Transversals

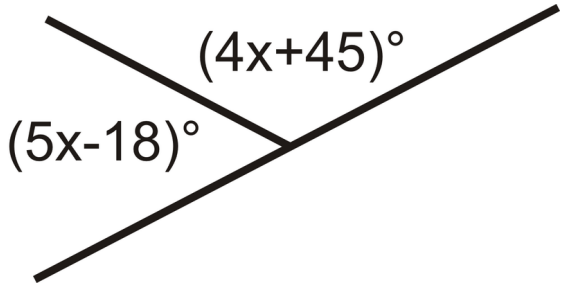
CP Geometry

Name:_____

Multiplying Fractions & Transversals

Date:

Warm-Up: Solve for x and find the measure of each angle.



Multiplying Fractions
When multiplying fractions we can: _____.
If we do this, we need to make sure to _____!
Another thing that we can do is _____.
Steps: 1. Look at the numbers diagonal from each other in your problem. 2. Find a factor that they have in common and divide them both by that number 3. Cross out the numbers and write the new numbers you got after you divided. 4. Multiply across the top and the bottom. 5. Simplify if needed.

Example: Find the reciprocal of each number.

a. $\frac{7}{16} * \frac{4}{5}$

b. $\frac{5}{6} * \frac{7}{15}$

c. $\frac{5}{18} * \frac{9}{10}$

d. $\frac{6}{15} * \frac{5}{12}$

Practice!

1. $\frac{16}{30} * \frac{2}{4}$

2. $\frac{12}{22} * \frac{7}{14}$

3. $\frac{4}{7} * \frac{8}{9}$

4. $\frac{3}{4} * \frac{8}{9}$

5. $\frac{5}{12} * \frac{8}{15}$

6. $\frac{11}{6} * \frac{18}{33}$

7. $\frac{3}{5} * \frac{7}{12}$

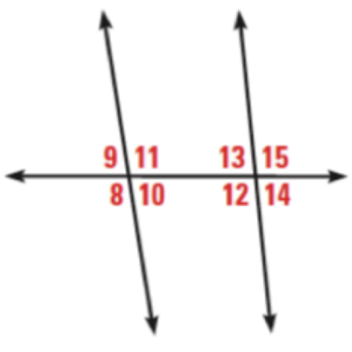
8. $\frac{18}{5} \div \frac{11}{6}$

9. $\frac{1}{4} * \frac{8}{3}$

10. $\frac{13}{15} * \frac{45}{26}$

Word	Definition	Picture/Symbol/Example
Transversal		
Corresponding Angles		
Alternate Exterior Angles		
Alternate Interior Angles		
Same Side Interior Angles (Consecutive Interior Angles)		

Example 1: Complete the statement with corresponding, alternate interior, alternate exterior or same side interior.



a. ∠8 and ∠12 are _____ angles.

b. ∠9 and ∠14 are _____ angles.

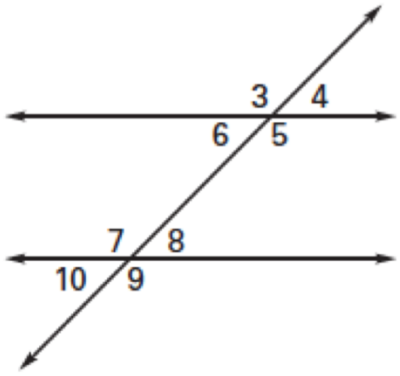
c. ∠10 and ∠12 are _____ angles.

d. ∠11 and ∠12 are _____ angles.

e. ∠8 and ∠15 are _____ angles.

f. ∠10 and ∠14 are _____ angles.

Example 2: Complete the statement with corresponding, alternate interior, alternate exterior or same side interior.



a. 5 and ∠8 are _____ angles.

b. ∠3 and ∠7 are _____ angles.

c. ∠4 and ∠10 are _____ angles.

d. ∠8 and ∠6 are _____ angles.

e. ∠9 and ∠5 are _____ angles.

f. ∠5 and ∠7 are _____ angles.

Transversals with Parallel Lines

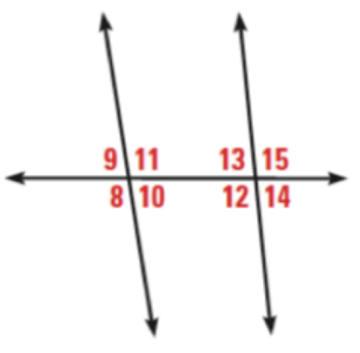
Date:

Warm-Up:

a. $\frac{5}{16} * \frac{10}{25}$ b. $\frac{3}{14} * \frac{7}{18}$ c. $\frac{8}{11} * \frac{22}{24}$

From last time…

Example 1: Complete the statement with corresponding, alternate interior, alternate exterior or same side interior.



a. ∠8 and ∠12 are _____ angles.

b. ∠9 and ∠14 are _____ angles.

