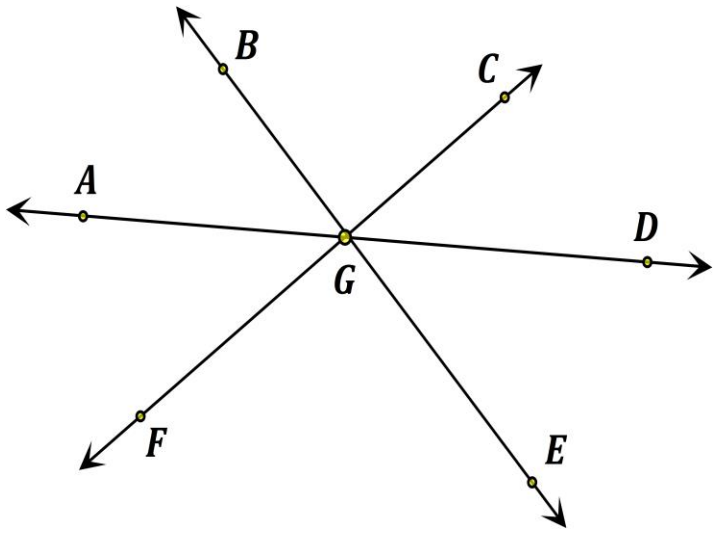
Name: _____
Date: _____ Period:_____

# Geometry Unit 2 - Day 1 - Points Lines and Planes Homefun

**Use the figure to the right to answer the following questions.**




**1.** Write two other names for $\overleftrightarrow{BG}$

**2.** Write two lines going through point G.

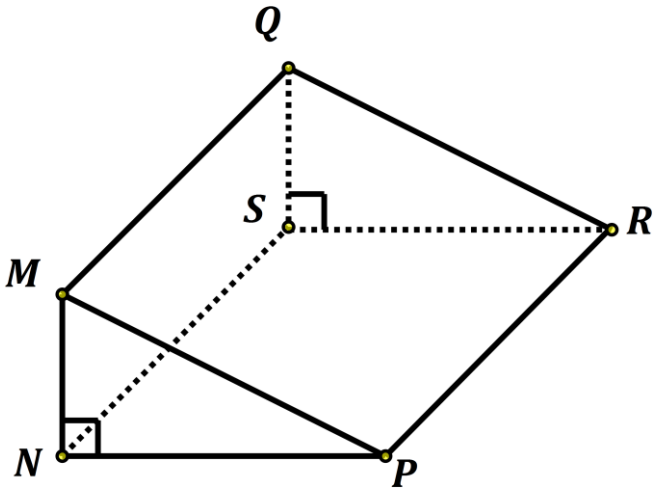
**3.** Name a point not on the line $\overleftrightarrow{AD}$

**4.** Name three collinear points.

**5.** Name three non collinear points.

**6.** Are all the points coplanar? Explain.

**Use the figure to the right to answer the following questions.**




**7.** Name the three line segments that intersect at point N.

**8.** What do plane *MPRQ* and plane *NMP* have in common?

**9.** Name two coplanar planes (if possible).

**10.** Name the two planes that share $\overleftrightarrow{SN}$

**11.** Name three collinear points (if possible).

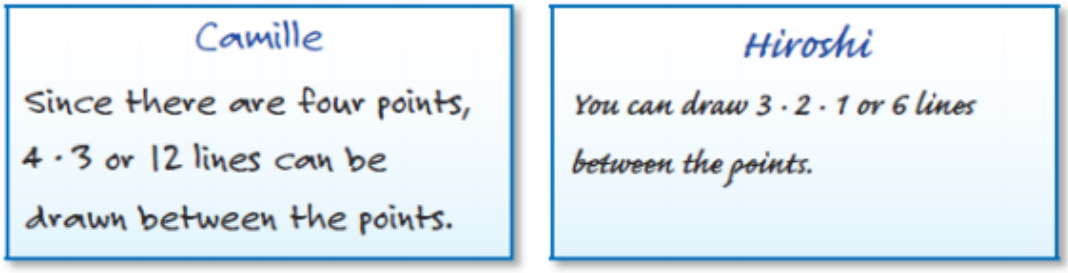
**Draw and label a figure for each situation described.**

**12.** Lines $\ell$, $m$, *and* $j$ intersecting at $P$.

**13.** Plane $W$ that contains line $y$.

**14.** Points $A$, $B$, $C$, and $D$ are noncollinear.

**15)** **FIND THE ERROR** Camille and Hiroshi are trying to determine how many lines can be drawn between four points. Is either of them correct? Explain your reasoning.



