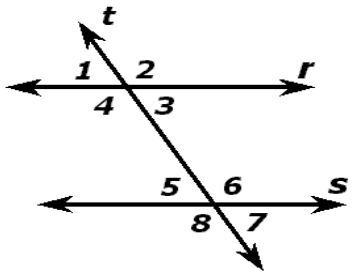
Name: _____

Unit 4 – Geometry

4.4 – Angles in Parallel Lines & Transversals



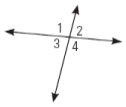
$\angle 1 =$ $\angle 3 =$ $\angle 5 =$ $\angle 7 =$

$\angle 2 =$ $\angle 4 =$ $\angle 6 =$ $\angle 8 =$

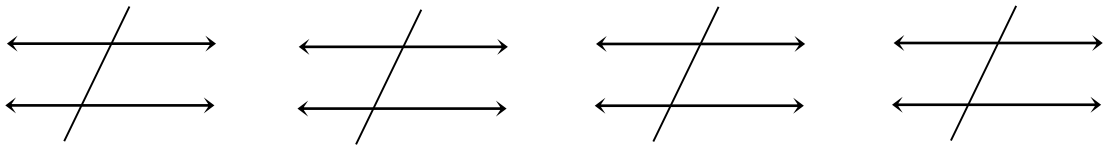
$\angle 3 + \angle 6 =$ $\angle 4 + \angle 5 =$

A pair of **Parallel Lines** cut by a **Transversal Line** create 8 angles.
The 8 angles can be sorted into 6 different groups:

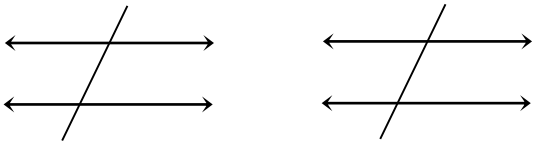
- **Vertically Opposite Angles** are <u>equal</u>:



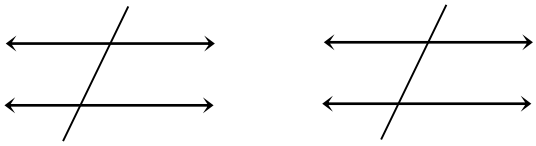
- **Corresponding Angles** are <u>equal</u>:



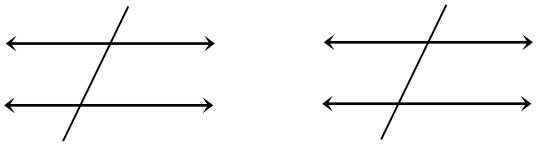
- **Alternate Interior angles** are <u>equal</u>:



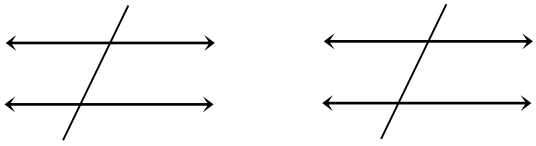
- **Alternate Exterior angles** are <u>equal</u>:



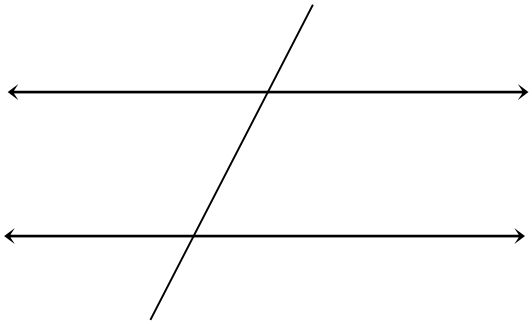
- **Interior angles on the Same side of the Transversal** (C angles) <u>add to 180°</u> :



- **Exterior angles on the Same side of the Transversal** <u>add to 180°</u> :

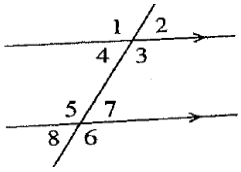


Summary



Examples

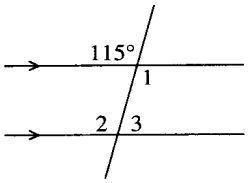
1.



Name an angle that is:

- Vertically opposite to angle 3
- Corresponding to angle 5
- Alternate interior to angle 4
- Interior on the same side of transversal to angle 7
- Corresponding to angle 6
- Alternate interior to angle 5
- Exterior on the same side of transversal to angle 8 and 2
- Alternate exterior to angle 6 and 8

2.