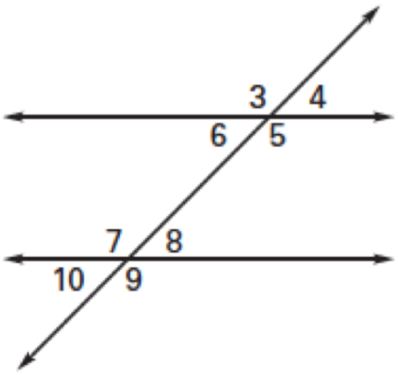
c. ∠10 and ∠12 are _____ angles.

d. ∠11 and ∠12 are _____ angles.

e. ∠8 and ∠15 are _____ angles.

f. ∠10 and ∠14 are _____ angles.

Example 2: Complete the statement with corresponding, alternate interior, alternate exterior or same side interior.



a. 5 and ∠8 are _____ angles.

b. ∠3 and ∠7 are _____ angles.

c. ∠4 and ∠10 are _____ angles.

d. ∠8 and ∠6 are _____ angles.

e. ∠9 and ∠5 are _____ angles.

f. ∠5 and ∠7 are _____ angles.

Relationships Between Angles Created by Transversals

If two ***parallel lines*** are cut by a transversal then….

Corresponding angles are _____.

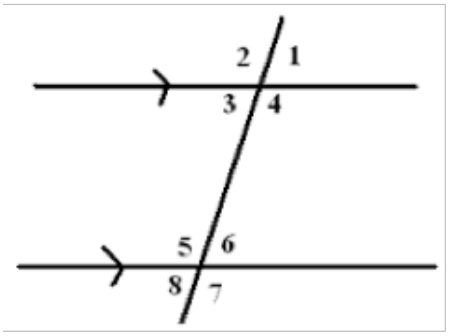
Alternate interior angles are _____.

Alternate exterior angles are _____.

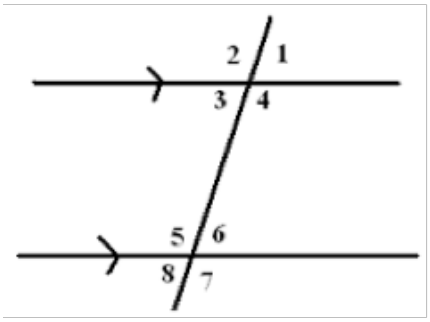
Same side interior angles are _____.

Examples:

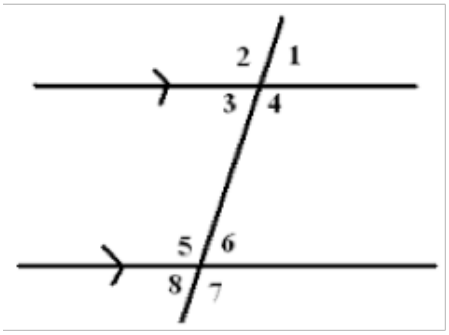
1. Find each missing angle measure if $m\angle 2 = 100°$



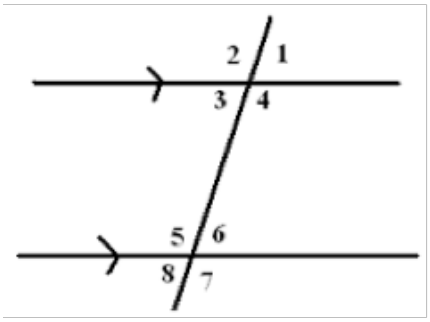
2. Find each missing angle measure if $m\angle 3 = 70°$



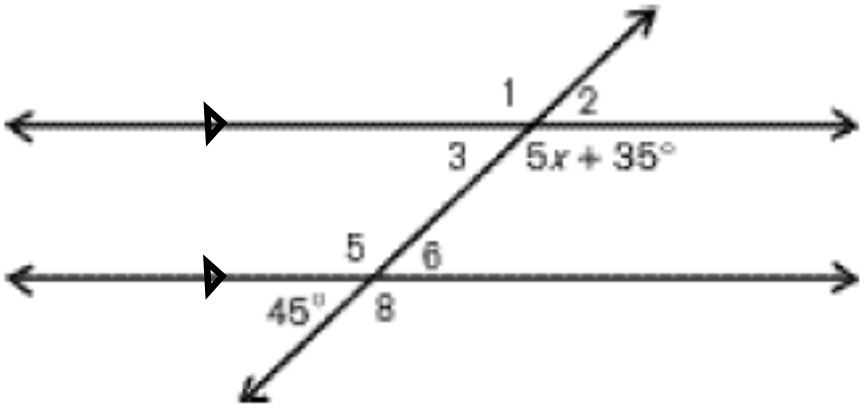
3. Find each missing angle measure if $m\angle 6 = 65°$