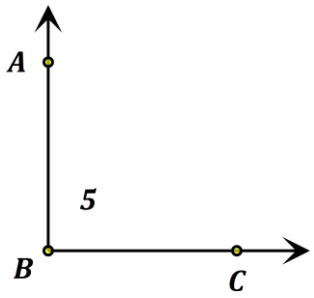

**a)** Camille is correct.
**b)** Hiroshi is correct.
**c)** They are both correct.
**d)** Neither of them are correct.

Name: _____
Date: _____ Period:_____

# Geometry Unit 2 - Day 2 - Angle Basics

**Name each angle in four ways. Then identify its vertex and its sides.**

**1.**

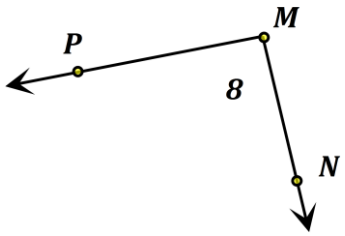



_____ _____ _____ _____

**Sides:** _____ _____

**Vertex:** _____

**2.**

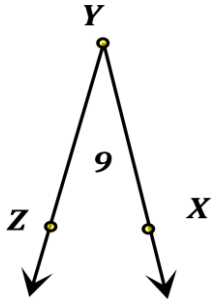



_____ _____ _____ _____

**Sides:** _____ _____

**Vertex:** _____

**3.**



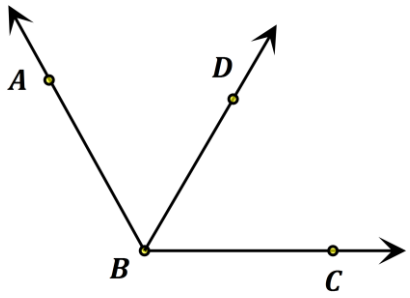

_____ _____ _____ _____

**Sides:** _____ _____

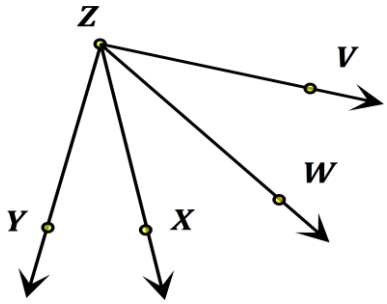
**Vertex:** _____

**In the following diagrams, give the total number of angles in the diagram.**

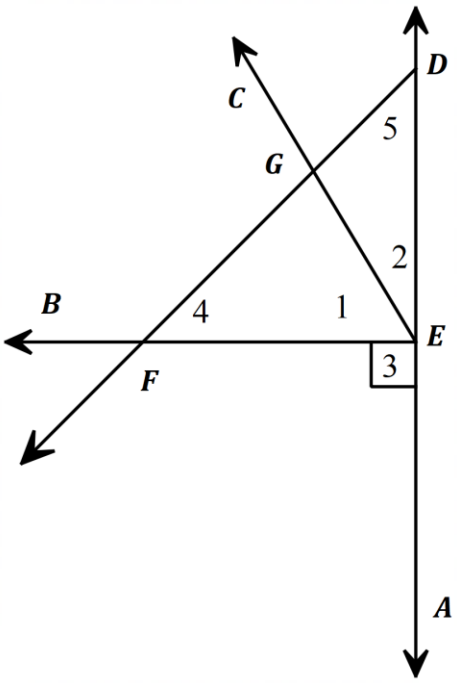
**4.**




**5.**




**Use the diagram to the right to find the following.**




**6.** Name the vertex of $\angle 2$

**7.** Name the vertex of $\angle ADF$

**8.** Name two other ways to write $\angle 1$

**9.** Name the right angle in two different ways.

**10.** Name an angle that appears to be obtuse.

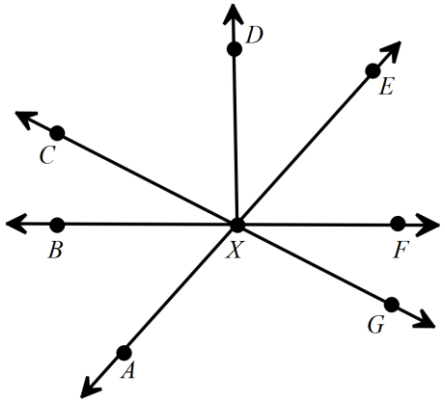
**11.** Excluding straight angles, how many angles are shown in the figure?

A. 7

B. 18

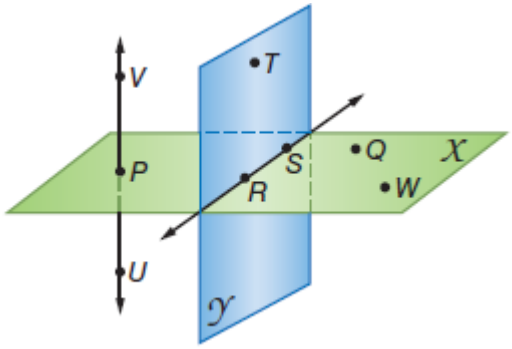
C. 19

D. 21




## Mixed Review

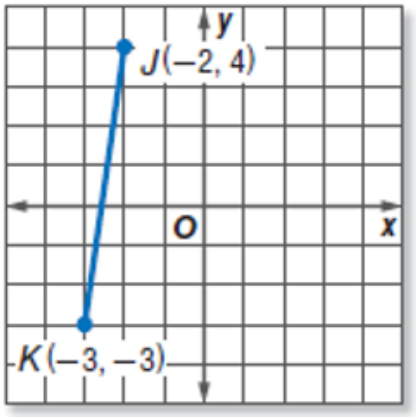
**Use the diagram to the right for 1 – 3.**




1. Name another point that is collinear with points $U$ and $V$.
2. What is another name for plane $\mathcal{Y}$?
3. Name a line that is coplanar with points $P$, $Q$, and $W$.

