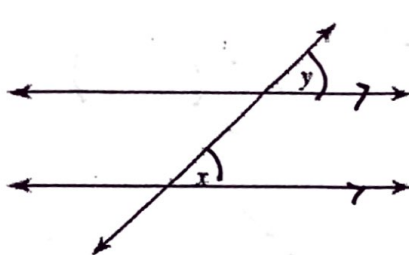
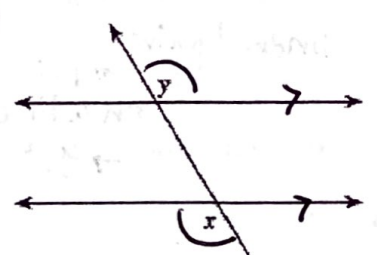
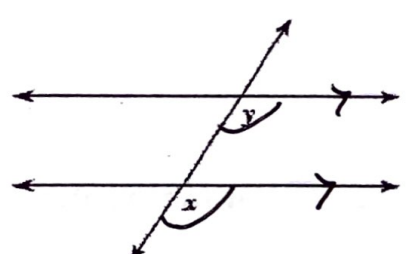
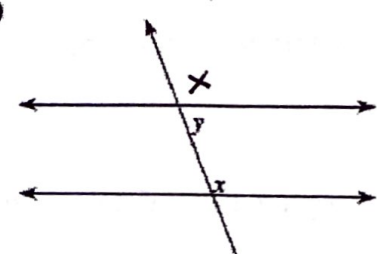


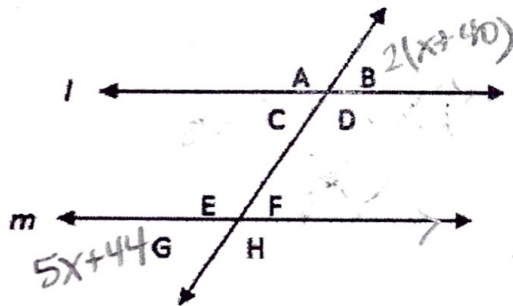
Homework 6.1: Parallel Lines and Transversals

Name: _____

Directions: Name each of the following types of angles. Then, state whether they are congruent or supplementary.

<p>1)</p> 	<p>Name: corresponding</p> <p>Congruent or Supplementary</p>	<p>2)</p> 	<p>Name: alternate exterior</p> <p>Congruent or Supplementary</p>
<p>3)</p> 	<p>Name: corresponding</p> <p>Congruent or Supplementary</p>	<p>4)</p> 	<p>Name: consecutive interior</p> <p>Congruent or Supplementary</p>

Directions: Find the value of x in each question given that lines l and m are parallel. Check your answers by finding the measure of each angle.



④ alt. ext. $\rightarrow \cong$

$$2(x+40) = 5x+44$$

$$2x+80 = 5x+44$$

$$\begin{array}{r} -2x \quad -44 \\ \hline 36 = 3x \\ \hline \frac{36}{3} = \frac{3x}{3} \\ x = 12 \end{array}$$

5. $m\angle C = 3x-10$; alt. int. $\nearrow \cong$ s.b.
 $m\angle F = x+70$

$$3x-10 = x+70$$

$$\begin{array}{r} -x \quad -x \\ \hline 2x-10 = 70 \quad 2x=80 \\ +10 \quad +10 \quad x=40 \end{array}$$

S.S. int. \rightarrow supp.

6. $m\angle D = x+27$;
 $m\angle F = 2x-39$

$$x+27 + 2x-39 = 180$$

$$3x-12 = 180$$

$$\begin{array}{r} 3x = 192 \\ \hline \frac{3x}{3} = \frac{192}{3} \\ x = 64 \end{array}$$

7. $m\angle B = 2(x+40)$;
 $m\angle G = 5x+44$

5. $x = 12$

$x = 40$
 $m\angle C = 110^\circ$
 $m\angle F = 110^\circ$

6.