4. Find each missing angle measure if $m\angle 7 = 95°$



5. Find each value:



$m\angle 5 =$ _____

$m\angle 6 =$ _____

$m\angle 8 =$ _____

$m\angle 1 =$ _____

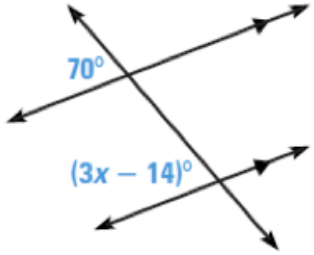
$m\angle 2 =$ _____

$m\angle 3 =$ _____

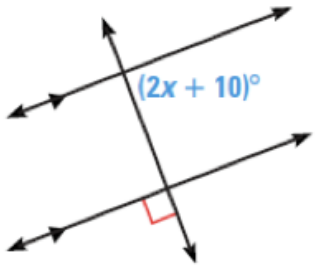
$x =$ _____

6. Write an equation relating the given angles. Then find the value of x.

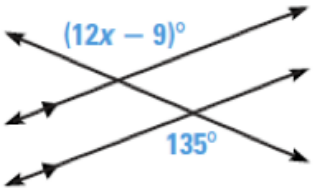
a. $x =$ _____



b. $x =$ _____



c. $x =$ _____



<u>On Your Own:</u>

Identify each pair of angles as: corresponding, alternate interior, alternate exterior, same side interior or vertical angles.

1. ∠1 and ∠5

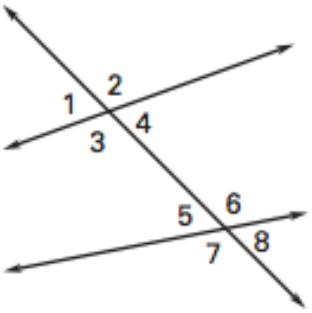
2. ∠2 and ∠7

3. ∠3 and ∠6

4. ∠8 and ∠5

5. ∠4 and ∠6

6. ∠8 and ∠4



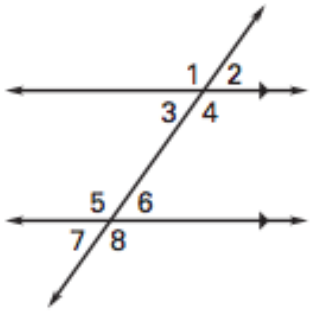
Explain in your own words why each of the following statements is true.

7. $\angle 3 \cong \angle 7$

8. $\angle 3 \cong \angle 6$

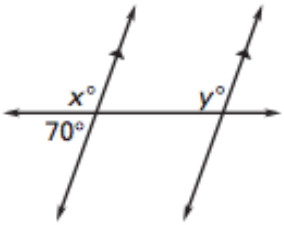
9. $\angle 2 \cong \angle 7$

10. $m\angle 4 + m\angle 6 = 180°$

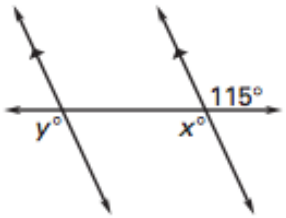


Find the value of x and y.

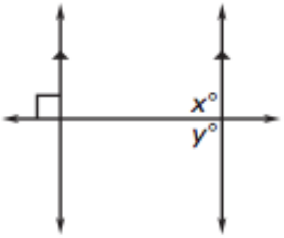
11.



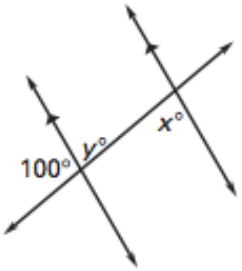
12.



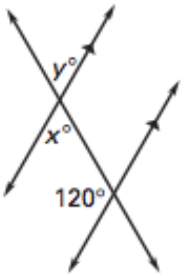
13.



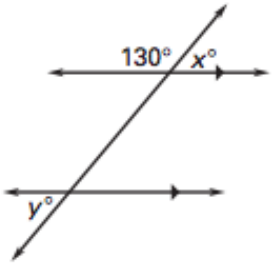
14.



15.



16.



Dividing Fractions & Proving Parallel Lines

Date:

Warm-Up: Evaluate

1. Find the measure of each angle:

$m\angle FET =$ _____

$m\angle FED =$ _____

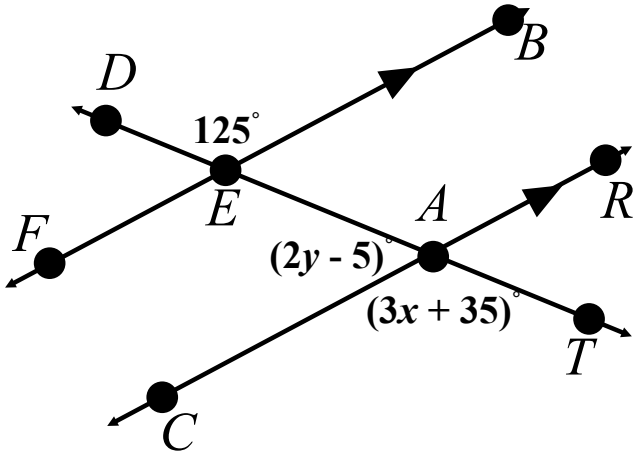
$m\angle BET =$ _____

$m\angle EAR =$ _____

$m\angle CAT =$ _____

$m\angle RAT =$ _____

$m\angle CAD =$ _____



Solve for *x* and *y*:

Dividing Fractions
Dividing by a fraction is the same as _____.
Two numbers are reciprocal if:

Practice!