**Mixed Review: For 4 – 5, find the midpoint and length of each segment.**

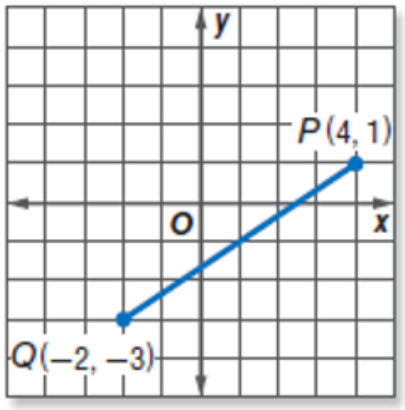
**5.**




$D$: _____

$M$: _____

**6.**




$D$: _____

$M$: _____

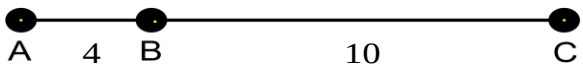
**Name:** _____

**Date:** _____ **Period:** _____

# Geometry Unit 2 - Day 3 – Linear Measure

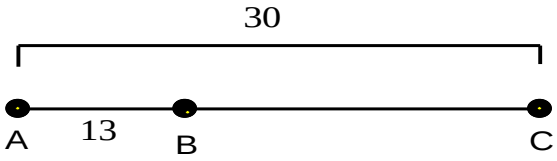
**Directions: Find the Measure of the stated segment.**

**1. AC =** _____

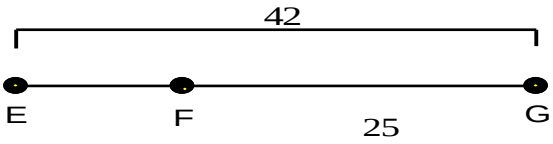



**2. DC =** _____

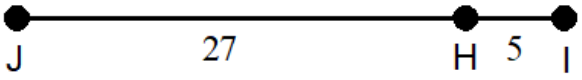

**3. BC =** _____



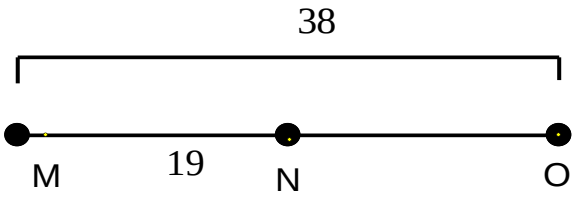

**4. EF =** _____




**5. JI =** _____

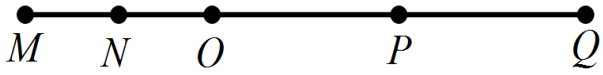



**6. NO=** _____



**In the diagram below, $MQ = 30$, $MN = 5$, $MN = NO$, and $OP = PQ$. Find the following pieces.**

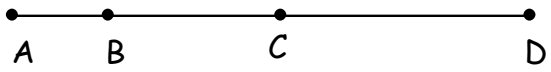
**7. MP**




**8. NP**

**9. NQ**

**For 10 – 12, use the diagram, and that $AD = 24, AB = 5, BC = 9$.**




**10. Find CD**

**11. Find BD**

**12. Find AC**

**13.** Suppose that $B$ is in between $A$ and $C$. If $AC = 36$, which of the following is not a possibility for AB (select **all** that apply)?

**a)** $-5$ **b)** 1 **c)** 15.4 **d)** 29 **e)** 37

## Mixed Review:

## Solve the following equations and check it.

**14.** $x^2 - 5x - 14 = 0$

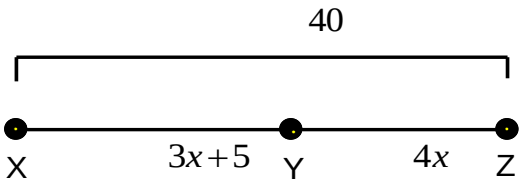
**15.** $x^2 - x - 56 = 0$

**Name:** _____
**Date:** _____ **Period:** _____

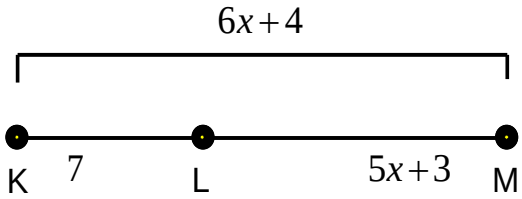
# Geometry Unit 2 - Day 4 – Linear Measure Part II