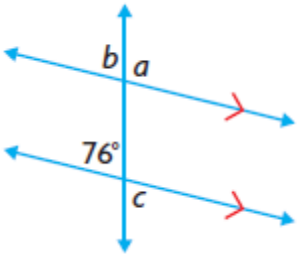


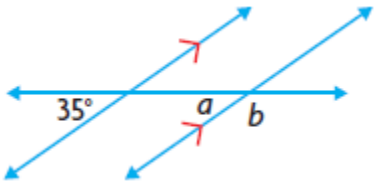
$\angle 1 =$ _____ _____

$\angle 2 =$ _____ _____

$\angle 3 =$ _____ _____

3. Determine the measures of angles a, b, and c.

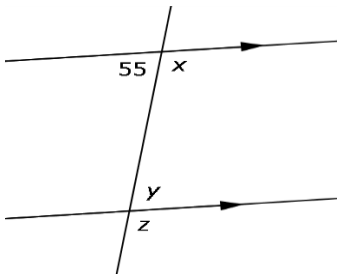




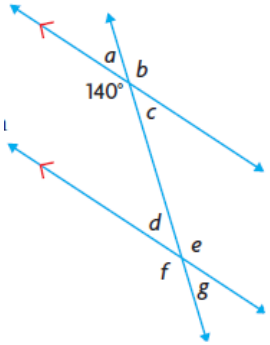
Assignment

1. Determine the measures of unknown angles:

a.

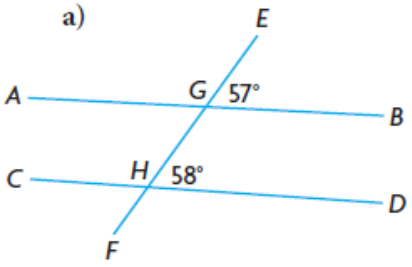


b.

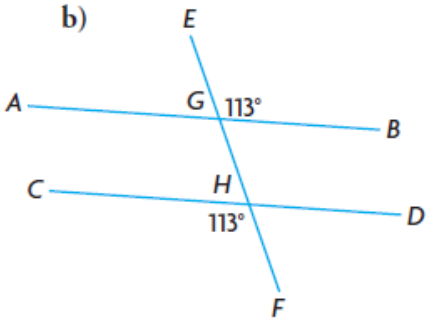


2. Determine the measures of angles G and H:

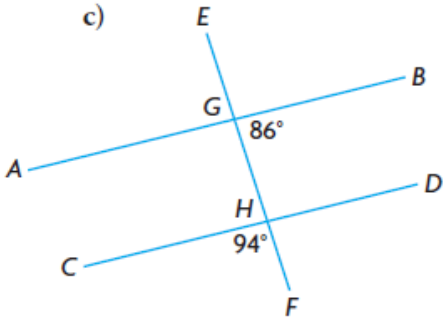
a)



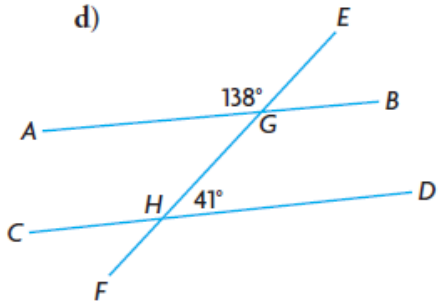
b)



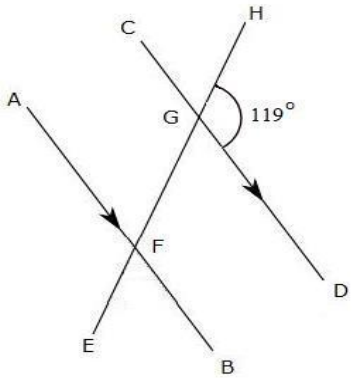
c)



d)

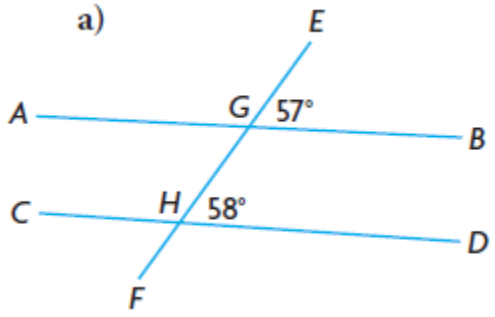


3. Determine the measures of ALL the angles you can find in the diagram below:

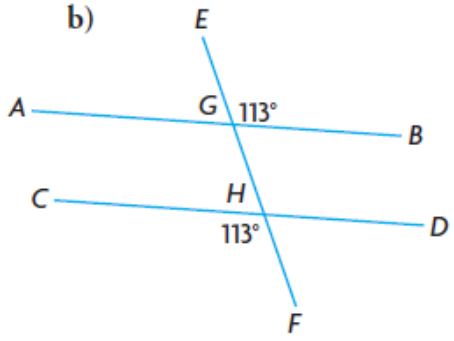


4. Determine the measures of ALL the angles you can find in the diagrams below:

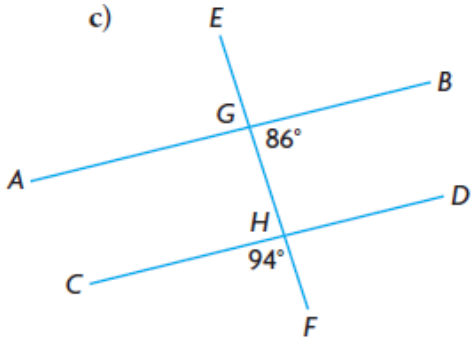
a)



b)



c)



d)