11. $8 \div 2$

12. $8 \div \frac{1}{2}$

3. $\frac{1}{2} \div \frac{3}{2}$

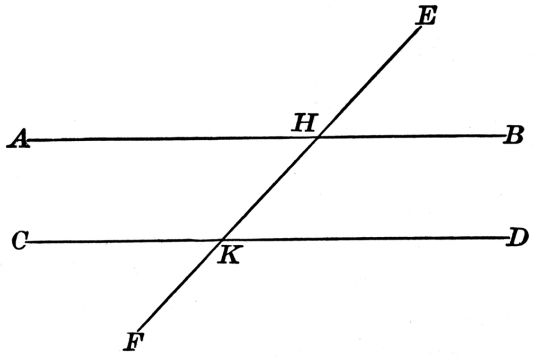
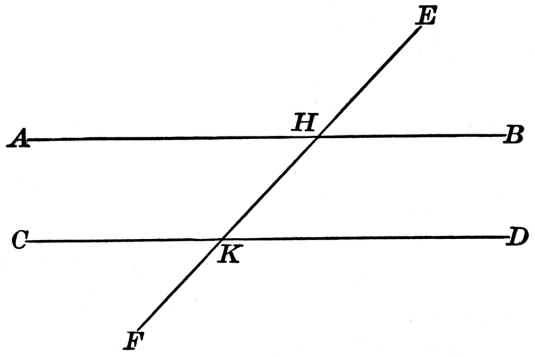
4. $\frac{3}{10} \div \frac{9}{5}$

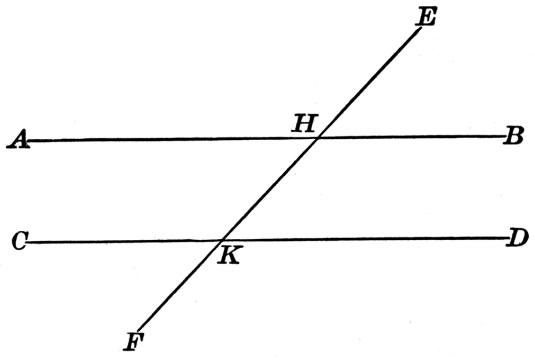
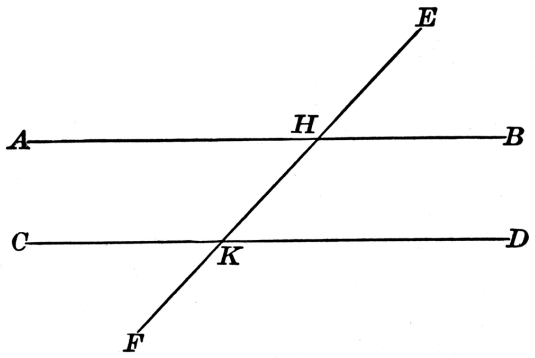
$\overleftrightarrow{AB} \| \overleftrightarrow{CD}$ ∥ means _____.

$\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$ ⊥ means _____.

Draw a picture to represent each expression:

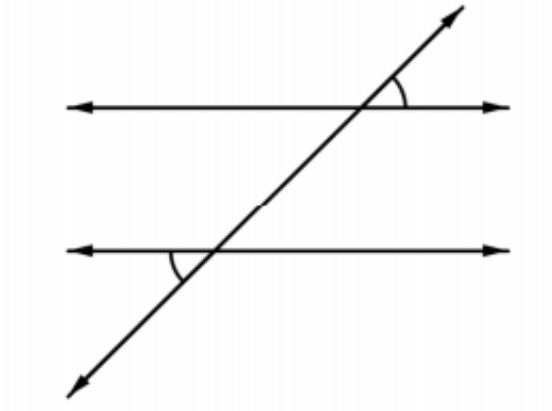
$\overleftrightarrow{JK} \| \overleftrightarrow{LM}$ $\overleftrightarrow{RS} \perp \overleftrightarrow{TU}$ $\overline{EF} \cong \overline{GH}$

Proving Lines Parallel	**Example:**
If corresponding angles are _____ the lines are parallel.	
If alternate interior angles are _____ the lines are parallel.	

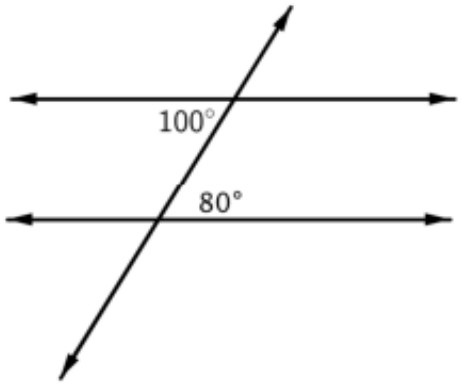
If alternate exterior angles are _____ the lines are parallel.	
If same side interior angles are _____ the lines are parallel.	