**Directions: Use the Segment Addition Postulate to find the value of each variable or segment measure.**

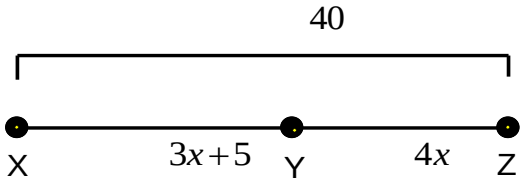
**1.** $x =$ _____



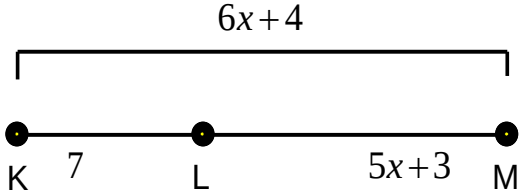

**2.** $x =$ _____




**3.** ***XY*=** _____




**4.** ***LM*=** _____




**5.** Given the diagram for the right, which of the following is true?

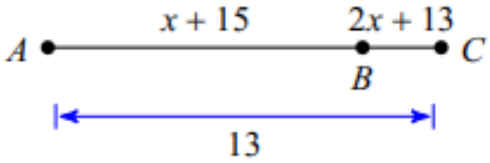
**a)** $x = 5$

**b)** $x = -5$

**c)** $AB = 20$

**d)** $BC = 23$

**e)** None of the above

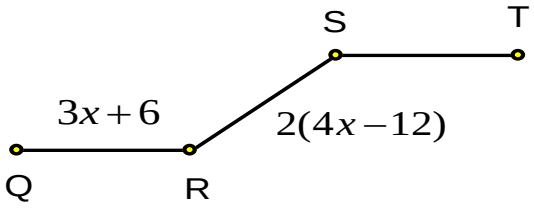



**Suppose M is between L and N. ML= 3x + 10, MN= 75 – 10x, and LN= 50. Find the length of each segment.**

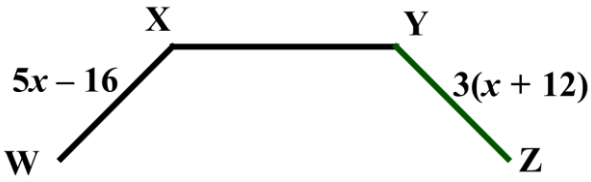
**7.** ML =

**8.** MN =

**9.** **Given:** $\overline{ST} \cong \overline{SR}, \overline{QR} \cong \overline{SR}$ **Solve for *x*.**




**10.** **Given:** $\overline{XY} \cong \overline{YZ}, \overline{WX} \cong \overline{XY}$ **, find XY**




**Mixed Review: Determine if the following are true or false.**

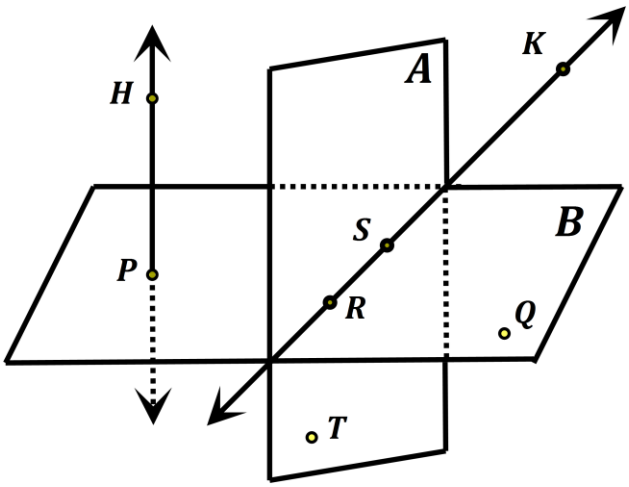
**11.** *R, S,* and *T* are collinear.

**12.** There is only one plane that contains all the points R, S, and Q.

**13.** Plane *A* and plane TRS are the same plane.

**14.** Plane *B* contains $\overleftrightarrow{PH}$

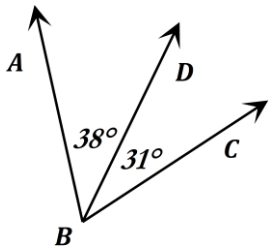
**15.** Points *R, S,* and *K* make a plane.



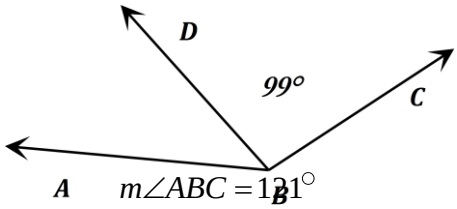
# Geometry Unit 2 - Day 5 - Angle Addition Postulate

**Find the following for each example.**

**1.** $m\angle ABC =$ _____

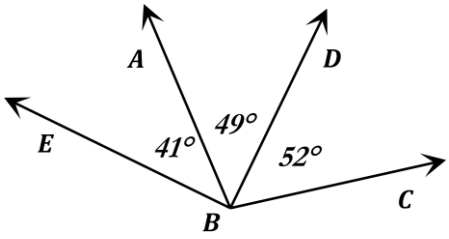



**2.** $m\angle ABD =$ _____




$m\angle ABC = 131^\circ$

**3.** $m\angle EBC =$ _____

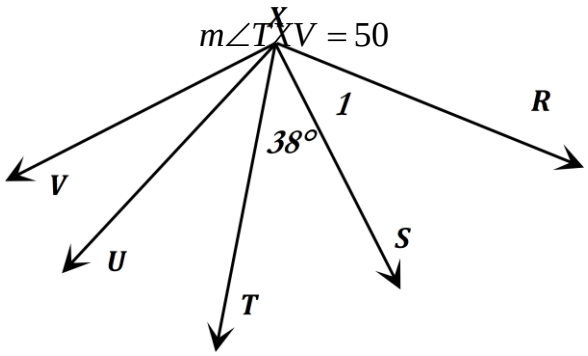



**Use the diagram to the right for the following.**

$m\angle RXT = 82$

$m\angle UXS = 70$

$m\angle TXV = 50$




**4.** $m\angle 1 =$ _____

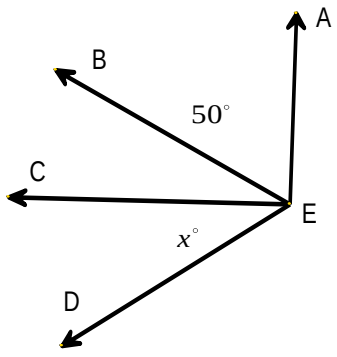
**5.** $m\angle TXU =$ _____

**6.** $m\angle VXU =$ _____

**7.** $m\angle RXU =$ _____

**8.** $m\angle VXS =$ _____

**9.** $m\angle RXV =$ _____



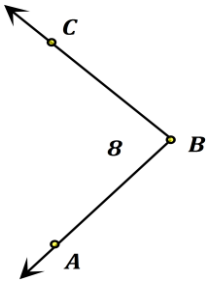
**10.** Given: $m\angle DEA = 170$, , $\angle DEC \cong \angle CEB$. Find $m\angle CEB$

