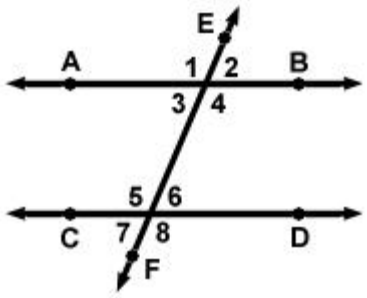
Name _____

Class _____

Exploring Parallel Lines cut by a Transversal

Use the diagram on the right to answer the following questions.



1. ∠3 and ∠6 is a pair of *alternate interior angles*

∠_____ and ∠_____ is another pair

2. ∠3 and ∠5 is a pair of *same-side interior angles*

∠_____ and ∠_____ is another pair

3. ∠3 and ∠7 is a pair of *corresponding angles*

∠_____ and ∠_____ is another pair

Run the Cabri Jr. App and open the file **TRNSVRSL** showing two parallel lines, $\overleftrightarrow{AD} \parallel \overleftrightarrow{HE}$, cut by a transversal $\overleftrightarrow{CG}$.

4. The measure of ∠***ABC*** and ∠***HFB*** are given.

a. These two angles are _____ Angles.

b. Move point ***G*** to four different positions and record your measurements in the table.

	1st position	2nd position	3rd position	4th position
m∠ABC				
m∠HFB				

c. What is the relationship between the measurements of ∠*ABC* and ∠*HFB*?

Congruent, complementary, or supplementary? _____

5. The measure of ∠***ABF*** and ∠***HFB*** are given.

a. These two angles are _____ Angles.

b. Move point ***G*** to four different positions and record your measurements in the table.

	1st position	2nd position	3rd position	4th position
m∠ABF				
m∠HFB				

c. What is the relationship between the measurements of ∠*ABF* and ∠*HFB*?

Congruent, complementary, or supplementary? _____

6. The measure of ∠***DBF*** and ∠***HFB*** are given.

a. These two angles are _____ Angles.

b. Move point ***G*** to four different positions and record your measurements in the table.

	1st position	2nd position	3rd position	4th position
m∠DBF				
m∠HFB				

c. What is the relationship between the measurements of ∠*DBF* and ∠*HFB*?

Congruent, complementary, or supplementary? _____

Conjectures

Complete the following conjectures based on your answers above.

7. For parallel lines and a transversal, if two angles are corresponding angles, then…

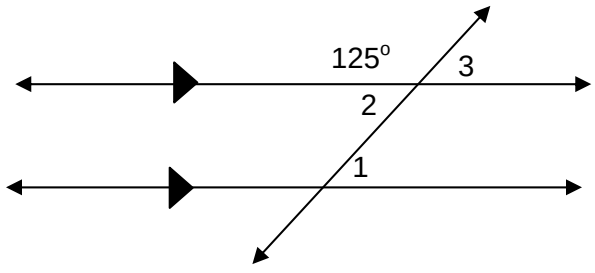
8. For parallel lines and a transversal, if two angles are alternate interior angles, then…

9. For parallel lines and a transversal, if two angles are same-side interior angles, then…

Complete the following problems.

The triangles in the middle of the lines tell us that the lines are parallel.

10. Find the measurement of ∠1, ∠2, and ∠3.



11. Find the value of ***x*** and ***y***.