In each example, determine if the lines are parallel or not. Explain why.

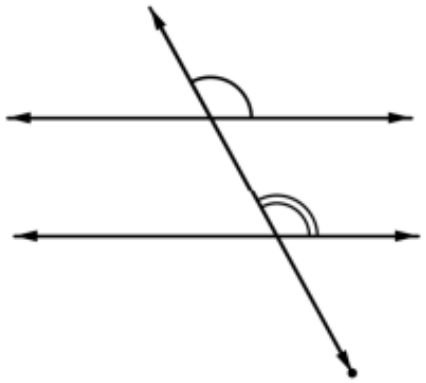
1.



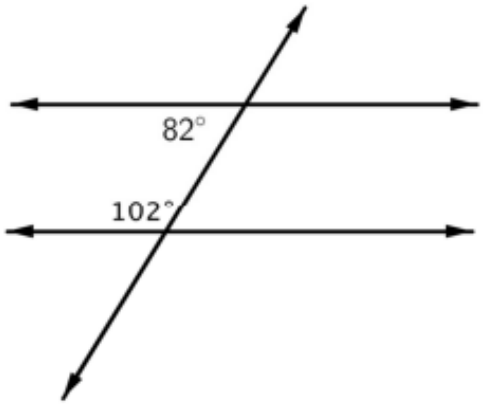
2.



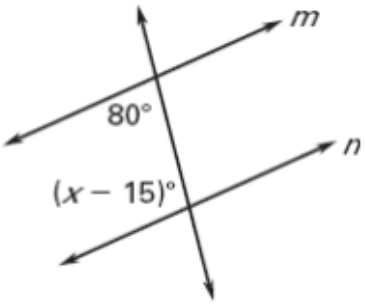
3.



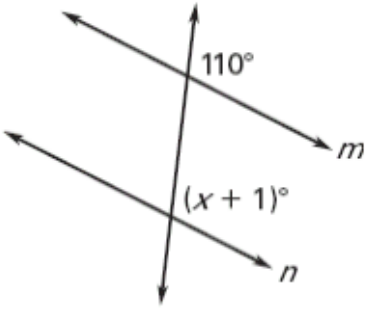
4.



15. Find the value of x that makes $m \parallel n$.

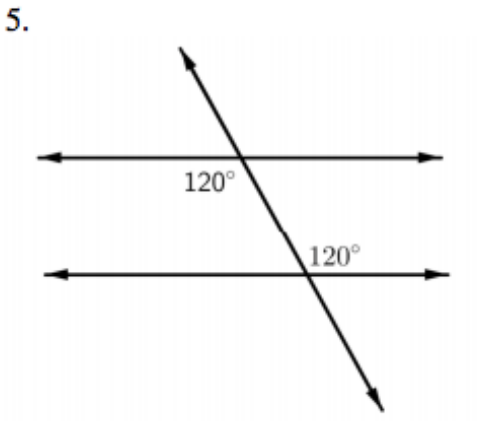


16. Find the value of x that makes $m \parallel n$.

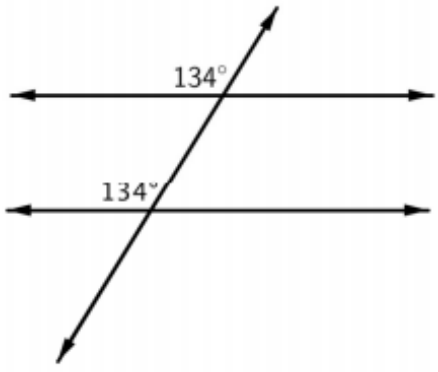


On your own:
Determine if the lines are parallel or not. Explain why.

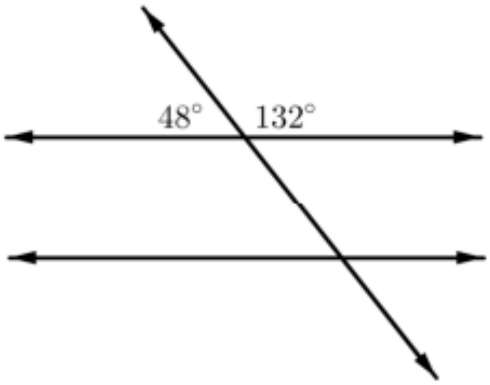
5.