**11.** Let $Q$ be in the interior of $\angle POR$. $m\angle POQ = x + 4$, $m\angle QOR = 2x - 2$, and $m\angle POR = 26$. Find the value of x, and $m\angle QOR$ (Hint: draw a picture first).

**12.** Let $W$ be in the interior of $\angle XYZ$. $m\angle XYZ = 180°$, $m\angle XYW = (a + 1)°$ and $m\angle WYZ = (5a - 13)°$ Which of the following are true statements (select all that apply).

**a)** $a = \frac{7}{2}$
**b)** $a = 5$
**c)** $a = 32$
**d)** $m\angle XYW = 33°$
**e)** $m\angle XYW = 6°$
**f)** $m\angle WYZ = 147°$
**g)** $m\angle WYZ = 12°$

**MIXED Review:**
**Name each angle in four ways. Then identify its vertex and its sides.**




**13.** _____ _____ _____ _____ **Sides:** _____ _____

**Vertex:** _____

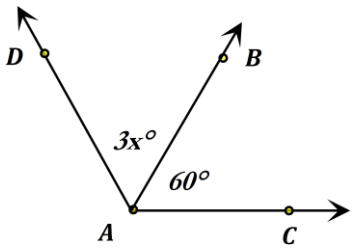
**14.** X is between A and C and C is between X and D. If $AX = XC$, $AD = 42$, and $CD = 16$, find the length of AX**.** *Hint: Draw the picture and label the lengths.*

Name: _____
Date: _____ Period:_____

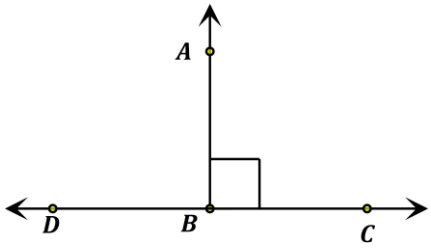
# Geometry Unit 2 - Day 6 – Vertical Bisectors

