Name: _____   Date: _____

Lesson 1.8 day 1 - Angles form by Parallel Lines and a Transversal   CC Geometry

Transversal: _____

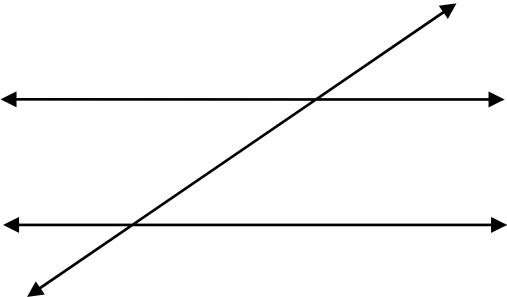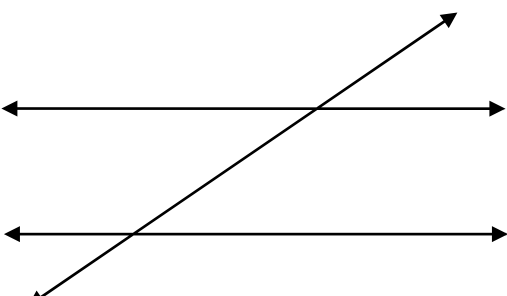|	
<u>Corresponding Angles</u> Corresponding Angles are:	Label the Corresponding Angles
<u>Alternate Interior Angles</u> Alternate Interior Angles are:	Label the Alternate Interior Angles
<u>Alternate Exterior Angles</u> Alternate Exterior Angles are:	Label the Alternate Exterior Angles
<u>Same Side Interior Angles</u> **<u>(Consecutive interior angles)</u>** Same Side Interior Angles (consecutive interior angles) are:	Label the Same Side Interior Angles (consecutive interior angles)

When two parallel lines are cut by a transversal, there are always ONLY _____ different angle measures

formed. They are an _____ angle and an _____ angle.

The lines must be _____ for any of properties in the chart above to exist. The two
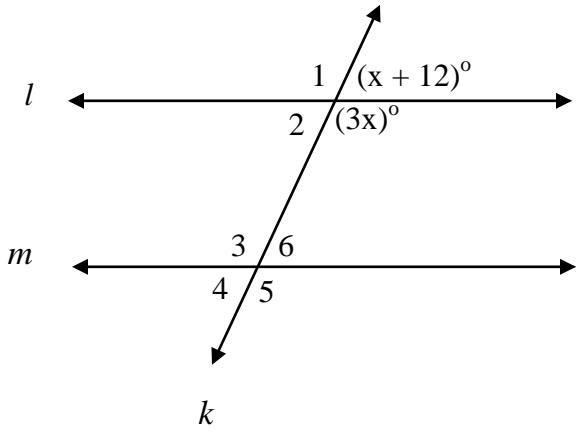
angle measures only exist along the same _____.

<u>**Practice:**</u>
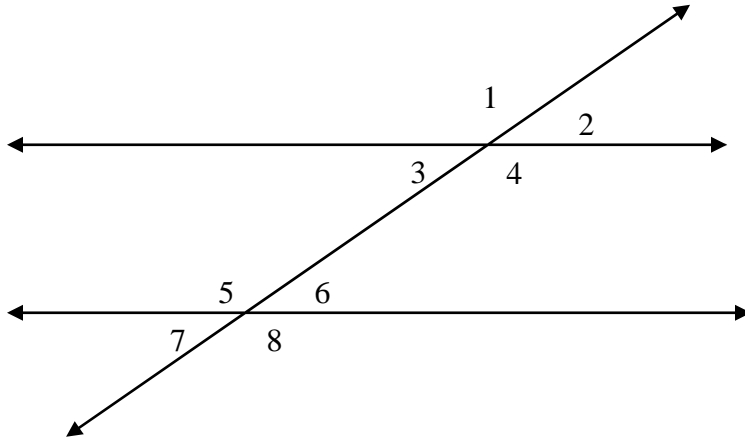
The measure of angle 4 is $100°$. Find the measure of the following angles:

1. ∠ 1   2. ∠ 2   3. ∠ 3   4. ∠ 5   5. ∠ 6   6. ∠ 7   7. ∠ 8

_____   _____   _____   _____   _____   _____   _____

2. Using the diagram above, fill in the blanks.

   a. ∠ 1 and ∠ 2 are_____angles.

   b. ∠ 6 and ∠ 7 are_____angles.

   c. ∠ 1 and ∠ 5 are_____angles.

   d. ∠ 3 and ∠ 6 are_____angles.

   e. ∠ 1 and ∠ 8 are_____angles.

