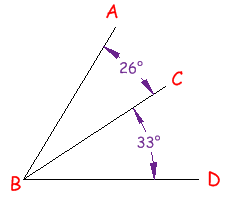
Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**SOL 8.6 Notes – Adjacent Angles**

# Adjacent Angles:

Two angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if they have a common side, a common vertex (corner point) and do not overlap.

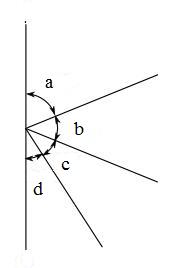
**Angle ABC is adjacent to angle CBD because:**

* **they have a common side (line CB)**
* **they have a common vertex (point B)**

## What Is and Is NOT an Adjacent Angle:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| http://www.mathsisfun.com/geometry/images/adjacent-angles2.gif |  | http://www.mathsisfun.com/geometry/images/adjacent-angles-not1.gif |  | http://www.mathsisfun.com/geometry/images/adjacent-angles-not2.gif |
| These **ARE** Adjacent Angles  They share a vertex *and* a side |  | **NOT** Adjacent Angles  they only share a vertex, *not* a side |  | **NOT** Adjacent Angles  they only share a side, *not* a vertex |

**Don't Overlap! PRACTICE:**

**The angles must not overlap.** Which of the following pairs of angles are NOT adjacent?

|  |
| --- |
| http://www.mathsisfun.com/geometry/images/adjacent-angles-not3.gif |
| **NOT** Adjacent Angles  angles a and b overlap |

# Supplementary Angles:

Two Angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if they **add up to \_\_\_\_\_\_\_\_\_\_\_\_ degrees**.

|  |  |
| --- | --- |
| These two angles (140° and 40°) are Supplementary Angles, because they add up to **180°**.  Notice that together they make a straight angle, or straight line which is 180 degrees. | http://www.mathsisfun.com/geometry/images/supplementary-angles.gif |
| **But the angles don't have to be together.**  These two are supplementary because **60° + 120° = 180°** | http://www.mathsisfun.com/geometry/images/supplementary-angles2.gif |

**FUN TRICK TO REMEMBER:**

“S” for Supplementary…. “S” makes 180!

**S**

**PRACTICE PROBLEMS:**

Two angles are supplementary and one of them is 31°  
What is the size of the other angle?

Two angles are supplementary and one of them is 127°  
What is the size of the other angle?

# Complementary Angles:

Two Angles are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ if they **add up to \_\_\_\_\_\_ degrees** (Right Angle).

|  |  |
| --- | --- |
| These two angles (40° and 50°) are **Complementary Angles**, because they add up to 90°.  Notice that together they make a right angle. | http://www.mathsisfun.com/geometry/images/complementary-angles.gif |
| But the angles don't have to be together.  These two are complementary because 27° + 63° = 90° | http://www.mathsisfun.com/geometry/images/complementary-angles2.gif |

**FUN TRICK TO REMEMBER:**

“C” for Complementary…. “C” makes 90!

**C**

**PRACTICE:**

If two angles are complementary and one of them is 77°, what is the size of the other angle?

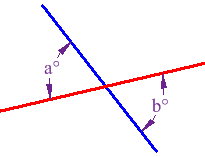
If two angles are complementary and one of them is 34°, what is the size of the other angle?

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**NOTES – SOL 8.6 – Vertical Angles**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are the angles opposite each other when two lines cross.

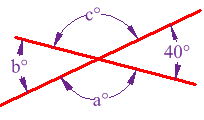
"Vertical" in this case means they **share the same Vertex** (or corner point), not the usual meaning of up-down.

In this example, a° and b° are vertical angles.

Vertical angles are ALWAYS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

## a° = b°

### EXAMPLE: Find angles a°, b° and c° below:

 Because b° is opposite 40°, it must also be \_\_\_\_\_\_\_\_\_\_.

A full circle is \_\_\_\_\_\_°, so that leaves 360°- 2×40° = 280°

Angles a° and c° are also vertical angles, so must be equal, which means they are 140° each.

Answer: **a = 140°**, **b = 40° and c = 140°**.

**PRACTICE PROBLEM: What is the measure of angles a°, b° and c° below?**