**For 1 – 5, AB is an angle bisector. Find the following.**

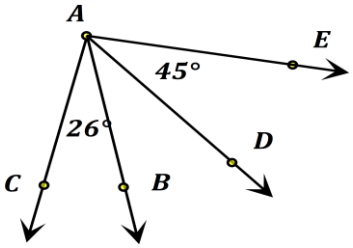
**1.** $x =$ _____



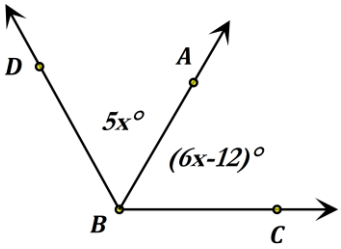

**2.** $m\angle ABD =$ _____



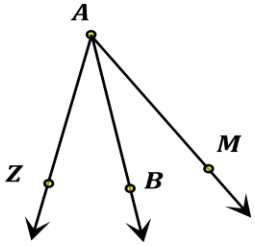

**3.** $m\angle DAB =$ _____




**4.** $m\angle CBA =$ _____

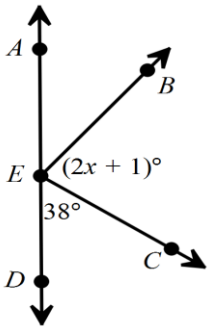



**5.** $m\angle ZAB =$ _____ if $m\angle ZAM = 2b - 4, m\angle BAM = 2b - 36.$



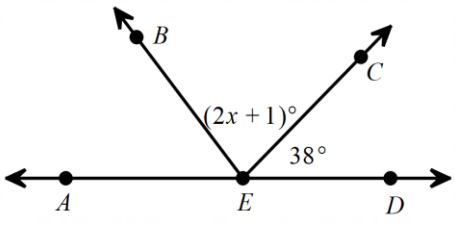

**For 6 – 7, $\overrightarrow{EB}$ is the angle bisector of $\angle AEC$.**

**6.** Find $m\angle BEC$.



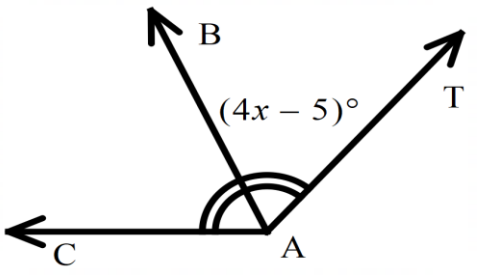

**a)** $m\angle BEC = 18.5°$
**b)** $m\angle BEC = 19°$
**c)** $m\angle BEC = 38°$
**d)** $m\angle BEC = 71°$

**7.** Find $x$




**a)** $x = 35$
**b)** $x = 51.5$
**c)** $x = 70.5$
**d)** $x = 142$

**8.** Find the value that would make $\overrightarrow{AB}$ an angle bisector of $\angle CAT$ and $m\angle CAT = 150°$.




**For 9 – 12, decide if the following are true or false. If they are false, explain why.**

**9.** Every angle has exactly one angle bisector.

**10.** You can assume a ray is an angle bisector.

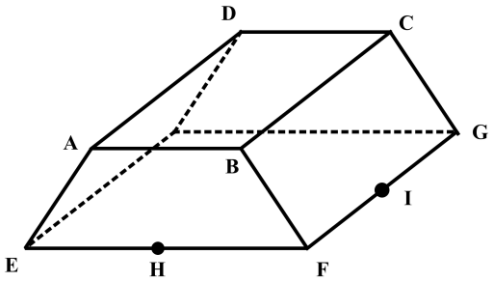
**11.** If two angles are congruent, then they share an angle bisector.

**12.** Straight angles cannot have an angle bisector.

**Mixed Review: Use the diagram for the following**

**13.** Name three collinear points.

**14.** Name three non-collinear points.

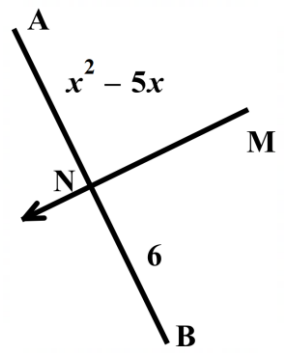



**15.** Name a point that is coplanar with points B, C and F.

Name: _____
Date: _____ Period:_____

# Geometry Unit 2 - Day 7 – Segment Bisectors

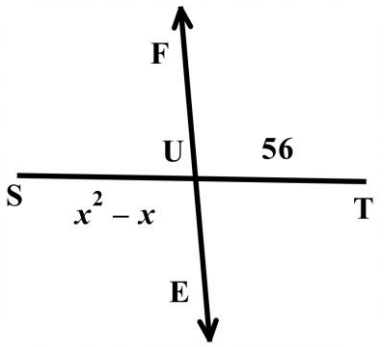
**For 1 – 2, $\overleftrightarrow{MN}$ is a segment bisector of $\overline{AB}$.**




**1.** Find $x$

**2.** Find $AB$

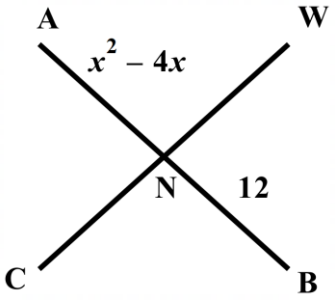
**For 3 and 4, $\overleftrightarrow{EF}$ is a segment bisector of $\overline{ST}$. Solve for $x$.**




**3.** Find $x$

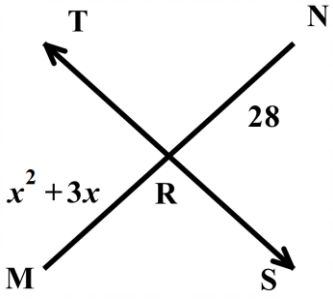
**4.** Find $US$

**5.** What value(s) of $x$ would make $\overline{CW}$ a segment bisector of $\overline{AB}$




**6.** What value of $x$ would make $\overline{TS}$ a segment bisector of $\overline{MN}$

**a)** $x = -4$
**b)** $x = 4$
**c)** $x = 7$
**d)** $x = 11$



**Mixed Review:**

**7.** How many points make a plane (select **all** that are true)?

**a)** Just 1 point is needed
**b)** Any 2 points
**c)** 3 collinear points
**d)** 3 non-colinear points
**e)** 4 non-collinear points
**f)** 4 collinear points

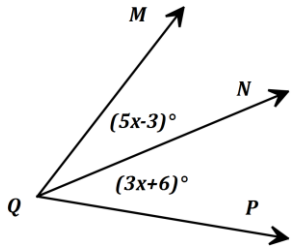
**For 8 – 10 all use the same diagram.**

**8.** Draw a picture to illustrate the following: $K$ is in between $J$ and $M$, and $L$ is in between $K$ and $M$, and $\overline{JK} \cong \overline{KL} \cong \overline{LM}$

**9.** Find $JK$ if $JM = 21$

**10.** Find MK

**11.** Find the $m\angle PQM = 67^{O}$, *find* $m\angle MQN$




**12.** How do you label the following ray?

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# Geometry Unit 2 - Day 8 – Putting it All Together

**For 1 and 2, assume that $Y$ is in between $X$ and $Z$. $XY = 2n - 8$, $YZ = 4n - 9$, and $XZ = 10$.**

**1.** Find $n$

**2.** Find $XY$

**For 3 – 4, suppose that $M$ is in between $L$ and $N$. $ML = 3x + 10$, $MN = 75 - 10x$, and $LN = 50$.**

**3.** Find $x$

**4.** Find $ML$

**For 5 – 6, use the given information. $G$ is in between $A$ and $B$, $\overline{AG} \cong \overline{GB}$, $AG = x^2 - 4x$, $GB = 3x - 6$, and $AB = 24$.**

