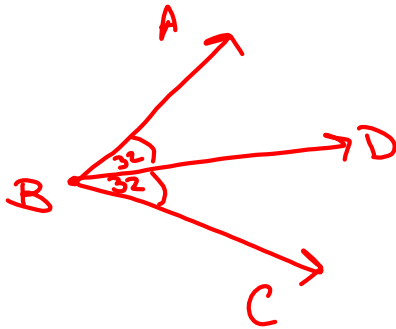


**DO NOW**

$\overrightarrow{BD}$  bisects  $\angle ABC$ . If  $m\angle ABD = 32$ , what is the  $m\angle ABC$ ?

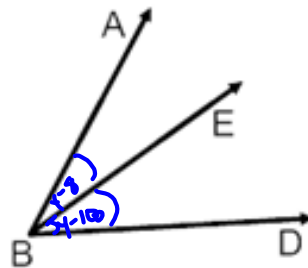


64°

Sep 12-9:53 AM

**HW Answers**

1. 70
2. 30
3.  $\angle XYZ$ ,  $\angle ZYX$ ,  $\angle Y$
4.  $x = 18$
5. 38
6.  $y = 23$
7.  $g = 29$



$$y - 8 = 5y - 100$$

$$-8 = 4y - 100$$

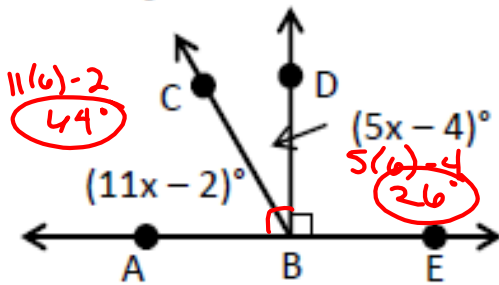
$$\frac{92}{4} = \frac{4y}{4}$$

Sep 8-9:31 AM

# Complementary

Two or more angles are **Complementary** if the sum of their measures is 90°.

**Example 1:** Find  $m\angle ABC$  and  $m\angle CBD$ .



$$11x - 2 + 5x - 4 = 90$$

$$16x - 6 = 90$$

$$\frac{16x - 6}{+6} = \frac{90}{+6}$$

$$\frac{16x}{16} = \frac{96}{16}$$

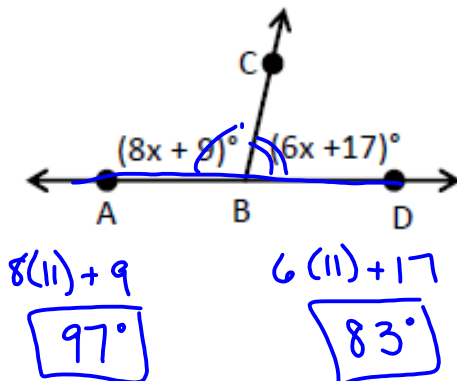
$$x = 6$$

Sep 5-12:55 PM

# Supplementary

Two or more angles are **Supplementary** if the sum of their measures is 180°.

**Example 2:** Find  $m\angle ABC$  and  $m\angle CBD$ .



$$8x + 9 + 6x + 17 = 180$$

$$14x + 26 = 180$$

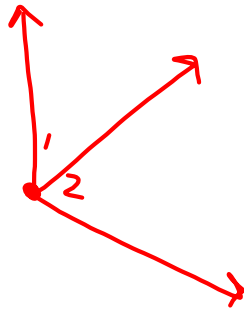
$$14x = 154$$

$$x = 11$$

Sep 5-12:56 PM

# Adjacent

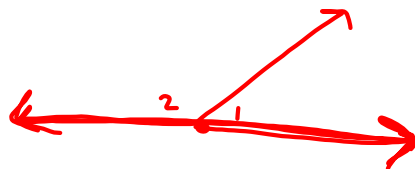
**Adjacent Angles** are two angles that share a common vertex and side, but have no common interior points.



Sep 5-12:58 PM

# Linear Pair

Two adjacent angles are a **Linear Pair** if their noncommon sides are opposite rays.



★ They are Supplementary ★

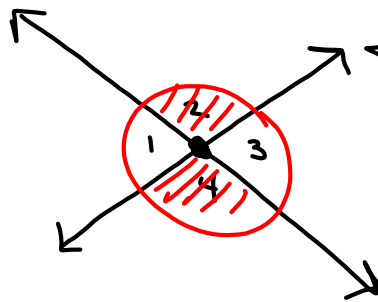
Sep 5-12:59 PM

# Vertical

Two angles are **Vertical Angles** if their sides form two pairs of opposite rays. (no common side)

$\angle 2$  and  $\angle 4$

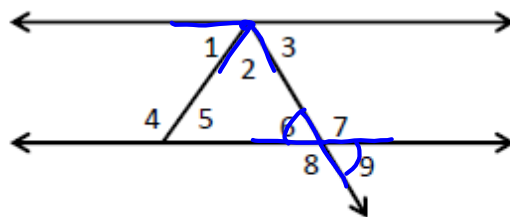
$\angle 1$  and  $\angle 3$



Vertical  $\angle$ 's  
are  $\cong$   $\star$

Sep 5-12:59 PM

**Example 3:** Use the diagram to determine whether the angles are adjacent, vertical, a linear pair, or none of the above.



a)  $\angle 1$  and  $\angle 2$  adjacent

b)  $\angle 4$  and  $\angle 5$  linear pair

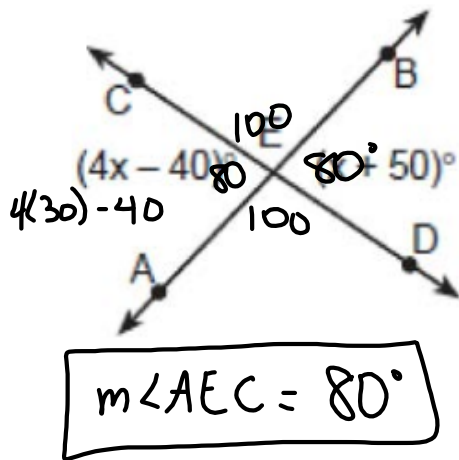
c)  $\angle 7$  and  $\angle 9$  linear pair

d)  $\angle 6$  and  $\angle 9$  vertical

e)  $\angle 2$  and  $\angle 6$  none

Sep 5-12:59 PM

In the accompanying diagram,  $\overleftrightarrow{AB}$  and  $\overleftrightarrow{CD}$  intersect at  $E$ . If  $m \angle AEC = 4x - 40$  and  $m \angle BED = x + 50$ , find the number of degrees in  $\angle AEC$ .



Vertical Angles  
are  $\cong$ !

$$4x - 40 = x + 50$$

$$3x = 90$$

$$x = 30$$

Sep 8-9:37 AM