

ESSENTIAL QUESTION: How do you identify complementary and supplementary angles?

QUESTIONS:

- ① Define
- ② What is the difference between supp. and comp. angles?

VOCABULARY:

**Complementary Angles**

2 angles whose sum =  $90^\circ$

**Supplementary Angles**

2 angles whose sum =  $180^\circ$

\* They do NOT have to be adjacent

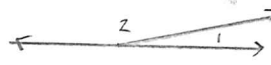
**Linear Pair of Angles**

Adjacent supplementary angles

**Vertical Angle Pair** → kitty-corner  $\angle$

2 angles whose sides form 2 pairs of opposite rays

$\angle 1$  and  $\angle 2$



$\angle 3 \& \angle 5$  OR  $\angle 4 \& \angle 6$

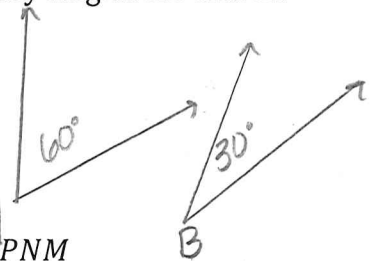


A1. Sketch and label each of the following described angle pairs.

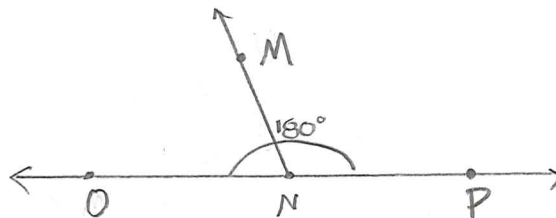
a. Vertical Angles 1 and 2.



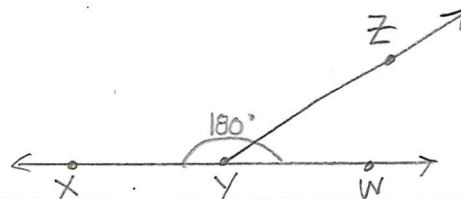
b. Complementary Angles  $\angle B$  and  $\angle Y$



c. Adjacent Supplementary Angles  $\angle MNO$  and  $\angle PNM$



d. Linear Pair of Angles,  $\angle XYZ$ ,  $\angle WYZ$



① Sketch the described angles.

② What are:

- a) vertical
- b) complementary
- c) adjacent
- d) supplementary
- e) Linear pair
- ... angles?

SUMMARY:

Complementary  $\angle$ 's

Sum =  $90^\circ$

Supplementary  $\angle$ 's

Sum =  $180^\circ$

\* They do NOT have to be adjacent.

QUESTIONS:

Give the complement and/or supplement of the  $\angle$

**A2. Give the supplement angle measure and the complement angle of the angle measures below.**

a.  $80^\circ$       supp:  $100^\circ$   
                     comp:  $10^\circ$

b.  $44^\circ$       supp:  $136^\circ$   
                     comp:  $46^\circ$

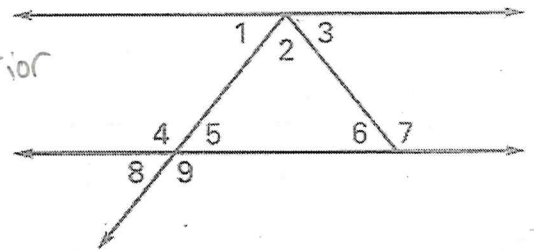
c.  $65.7^\circ$       supp:  $114.3^\circ$   
                     comp:  $24.3^\circ$

d.  $115^\circ$       supp:  $65^\circ$   
                     comp: Not possible  
                              $115 > 90$

Name the type of angle

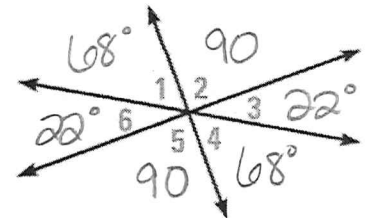
**A3. Use the diagram to describe the type of angle pairs.**

- a.  $\angle 4$  and  $\angle 5$  Linear pair
- b.  $\angle 3$  and  $\angle 6$  Alternate Interior
- c.  $\angle 5$  and  $\angle 8$  Vertical
- d.  $\angle 1$  and  $\angle 2$  and  $\angle 3$   
     Linear Triple



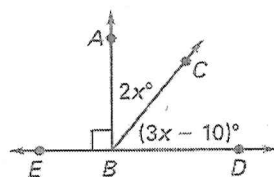
**A4. Use the figure to find the numbered angles if  $m\angle 6 = 22^\circ$  and  $m\angle 4 = 68^\circ$ .**

$m\angle 1 = 68^\circ$        $m\angle 2 = 90^\circ$        $m\angle 3 = 22^\circ$   
 $m\angle 4 = 68^\circ$        $m\angle 5 = 90^\circ$        $m\angle 6 = 22^\circ$



① Find the missing angle measure

**A5. Find the value of x.**

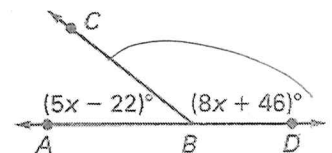


$$2x + 3x - 10 = 90$$

$$5x = 100$$

$$x = 20$$

**A6. Find the  $m\angle CBD$  using algebra.**



$$5x - 22 + 8x + 46 = 180$$

$$8x + 46 + 13x + 24 = 180$$

$$8(12) + 46 = 142$$

$$13x = 156$$

$$x = 12$$

② Set up an equation to solve for x in order to find the angle measure