**5.** Find $x$

**6.** Find $AG$

**For 7 – 8, let $Q$ be in the interior of $\angle POR$. $m\angle POQ = (x + 4)°$, $m\angle QOR = (2x - 2)°$, and $m\angle POR = 26°$. Find the following.**

**7.** Find $x$

**8.** $m\angle QOR$

**For 10 – 11, $D$ is in the interior of $\angle ABC$. $\angle ABC$ is a right angle, $m\angle ABD = (45 - 7x)°$, $m\angle DBC = (25 + 3x)°$. Find the following.**

**9.** Find $x$

**10.** $m\angle DBC$

**For 11 – 12, $K$ is between $J$ and $L$. If $JK = x^2 - 4x$, $KL = 3x - 2$, and $JL = 28$. Find the following.**

**11.** JK

**12.** KL

**13.** $D$ is in the interior of $\angle ABC$. $\overrightarrow{BD}$ is an angle bisector of $\angle ABC$. $m\angle ABD = (x^2 - 5x)°$ and $m\angle DBC = (5x - 9)°$. Find $m\angle ABC$.

a) $m\angle ABC = 9°$
b) $m\angle ABC = 18°$
c) $m\angle ABC = 36°$
d) $m\angle ABC = 72°$

**14.** $X$ is in between $A$ and $C$. $C$ is in between $X$ and $D$. If $AX = XC$, $AD = 42$, and $CD = 16$. Which of the following is the length of $AX$?

a) $XY = 11$
b) $XY = 12$
c) $XY = 13$
d) $XY = 14$
e) None of the above

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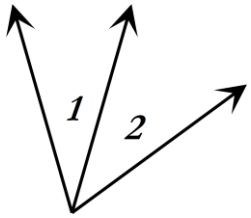
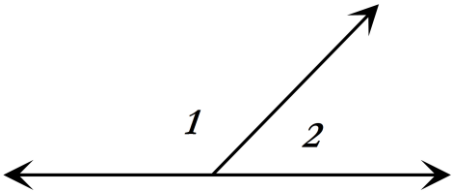
# Geometry Unit 2 - Day 9 - Angle Relationships

**Describe the relationship of angles 1 and 2 in as many ways as possible using Supplementary, Complementary, Linear Pair, and/or Adjacent Angles.**

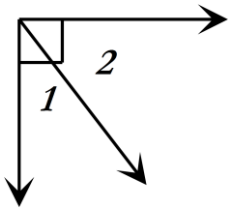
**1.**



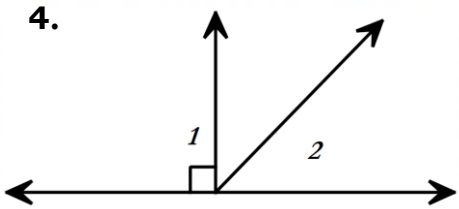

**2.**



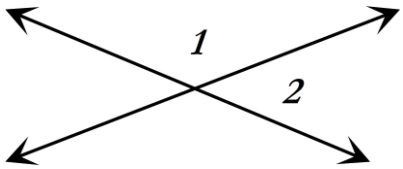

**3.**



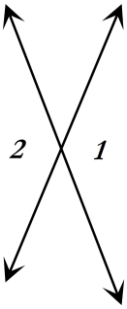

**4.**



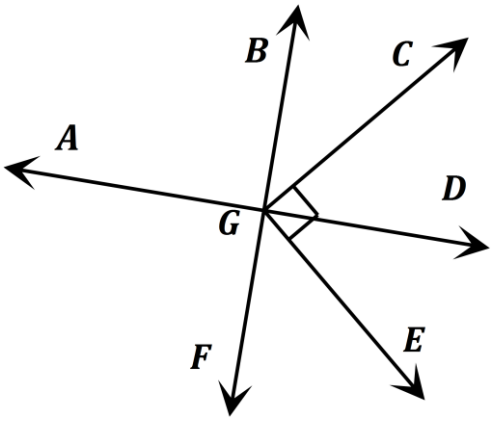

**5.**




**6.**




**For 7 – 10, use the diagram to the right.**




**7.** Which angle forms a linear pair with $\angle AGF$?

**8.** Name two complementary angles.

**9.** Name an angle that is supplementary to $\angle CGD$.

**10.** Which angle forms a linear pair with $\angle BGE$?

**11.** Assuming that $\angle A$ is supp. to $\angle B$. Fill in the following.

| $m\angle A$ | $62^\circ$ | $118^\circ$ | $3^\circ$ |
|---|---|---|---|
| $m\angle B$ | | | |

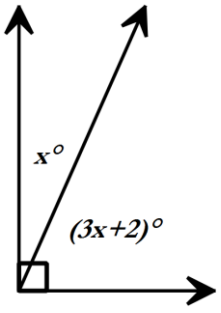
**12.** Assuming that $\angle A$ is comp. to $\angle B$. Fill in the following.

| $m\angle A$ | $62^\circ$ | $78^\circ$ | $3^\circ$ |
|---|---|---|---|
| $m\angle B$ | | | |

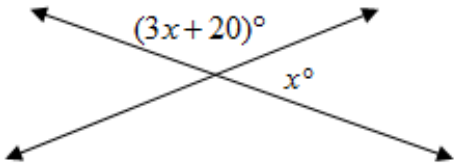
**13.** What is the measure of an angle that is supplementary to $\angle HIJ$ if $m\angle HIJ = 54^\circ$?

