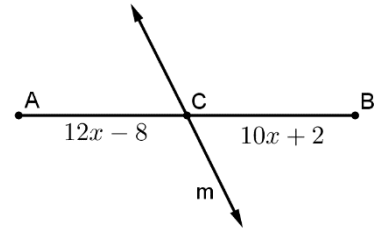1.   Use the given information to find x and AB given line m is a bisector
        of $\overline{AB}$.

        $x =$ _____

        $AB =$ _____
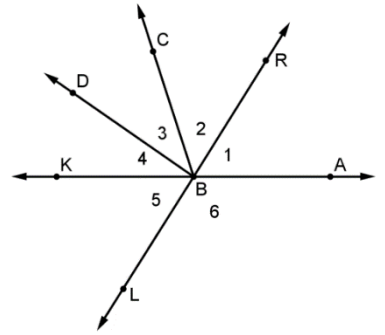

2.   Use the diagram at the right to answer each question.

        a.   Name a linear pair of angles. _____

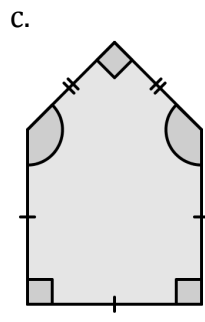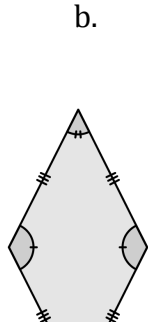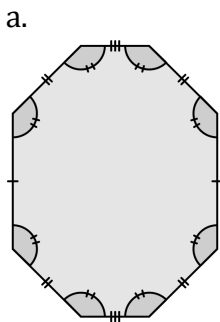   b.   Name an angle supplementary to $\angle ABC$. _____

        c.   Name a pair of vertical angles. _____

        d.   If $m\angle KBR = 122°$, then $m\angle RBA =$ _____

3.   Make a sketch of a regular octagon. Use appropriate markings to show it is regular.

4.   Determine if each of the following polygons are equilateral, equiangular, regular, or none of the
        above. Classify each by the number of sides.

a.   b.   c.   d.
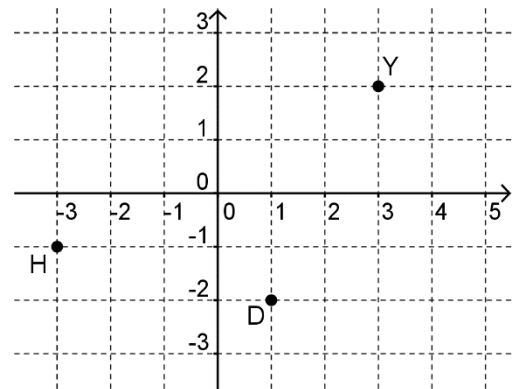

5.   Use the graph to answer each question.
        a.   What is the distance between H and Y?

        b.   What is the midpoint of $\overline{HY}$?

   c.   If D is the midpoint of $\overline{HK}$, what are the coordinates of K?

6. Given the points $G = (3, 7)$ and $M = (5, -9)$
    a. Find the coordinates of the midpoint of $\overline{GM}$. b. Find GM.

    c. If M is the midpoint of $\overline{GT}$ find the coordinates of T.

7. Points O and R lie between C and E. Point O is between C and R.
    Given $CE = 12x + 4, OR = 4x + 1, ER = 6x - 7, OC = 14$
    a. Draw and label a diagram with the given information.

    b. Solve for x. c. Determine OE.

    d. Determine CE. e. Is point O the midpoint of $\overline{CE}$? Explain.

8. Use the diagram at the right to answer the following.
    a. Name three collinear points.

    b. Give two other names for $\overleftrightarrow{WQ}$.

    c. Give another name for plane V.

    d. Name a line in plane V.

    d. Name a line not in plane V.

    e. Name the intersection of two drawn in lines.

    f. Name a point that is noncoplanar with R, S, and T.

    g. Name two opposite rays.
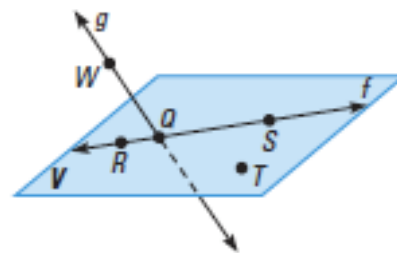
9. Draw plane A. Draw three noncollinear points J, K, and L in plane A. Draw $\overline{JK}$ and add a point M between J and K. Then draw $\overrightarrow{ML}$.

10. Use the diagram at the right to answer the following.
    a. Name the intersection of plane ACH and plane FBD.

    b. Name two planes that intersect at $\overleftrightarrow{GF}$.

    c. Name the intersection of $\overleftrightarrow{EB}$ and $\overleftrightarrow{GE}$.

    d. True or False: Points A, C, and F are coplanar.

