

Name: Key

Angle Relationships: Review – Day 4

Directions: Determine what concept you are using and write the justification as part of your work.

Vertical angles are congruent

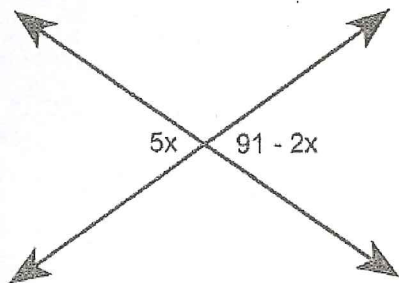
Linear pairs are supplementary

Complementary angles add to = 90

Supplementary angles add to = 180

Angle bisector cuts an angle into 2 congruent parts.

1.) Find x.



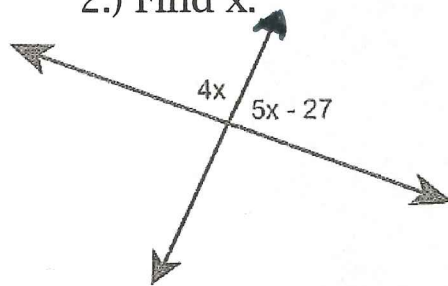
Vertical \angle s are \cong

$$\begin{array}{r} 5x = 91 - 2x \\ +2x \quad +2x \end{array}$$

$$7x = 91$$

$$\boxed{x = 13}$$

2.) Find x.



linear pairs are suppl.

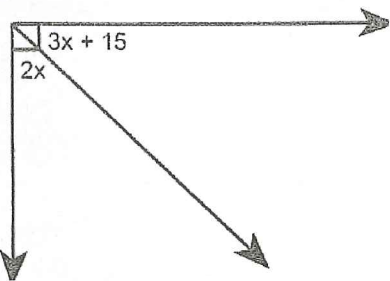
$$4x + 5x - 27 = 180$$

$$\begin{array}{r} 9x - 27 = 180 \\ +27 \quad +27 \end{array}$$

$$\frac{9x}{9} = \frac{207}{9}$$

$$\boxed{x = 23}$$

3.) Find x.



Compl. \angle s add to = 90

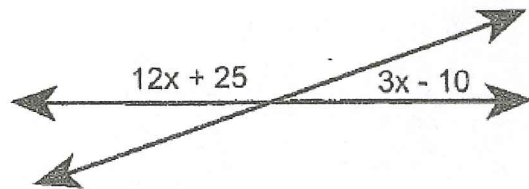
$$2x + 3x + 15 = 90$$

$$\begin{array}{r} 5x + 15 = 90 \\ -15 \quad -15 \end{array}$$

$$5x = 75$$

$$\boxed{x = 15}$$

4. Find x.



linear Pairs are suppl.

$$12x + 25 + 3x - 10 = 180$$

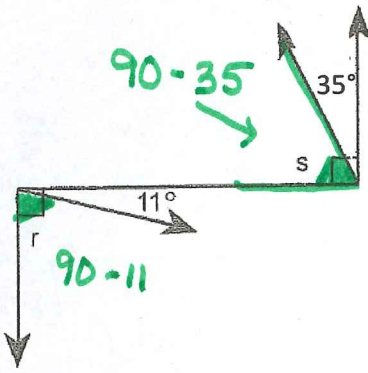
$$\begin{array}{r} 15x + 15 = 180 \\ -15 \quad -15 \end{array}$$

$$\frac{15x}{15} = \frac{165}{15}$$

$$\boxed{x = 11}$$

Detailed Angles Practice: Find the value of the variables.