3. In the figures below, lines *l* and *m* are parallel and cut by transversal *k*. Find the value for *x* and the measure of **each of the other angles**.
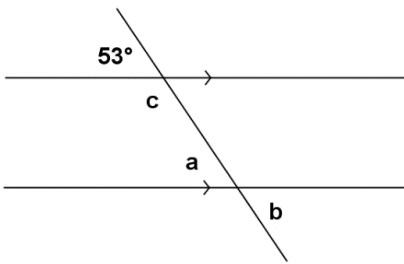
$x =$ _____

1 $(x + 12)^o$
l
2 $(3x)^o$

1= _____   4= _____

2= _____   5= _____

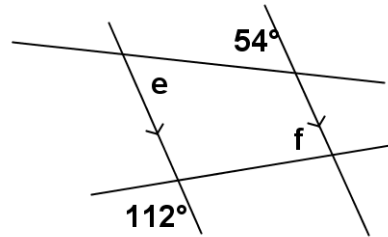3 6
m
4 5

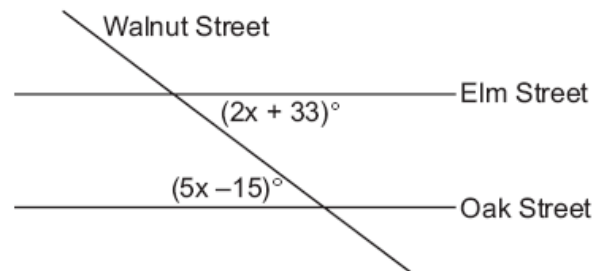3= _____   6= _____

k

4.

53°

c

a

b

5.

54°

e

f

112°

5. Two parallel roads, Elm Street and Oak Street, are crossed by a third, Walnut Street, as shown in the accompanying diagram. Find the number of degrees in the acute angle formed by the intersection of Walnut Street and Elm Street. Explain how you arrived at your answer.

Walnut Street

Elm Street
$(2x + 33)^\circ$

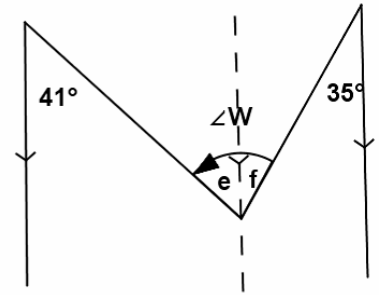$(5x - 15)^\circ$
Oak Street

Name:_____   Date: _____
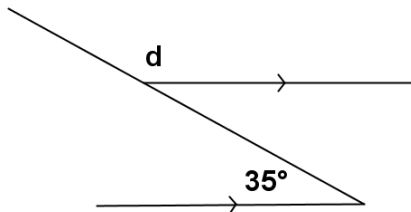Lesson 1.8 day 2 - Angles form by Parallel Lines and a Transversal   CC Geometry

An_____is sometimes useful when solving for unknown angles.

In this figure, we can use the auxiliary line to find the measures of $\angle e$ and $\angle f$ (how?), then add the two measures together to find the measure of $\angle W$.

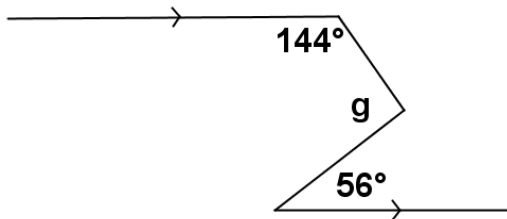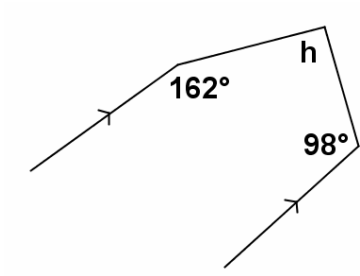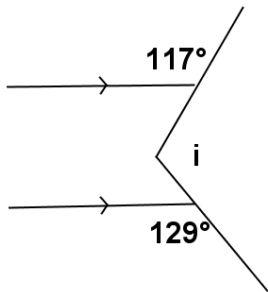What is the measure of $\angle W$?

41°   35°
          $\angle W$
            e f

1.

d

35°

d = _____

2.   144°

g

g = _____

56°

4.

162°

h

98°

m∠h = _____

5.

117°

i

129°

m∠i = _____