**14.** What is the measure of an angle that is complementary to $\angle DEF$ if $m\angle DEF = 74^\circ$?

**15.** Find the value of $x$




**16.** Find the value of $x$



Name: _____
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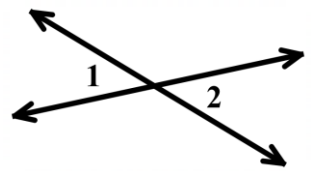
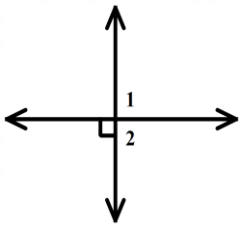
# Geometry Unit 2 - Day 10 Vertical Angles and Linear Pairs-

**Determine ∠1 and ∠2 are linear pair, vertical angles, or neither.**

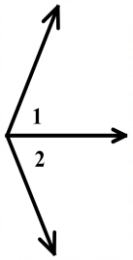
**1.**




**2.**

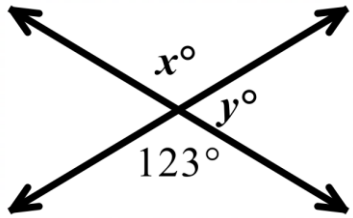



**3.**

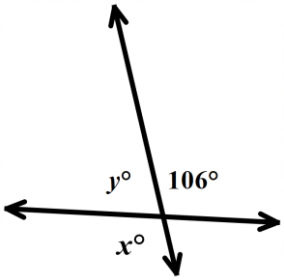



**Solve for the following variables.**

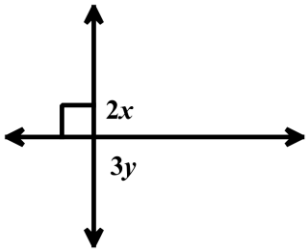
**3.**




**4.**

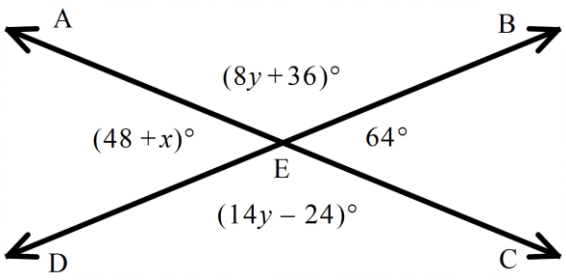



**5.**

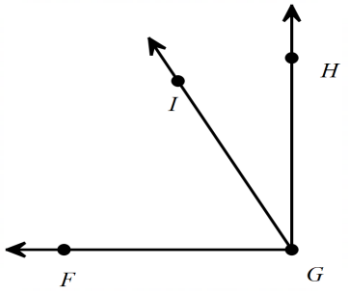



**6.** Given the diagram to the right, which of the following are true (select all that are true)?

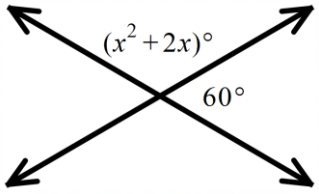
- **a)** $x = 10$
- **b)** $y = 10$
- **c)** $x = 16$
- **d)** $y = 16$
- **e)** $m\angle AED = 64°$
- **f)** $m\angle AEB = 64°$
- **g)** $m\angle AED = 116°$
- **h)** $m\angle DEC = 116°$



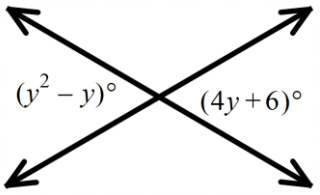

**7.** In the figure $\overrightarrow{GF} \perp \overrightarrow{GH}$, $m\angle FGI = (8x)°$, and $m\angle HGI = (2x - 20)°$. Find $m\angle FGI$ and $m\angle HGI$.



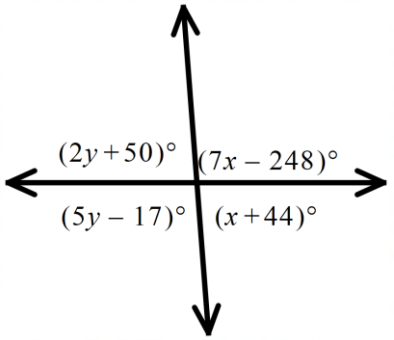
**8.** Find the value(s) of $x$




**9.** Find the value(s) of $y$




**10.** Find the value of the variables.




**Mixed Review:**

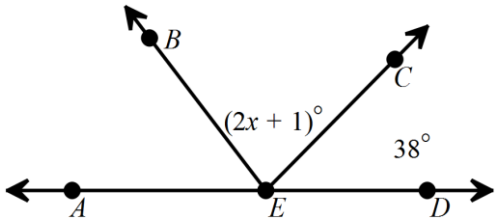
**11.** $\overrightarrow{EB}$ is the angle bisector of $\angle AEC$. What is the value of $x$?

**A.** $x = 35$

**B.** $x = 51.5$

**C.** $x = 70.5$

**D.** $x = 142$




**12.** Given the information below, find $BC$.

- $B$ is between $A$ and $C$
- $AC = 2x + 8$
- $AB = 4x - 16$
- $BC = 3x - 6$

**A.** $BC = 6$

**B.** $BC = 8$

**C.** $BC = 12$

**D.** $BC = 20$