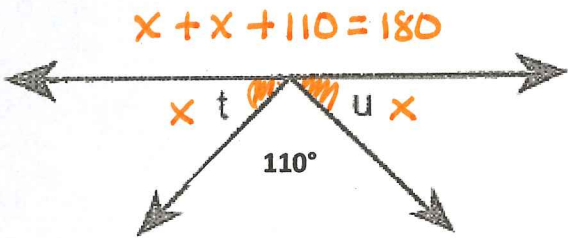
5.



$$r = \underline{79^\circ}$$

$$s = \underline{55^\circ}$$

6.



$$\angle t \cong \angle u$$

$$t = \underline{35^\circ}$$

$$u = \underline{35^\circ}$$

$$x + x + 110 = 180$$

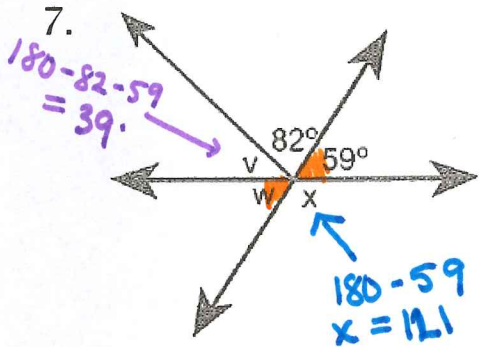
$$2x + 110 = 180$$

$$-110 \quad -110$$

$$2x = 70$$

$$x = 35$$

7.

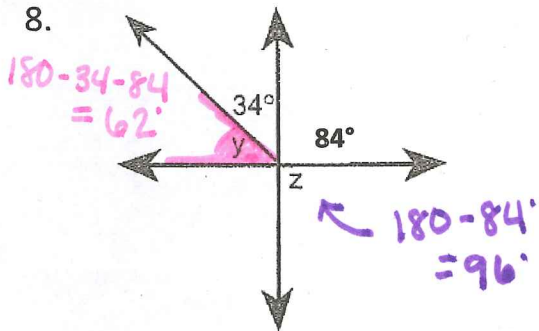


$$v = \underline{39^\circ}$$

$$w = \underline{59^\circ}$$

$$x = \underline{121^\circ}$$

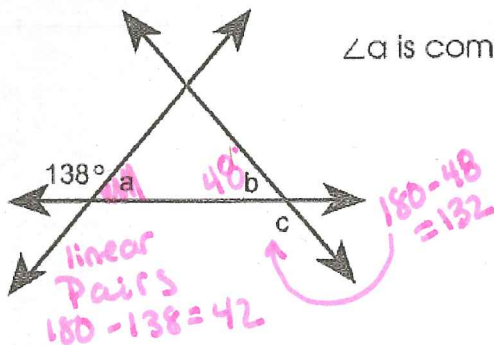
8.



$$y = \underline{62^\circ}$$

$$z = \underline{96^\circ}$$

9.



$\angle a$ is complementary to $\angle b$

$$a = \underline{42^\circ}$$

$$b = \underline{48^\circ}$$

$$c = \underline{132^\circ}$$

$$\angle a + \angle b = 90$$

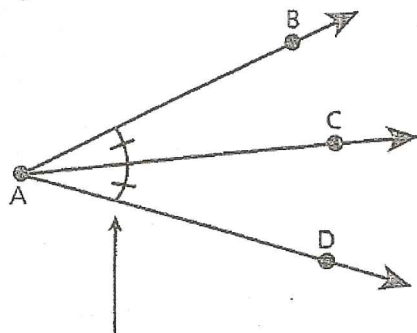
$$42 + b = 90$$

$$-42 \quad -42$$

$$b = 48$$

Angle Bisector Review

An angle bisector is a segment or ray in the interior of an angle that divides it into two congruent angles.



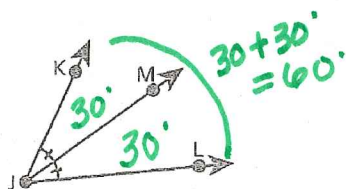
The matching arcs identify congruent angles.

Ray AC bisects angle BAD.
 \overrightarrow{AC} bisects $\angle BAD$

$$m\angle BAC = m\angle CAD$$

If $m\angle BAD = 42^\circ$,
 then $m\angle BAC = 21^\circ$
 and $m\angle CAD = 21^\circ$.

