

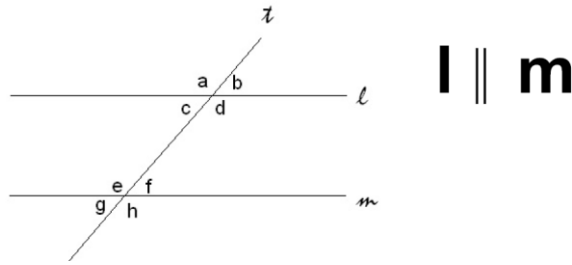
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**(A) Lesson Objectives**

- a. Define the term transversals
- b. Identify alternate angles in parallel lines
- c. Identify corresponding angles in parallel lines
- d. Identify co-interior angles in parallel lines
- e. Apply basic knowledge of linear equations to angles formed by transversals and parallel lines

**(B) Explorations**



- a. Parallel Lines & Transversals → [http://www.geogebra.org/en/upload/files/english/Barbara\\_Perez/Parallel\\_Lines.html](http://www.geogebra.org/en/upload/files/english/Barbara_Perez/Parallel_Lines.html)
- b. Link #2 → <http://www.mathsisfun.com/geometry/parallel-lines.html>

**(C) Summary**

- a. Given angle d and angle e → these angles are called: \_\_\_\_\_.
- b. Given angle a and angle e → these angles are called: \_\_\_\_\_.
- c. Given angle c and angle e → these angles are called: \_\_\_\_\_.
- d. Given angle h and angle e → these angles are called: \_\_\_\_\_.
  
- e. Other examples of alternate interior angles are \_\_\_\_\_.
- f. Other examples of alternate exterior angles are \_\_\_\_\_.
- g. Other examples of corresponding angles are \_\_\_\_\_.
- h. Other examples of co-interior interior angles are \_\_\_\_\_.

7. Line  $t$  is called a \_\_\_\_\_.

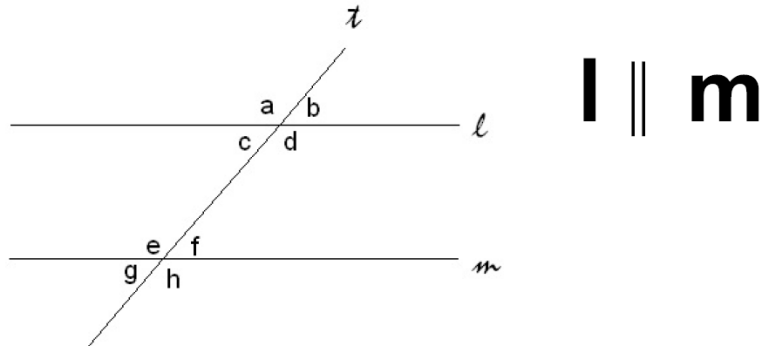
8.  $\angle b + \angle h = \underline{\quad}^\circ$

9.  $\angle e + \angle c = \underline{\quad}^\circ$

10.  $\angle a \cong \angle \underline{\quad} \cong \angle \underline{\quad} \cong \angle \underline{\quad}$

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Use the diagram above as shown to answer the following questions:

11. Given:  $\angle a = 115^\circ$

$$\begin{aligned}\angle a &= \underline{\hspace{2cm}}^\circ & \angle e &= \underline{\hspace{2cm}}^\circ \\ \angle b &= \underline{\hspace{2cm}}^\circ & \angle f &= \underline{\hspace{2cm}}^\circ \\ \angle c &= \underline{\hspace{2cm}}^\circ & \angle g &= \underline{\hspace{2cm}}^\circ \\ \angle d &= \underline{\hspace{2cm}}^\circ & \angle h &= \underline{\hspace{2cm}}^\circ\end{aligned}$$