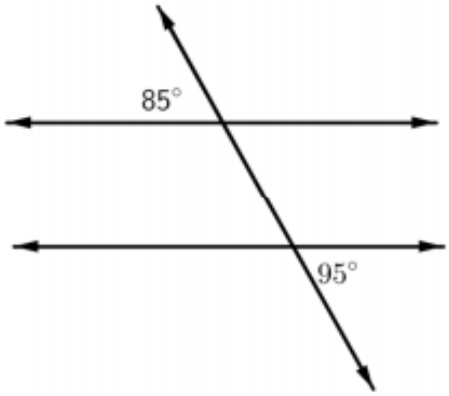
6.



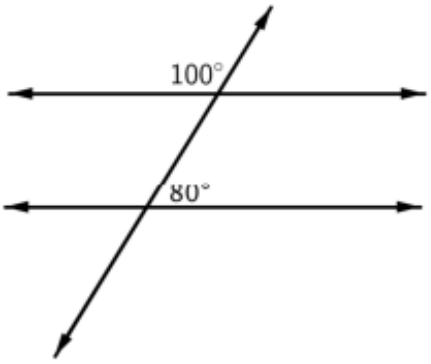
7.



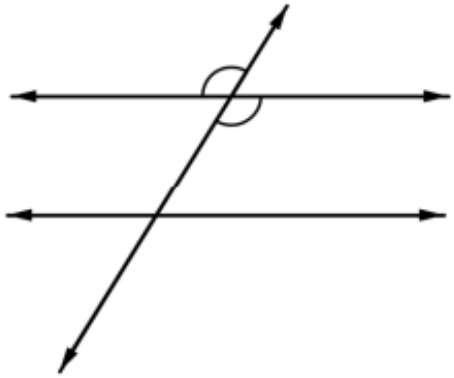
8.



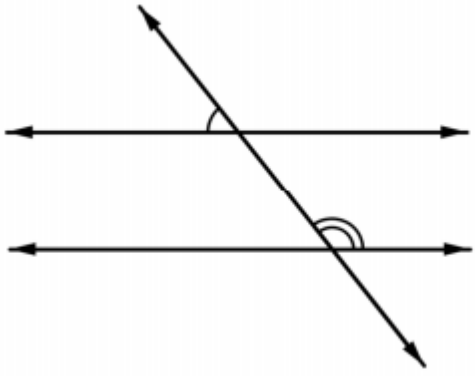
9.



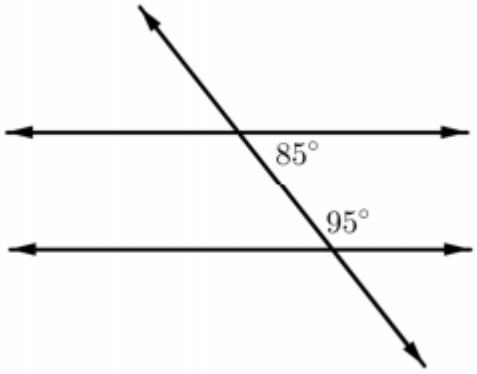
10.



11.

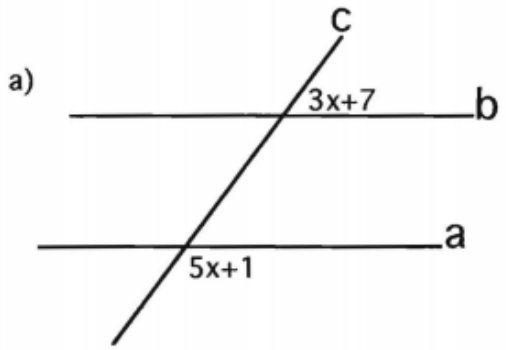


12.

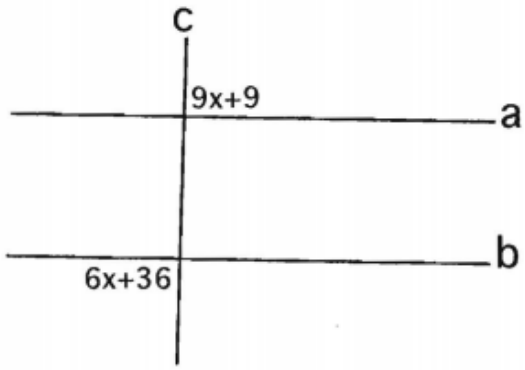


Find x so that $a \parallel b$.

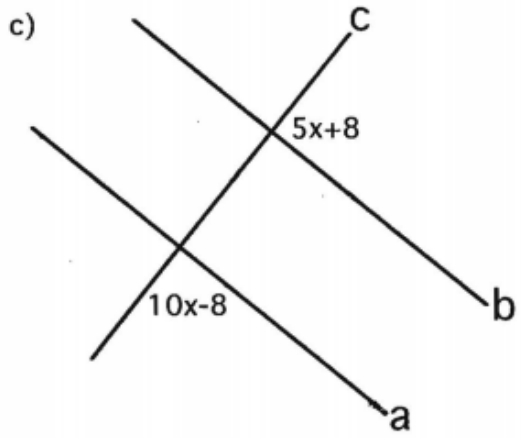
a)