Example A.



\overrightarrow{JM} bisects $\angle KJL$.

$$\angle KJM = \angle MJL$$

If $m\angle MJL = 30^\circ$, then

$$m\angle KJL = 60^\circ \text{ and}$$

$$m\angle KJM = 30^\circ$$

Example B. For questions 1-5, use the figure at the right to complete each statement.

*(picture is obviously not drawn to scale)
 (- Picture should be familiar w/ different degree measures no matter if drawn to scale)*

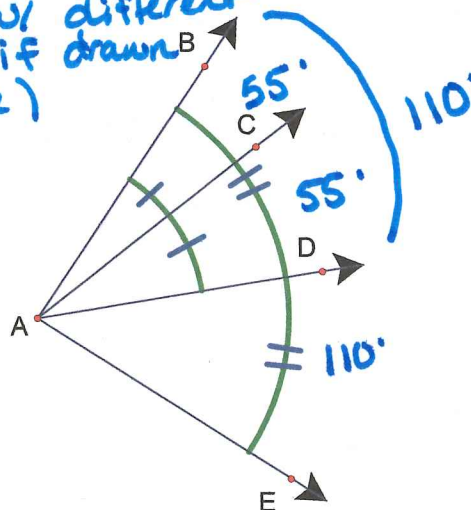
1. A is the Vertex of $\angle BAE$.

2. \overrightarrow{AD} is the angle bisector of $\angle BAE$.

3. \overrightarrow{AC} is the angle bisector of $\angle BAD$.

4. If $m\angle BAC = 55^\circ$ then $m\angle CAE = 165^\circ$.

5. $\angle DAB \cong \angle DAE$.



Example C. \overline{BE} is an angle bisector of $\angle ABC$ and \overline{BD} is an angle bisector of $\angle EBC$

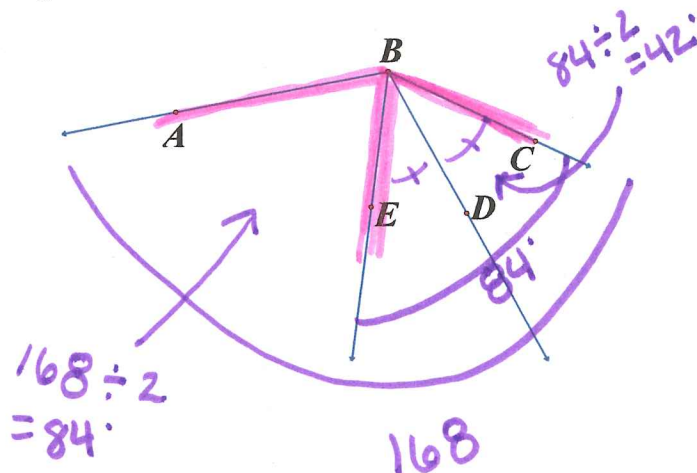
If $\angle ABC = 168^\circ$ Find the measures of

$\angle ABE = \underline{84^\circ}$

$\angle EBC = \underline{84^\circ}$

$\angle EBD = \underline{42^\circ}$

$\angle CBD = \underline{42^\circ}$



HOMEWORK: You have the option to do ALL questions if you would like extra practice, however, you are required to complete all of the following.

Pg 33: Determine Missing Angles

#s 1-4

Pg 34: Angles and Algebra

#s 1-2

*******READ THIS!!!!!!********Must show ALL work on the worksheet. If you run out of room, you MUST show your work on a separate sheet of paper and bring it with you tomorrow. You will not earn credit if you do not have work shown. DO NOT leave any work at home.*

Pg 35: More Applications of Algebra

#s 1-3

*******READ THIS!!!!!!********Must show ALL work on the worksheet. If you run out of room, you MUST show your work on a separate sheet of paper and bring it with you tomorrow. You will not earn credit if you do not have work shown. DO NOT leave any work at home.*

Pg 47: Angle Bisectors

#s 4-10