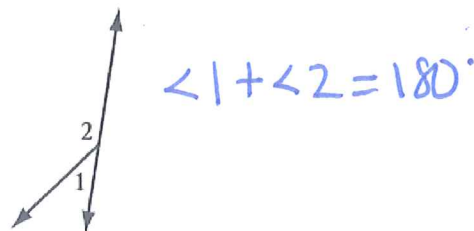
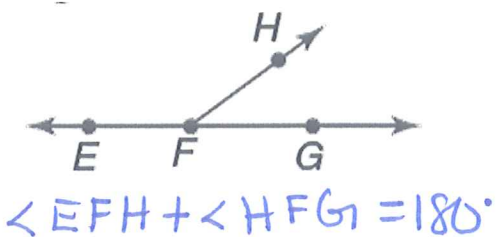
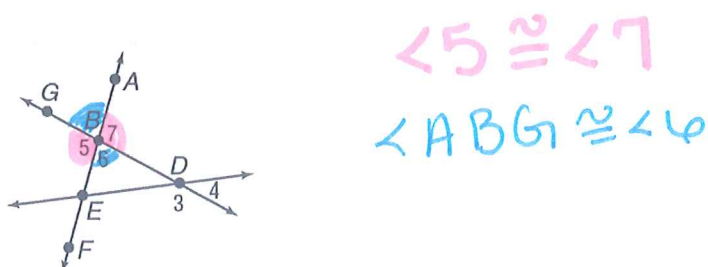


1. Write geometry notation that models the relationship that "linear pairs are supplementary" for both figures.



2. Write geometry notations that models the relationship that "vertical angles are congruent".

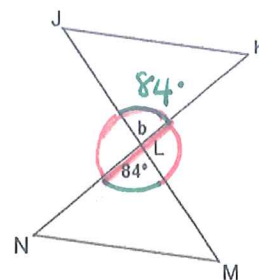


Many More Examples

Directions: Answer each question. Show your work and reasoning.

3. Find the measures of  $\angle JLK$  and  $\angle JLN$ .

$m\angle JLK = 84^\circ$  vertical  $\angle$ s are  $\cong$   
 $84 + \angle JLN = 180^\circ$  linear pairs are suppl.  
 $\angle JLN = 96^\circ$



Directions: Set up an equation that models the given situation, then find the measures of both angles in the situation.

4. The measure of one angle is 7 times the measure of its complement. Find the measure of each angle.

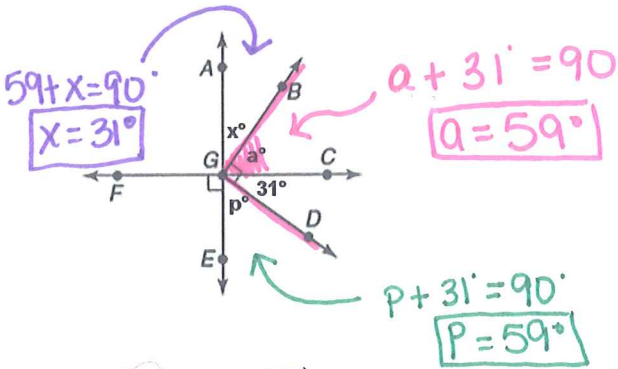
$x + \frac{7x}{(7 \text{ times})} = 90 \leftarrow$   $8x = 90$   
 $x = 11.25$   
 11.25 and 78.75

5. The measure of one angle is 10 more than 15 times the measure of its supplement. Find the measure of each angle.

$x + \frac{15x + 10}{(15 \text{ times})} = 180$   
 $16x + 10 = 180$   
 $16x = 170$   
 $x = 10.625$

10.625 and 169.375

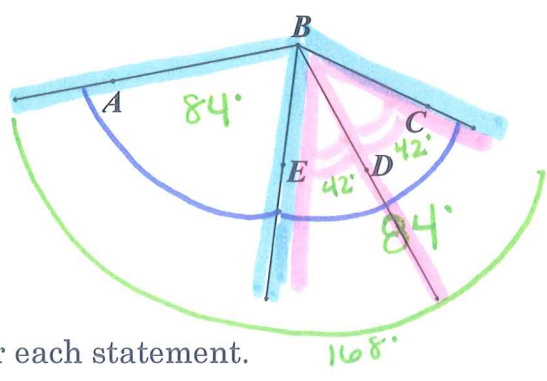
6. What is the  $m \angle AGD$ ,  $m \angle AGB$  and the value of  $2a + 8p - 7x$ ?



