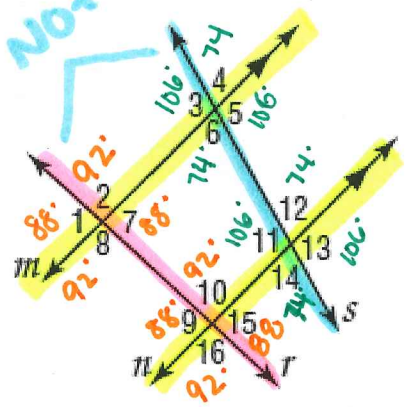
7. What is the  $m\angle 1$ ?



$m\angle 1 = 36 + 31$

$m\angle 1 = 67^\circ$

Not // lines



8. Find the measure of each angle if  $m\angle 2 = 92$  and  $m\angle 12 = 74$ .

8. Find the measure of each angle.