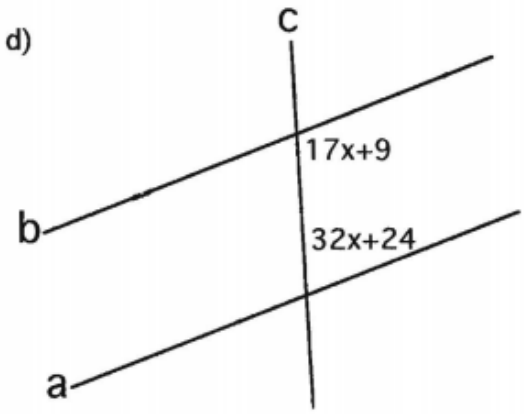
b)



c)



d)



Dividing Fractions Practice:

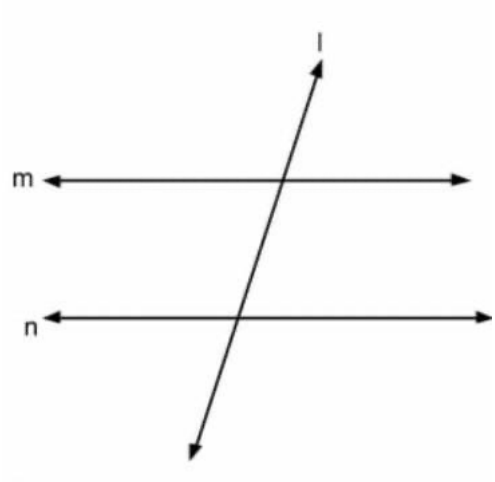
1. $12 \div \frac{2}{3}$
2. $\frac{3}{4} \div \frac{9}{8}$
3. $\frac{5}{12} \div \frac{10}{3}$
4. $20 \div \frac{5}{6}$
5. $\frac{3}{5} \div 3$
6. $\frac{18}{5} \div \frac{1}{5}$

Proving Lines Parallel with Algebra

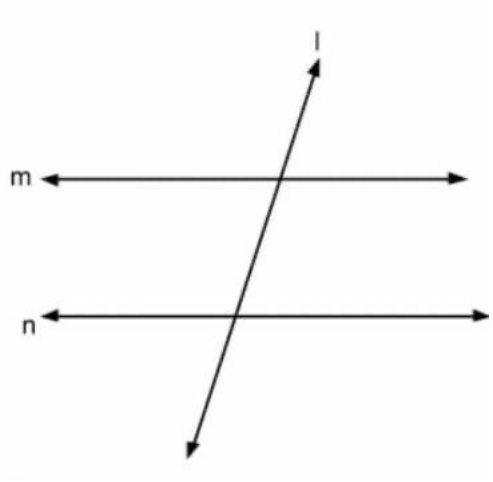
Date:

Warm Up: Determine if the lines are parallel using properties of transversals with parallel lines

a.

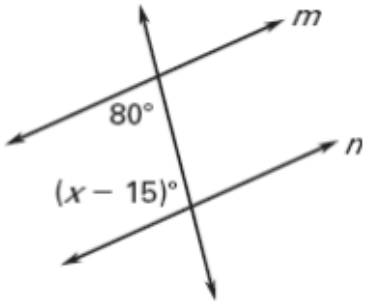


b.

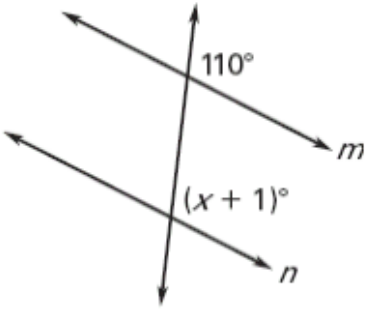


Proving Lines are Parallel with Algebra

15. Find the value of x that makes $m \parallel n$.

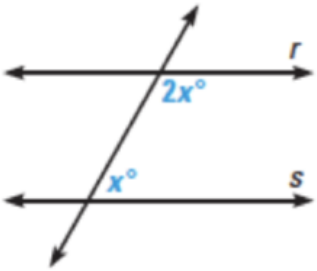


16. Find the value of x that makes $m \parallel n$.



On your own:

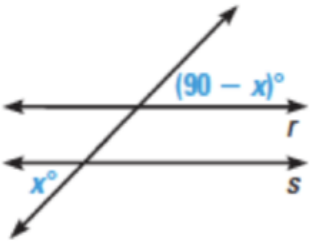
1. Name the angles: same side interior, alternate exterior, alternate interior, corresponding
2. Name the relationship between the angles: Do they add to 180 or are they congruent?
3. Using an equation find the value of x that makes $r \parallel s$.