$m \angle AGD = x + a + 31$   
 $m \angle AGD = 31 + 59 + 31$   
 $m \angle AGD = 121^\circ$   
 $m \angle AGB = x$   
 $m \angle AGB = 31^\circ$   
 $2a + 8p - 7x = ?$   
 $2(59) + 8(59) - 7(31)$   
 $= 373$

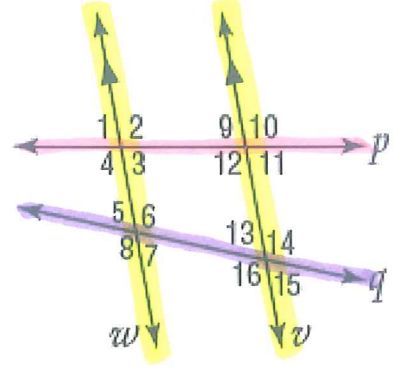
7.  $\overline{BE}$  is an angle bisector of  $\angle ABC$  and  $\overline{BD}$  is an angle bisector of  $\angle EBC$ . If  $\angle ABC = 168^\circ$  Find the measures of

- $\angle ABE = 84^\circ$
- $\angle EBC = 84^\circ$
- $\angle EBD = 42^\circ$
- $\angle CBD = 42^\circ$

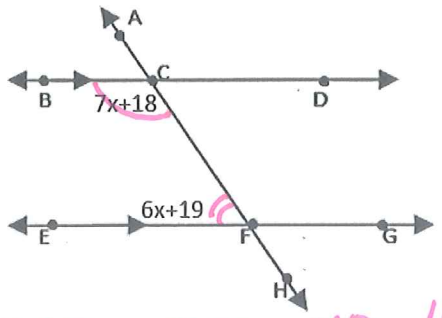


8. If  $w \parallel v$ , give the justification for each statement.

- a.  $\angle 2 \cong \angle 12$   
// lines form  $\cong$  alt int  $\angle$ s
- b.  $\angle 8 \cong \angle 14$   
// lines form  $\cong$  alt. ext  $\angle$ s
- c.  $\angle 5 \cong \angle 13$   
// lines form  $\cong$  alt. ext  $\angle$ s
- d.  $\angle 10 \cong \angle 2$   
// lines form  $\cong$  corr.  $\angle$ s.
- e.  $\angle 7 + \angle 16 = 180^\circ$   
// lines form Suppl. con. int  $\angle$ s
- f.  $\angle 16 \cong \angle 6$   
// lines form  $\cong$  alt int  $\angle$ s

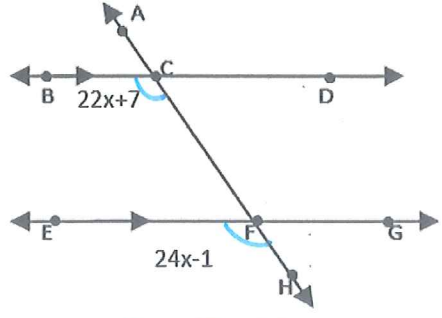


9. Find x.



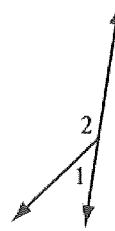
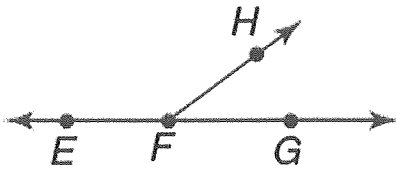
$\angle BCF + \angle EFC = 180$  // lines form Suppl. con. int Angles.  
 $7x + 18 + 6x + 19 = 180$   
 $13x + 37 = 180$   
 $13x = 143$   
 $x = 11$

