



Problem 1 – Exploring Vertical Angles

1. Define **Vertical (or Opposite) Angles**.

2. Open the Cabri Jr. file VERTICAL. \overleftrightarrow{AC} intersects \overleftrightarrow{BD} at point O .
Name two pairs of vertical angles.

3. Move point B or point C to four different locations where the angles have different measures. Record $m\angle AOB$, $m\angle BOC$, $m\angle COD$, and $m\angle AOD$ for each of your four locations.

Location	1st	2nd	3rd	4th
$m\angle AOB$				
$m\angle BOC$				
$m\angle COD$				
$m\angle AOD$				

What patterns do you notice?

4. If $\angle AOD$ and _____ are vertical angles, then the $m\angle AOD$ _____.

5. If $\angle AOB$ and _____ are vertical angles, then the $m\angle AOB$ _____.

6. Based on your data from Question 3, make a conjecture about vertical angles in general.



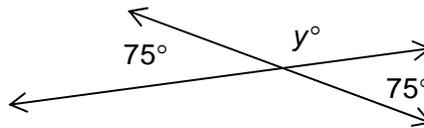
Vertical and Adjacent Angles

Problem 2 – Exploring Adjacent Angles

7. Define **Adjacent Angles**.
8. Use the file VERTICAL from Problem 1. Identify all four pair of adjacent angles.
9. Move point B or point C and make a conjecture about adjacent angles formed by two intersecting lines. Hint: You may have to do a calculation.
10. If $\angle AOB$ and _____ are adjacent angles formed by two intersecting lines, then the $m\angle AOB$ and _____ are _____.

Complete the following problems.

11. Find the value of x and y .



12. Find the value of x .

