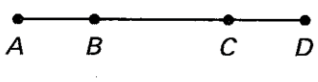
**6-2 Proofs of Vertical Angles and Parallel Lines/Transversal Angles**
**Secondary Math II**

Name:_____
Class Period:_____

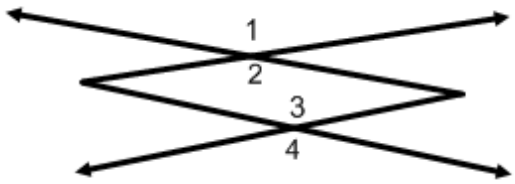
1. Give the reasons for the following statements

| | |
|---|---|
| $AB = CD$ | Given |
| $BC = BC$ | **a.** ? |
| $AB + BC = CD + BC$ | **b.** ? |
| $AB + BC = AC$ | **c.** ? |
| $CD + BC = BD$ | **d.** ? |
| $AC = BD$ | **e.** ? |



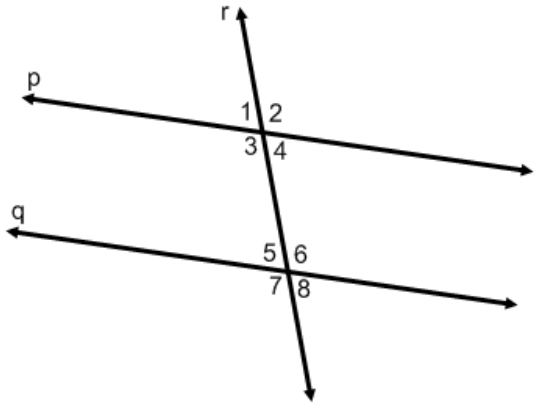

***Use either a flow chart proof or a two-column proof***

2. Given: $\angle 1 \cong \angle 4$
   Prove: $\angle 2 \cong \angle 3$




***Use the given information to determine the measures of each of the numbered angles.***

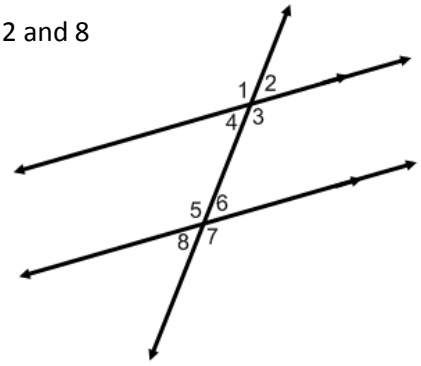
3. $p \| q$ and $m\angle 1 = 54^\circ$
   $m\angle 2 =$
   $m\angle 3 =$
   $m\angle 4 =$
   $m\angle 5 =$
   $m\angle 6 =$
   $m\angle 7 =$
   $m\angle 8 =$



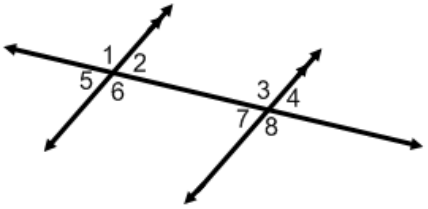
4. Suppose that two parallel lines are intersected by a transversal and all corresponding angles are supplementary. How is this possible? Sketch and label a figure to support your answer.

***Determine the relationship between the indicated angles and write a postulate or theorem that justifies your answer.***

5. Angles 2 and 8

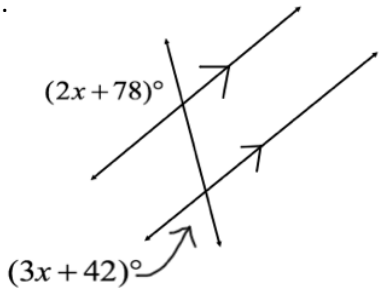



6. Angles 1 and 4

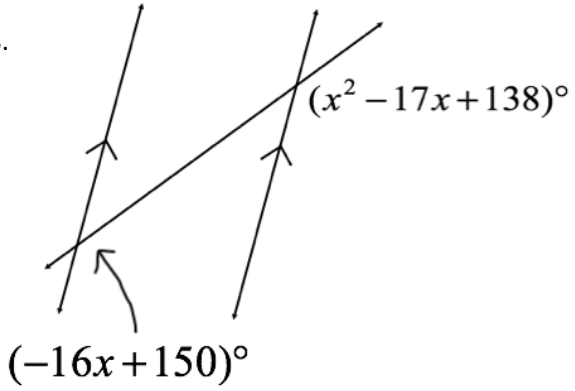



(16-17) Solve for x:

7.



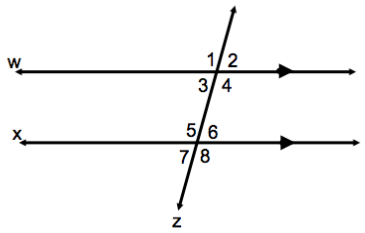

8.



***Use either a flow chart proof or a two-column to prove the following:***

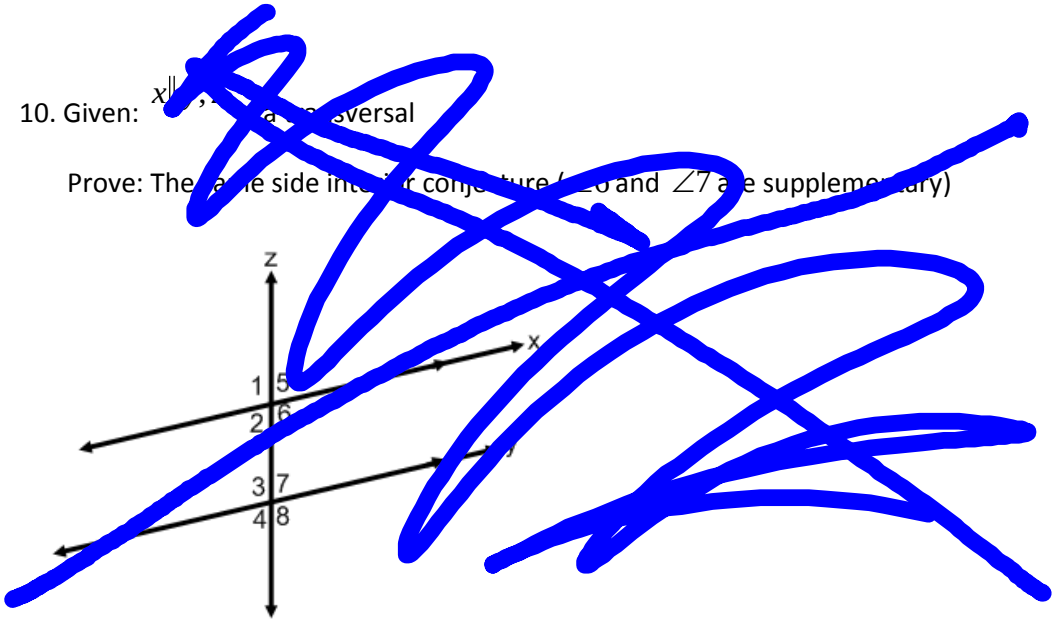
9. Given: $w \| x, z$ is a transversal

   Prove: The alternate exterior Conjecture ( Ð1 @ Ð8 )




10. Given: $x \| y$, $z$ is a transversal

    Prove: The same side interior conjecture ($\angle 6$ and $\angle 7$ are supplementary)



Selected Answer Key:

3. $m\angle 2 = 126°$
   $m\angle 5 = 54°$
6. $m\angle 1 + m\angle 4 = 180°$, Same Side Exterior Thm
8. $x = 4, -3$