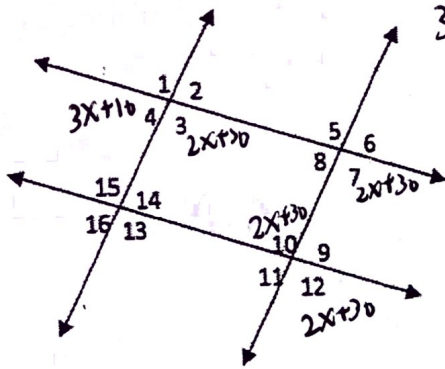
$x = 64$
 $m\angle D = 91^\circ$
 $m\angle F = 89^\circ$

7.

$x = 12$
 $m\angle B = 104^\circ$
 $m\angle G = 104^\circ$

Directions: Solve for the following. Show all work in the space provided.

8. Given that $m\angle 4 = 3x + 10$ and $m\angle 12 = 2x + 30$, find the value of x , $m\angle 4$, $m\angle 10$.



$$3x + 10 + 2x + 30 = 180$$

$$5x + 40 = 180$$

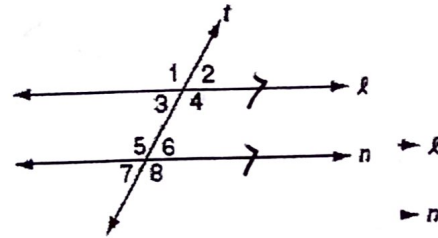
$$5x = 140$$

$$x = 28$$

$$m\angle 4 = 94$$

$$m\angle 10 = 86$$

9. In the accompanying diagram, line l is parallel to line m , and line t is a transversal. Which must be a true statement?



(1) $m\angle 1 + m\angle 4 = 180$ (3) $m\angle 3 + m\angle 6 = 180$

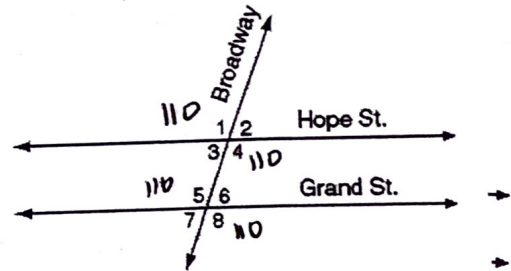
(2) $m\angle 1 + m\angle 8 = 180$ (4) $m\angle 2 + m\angle 5 = 180$

10. The accompanying diagram shows two parallel roads, Hope Street and Grand Street, crossed by a transversal road, Broadway. If $m\angle 1 = 110$, what is the measure of $m\angle 7$?

$m\angle 1 = 110$, what is the measure of $m\angle 7$?

(1) 40° (3) 110°

(2) 70° (4) 180°



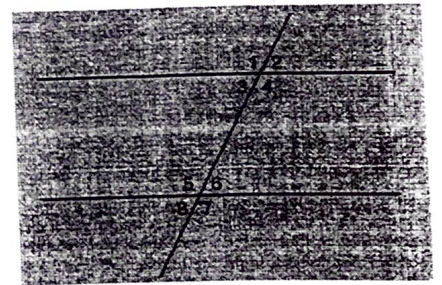
11. In the accompanying figure, what is one pair of alternate interior angles?

(1) $\angle 1$ and $\angle 2$ vertical

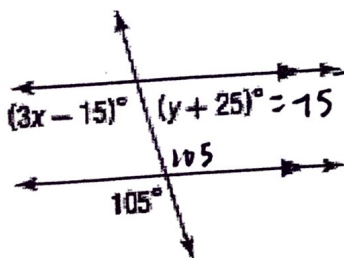
(2) $\angle 4$ and $\angle 5$ alt. int.

(3) $\angle 4$ and $\angle 6$ s.s. int.

(4) $\angle 6$ and $\angle 8$ vertical



12. Find the value of x and y .



$$3x - 15 = 105$$

$$3x = 120$$

$$x = 40$$

$$y = 50$$