10. Find x.

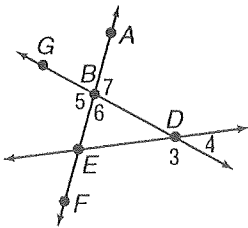


$\angle BCF \cong \angle EFH$  // lines form  $\cong$  corresp.  $\angle$ s  
 $22x + 7 = 24x - 1$   
 $7 = 2x - 1$   
 $8 = 2x$   
 $4 = x$

1. Write geometry notation that models the relationship that “linear pairs are supplementary” for both figures.

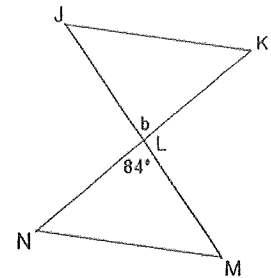


2. Write geometry notations that models the relationship that “vertical angles are congruent”.



Directions: Answer each question. Show your work and reasoning.

3. Find the measures of  $\angle JLK$  and  $\angle JLN$ .

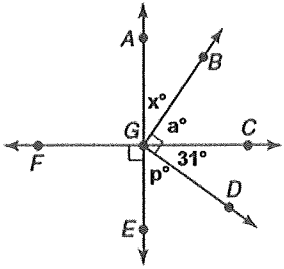


Directions: Set up an equation that models the given situation, then find the measures of both angles in the situation.

4. The measure of one angle is 7 times the measure of its complement. Find the measure of each angle.

5. The measure of one angle is 10 more than 15 times the measure of its supplement. Find the measure of each angle.

6. What is the  $m \angle AGD$ ,  $m \angle AGB$  and the value of  $2a + 8p - 7x$ ?



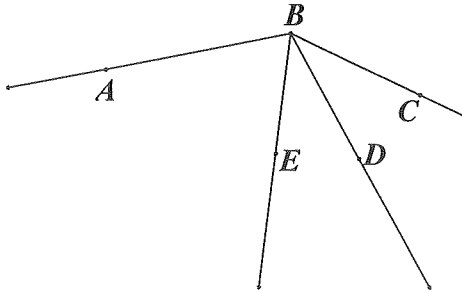
7.  $\overline{BE}$  is an angle bisector of  $\angle ABC$  and  $\overline{BD}$  is an angle bisector of  $\angle EBC$ . If  $\angle ABC = 168^\circ$ . Find the measures of

$\angle ABE =$  \_\_\_\_\_

$\angle EBC =$  \_\_\_\_\_

$\angle EBD =$  \_\_\_\_\_

$\angle CBD =$  \_\_\_\_\_



8. If  $w \parallel v$ , give the justification for each statement.

a.  $\angle 2 \cong \angle 12$

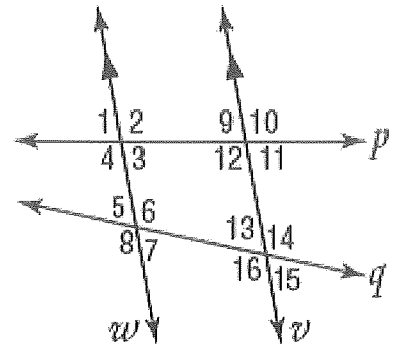
b.  $\angle 8 \cong \angle 14$

c.  $\angle 5 \cong \angle 13$

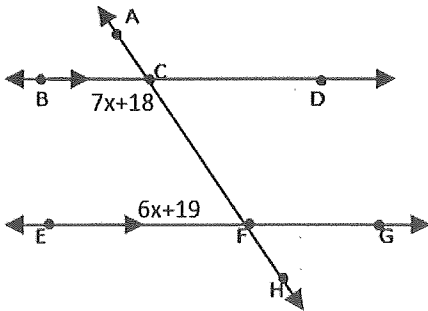
d.  $\angle 10 \cong \angle 2$

e.  $\angle 7 + \angle 16 = 180^\circ$

f.  $\angle 16 \cong \angle 6$



9. Find  $x$ .



10. Find  $x$ .