Angle Pair Name: _____

Relationship: _____

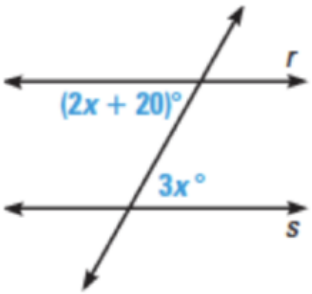
x = _____



Angle Pair Name: _____

Relationship: _____

x = _____



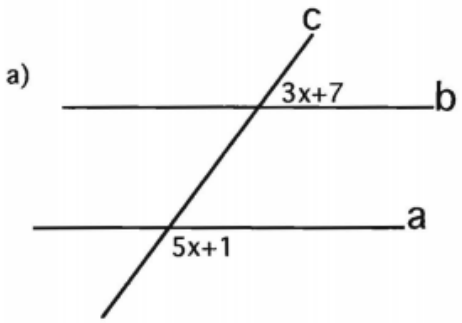
Angle Pair Name: _____

Relationship: _____

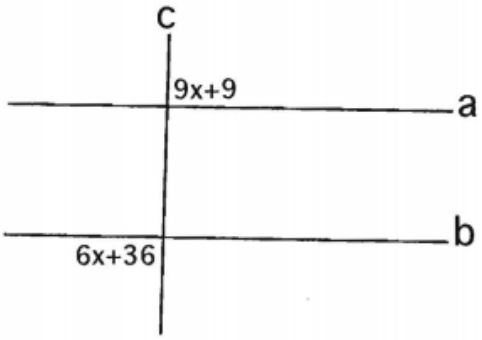
x = _____

Find x so that $a \parallel b$.

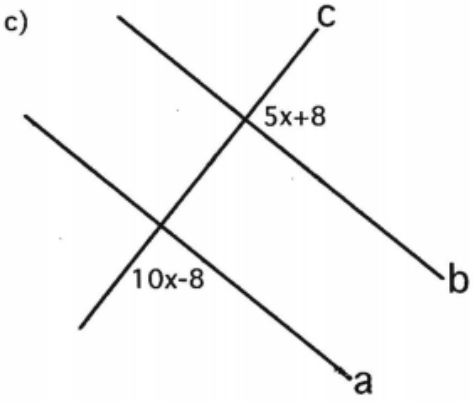
a)



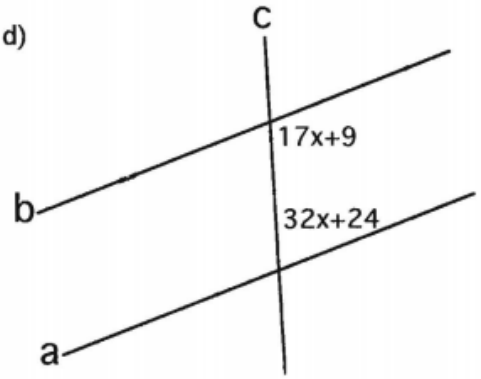
b)



c)



d)



a.

Angle Pair Name: _____

Relationship: _____

x = _____

b. Angle Pair Name: _____

Relationship: _____

x = _____

c. Angle Pair Name: _____

Relationship: _____

x = _____

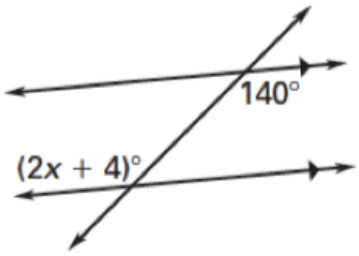
d.

Angle Pair Name: _____

Relationship: _____

x = _____

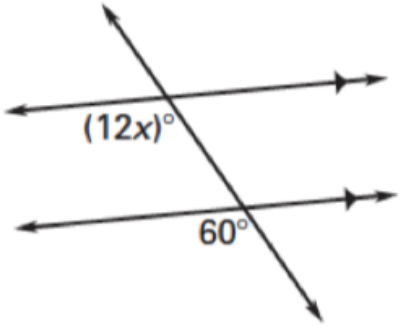
1. Name the angles: same side interior, alternate exterior, alternate interior, corresponding
2. Name the relationship between the angles: Do they add to 180 or are they congruent?
3. Using an equation find the value of x



Angle Pair Name: _____

Relationship: _____

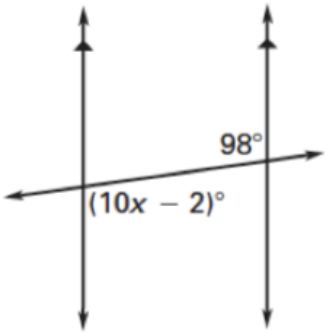
x = _____



Angle Pair Name: _____

Relationship: _____

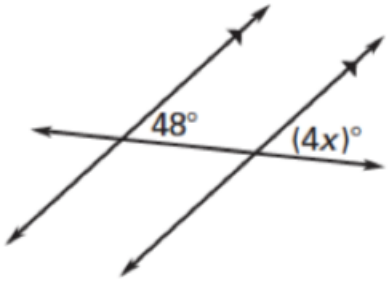
x = _____



Angle Pair Name: _____

Relationship: _____

x = _____



Angle Pair Name: _____

Relationship: _____

x = _____