12. Given:  $\angle b = x + 15^\circ$ ,  $\angle h = 2x^\circ$

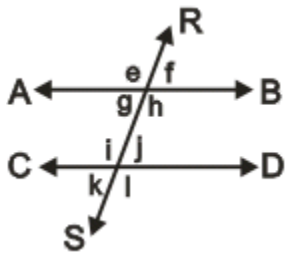
$$\begin{aligned}\angle a &= \underline{\hspace{2cm}}^\circ & \angle e &= \underline{\hspace{2cm}}^\circ \\ \angle b &= \underline{\hspace{2cm}}^\circ & \angle f &= \underline{\hspace{2cm}}^\circ \\ \angle c &= \underline{\hspace{2cm}}^\circ & \angle g &= \underline{\hspace{2cm}}^\circ \\ \angle d &= \underline{\hspace{2cm}}^\circ & \angle h &= \underline{\hspace{2cm}}^\circ\end{aligned}$$

13. Given:  $\angle c = 3x^\circ$ ,  $\angle h = x + 40^\circ$

$$\begin{aligned}\angle a &= \underline{\hspace{2cm}}^\circ & \angle e &= \underline{\hspace{2cm}}^\circ \\ \angle b &= \underline{\hspace{2cm}}^\circ & \angle f &= \underline{\hspace{2cm}}^\circ \\ \angle c &= \underline{\hspace{2cm}}^\circ & \angle g &= \underline{\hspace{2cm}}^\circ \\ \angle d &= \underline{\hspace{2cm}}^\circ & \angle h &= \underline{\hspace{2cm}}^\circ\end{aligned}$$

Created by: Kathryn Schulte 7/2005

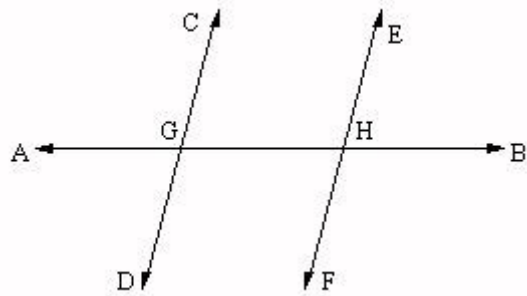
1.



Line RS is a transversal of line AB and line CD.

Name the alternate exterior angles.

2.



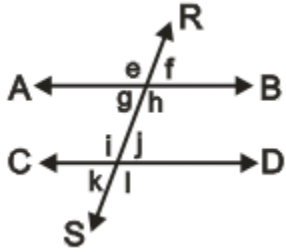
$\overleftrightarrow{CD} \parallel \overleftrightarrow{EF}$

Name all of the angles that must be congruent to  $\angle BHE$ .

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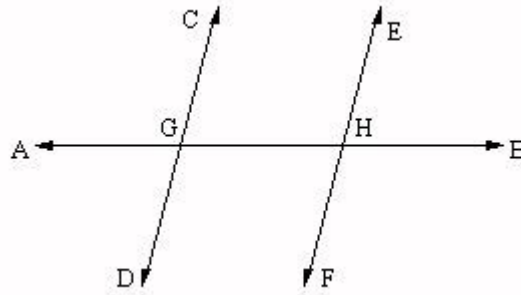
3.



Line RS is a transversal of line AB and line CD.

Name the corresponding angles.

4.



$\overleftrightarrow{CD} \parallel \overleftrightarrow{EF}$

$$m\angle DGH = (94 + x)^\circ$$

$$m\angle FHG = (4x + 226)^\circ$$

Find the value of x.

5. A transversal cuts two parallel lines.  $\angle Q$  and  $\angle O$  are two corresponding interior angles.

Given:

$$m\angle Q = (104 + x)^\circ$$

$$m\angle O = (2x + 148)^\circ$$

What is the value of x?

6. A transversal cuts two parallel lines.  $\angle J$  and  $\angle O$  are two interior angles on the same side of the transversal.

Given:

$$m\angle J = (2x - 25)^\circ$$

$$m\angle O = (x + 88)^\circ$$

What is the value of x?