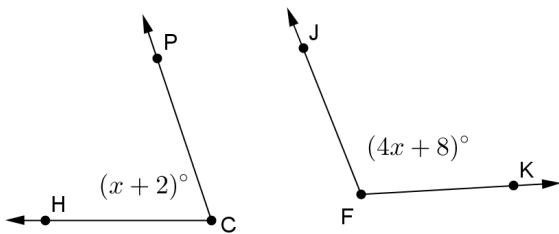   e. True or False: Plane ACE intersects plane DHB.
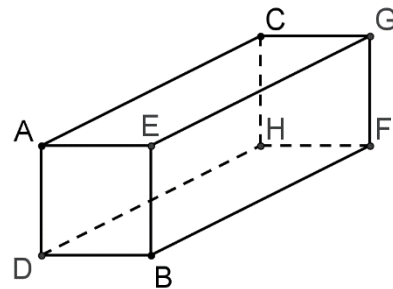
11. Mike made an error solving this problem. His work is shown below.
Original Instructions: Point F is between G and M on $\overline{GM}$. Use the given information to determine the length of $\overline{FM}$. You are given: $GM = 5x - 3; FG = 8; FM = 3x + 3$

$5x - 3 + 3x + 3 = 8 \qquad 3(1) + 3$
$\qquad\quad 8x = 8 \qquad\qquad = 3 + 3$
$\qquad\qquad x = 1 \qquad\qquad \boxed{FM = 6}$

a. Describe Mike's error(s).   b. Rework the problem correctly.

12. Venny made a mistake solving this problem. His work is shown below.
Original instructions: You are given that $\angle HCP$ and $\angle JFK$ are supplementary. What is $m\angle PCH$?
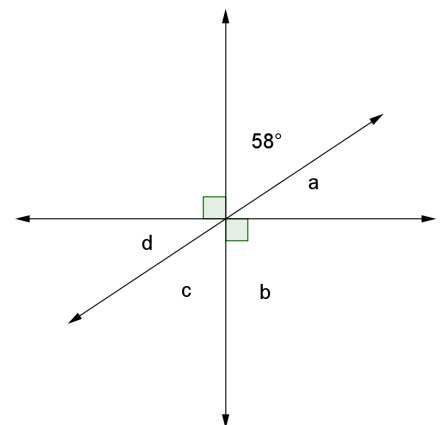
$(4x + 8)°$

$(x + 2)°$

$X + 2 + 4x + 8 = 90 \qquad\qquad 16 + 2$
$\qquad\quad 5x + 10 = 90 \quad \boxed{m\angle PCH = 18°}$
$\qquad\qquad 5x = 80$
$\qquad\qquad x = 16$

a. Describe Venny's error(s).   b. Rework the problem correctly.

13. Use the diagram to the right for question 1.

    a. Find $m\angle d$

    b. Find $m\angle c + m\angle b$

    c. What term is used to describe $\angle d$ & $\angle c$?

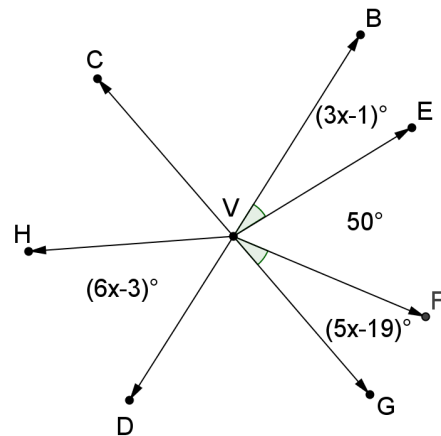   d. What term is used to describe $\angle a$ & $\angle d$?

    58°

14. In addition to the markings on the drawing, the following statements are given:

C, V, and G are collinear

$\angle DVH$ and $\angle HVB$ are a linear pair

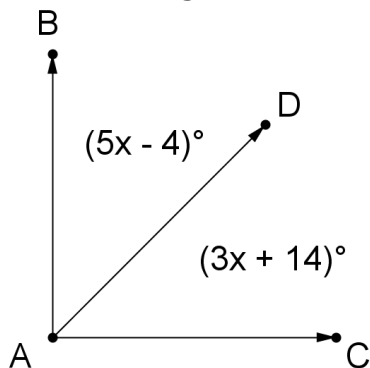$\overrightarrow{VH}$ is an angle bisector of $\angle CVD$

$m\angle BVG = 102°$

Find the indicated values.

a. $x =$ _____

b. $m\angle BVE =$ _____

c. $m\angle DVC =$ _____

d. $m\angle DVF =$ _____

Diagram labels: B, C, (3x-1)° E, H, V, 50°, (6x-3)°, F, (5x-19)°, D, G

15. Sally solved the following question incorrectly. Her work is shown below:

If $\overrightarrow{AD}$ is an angle bisector of $\angle BAC$, find the value of x. Then find $m\angle BAD$.

B
D
(5x - 4)°
(3x + 14)°
A   C

$5x - 4 + 3x + 14 = 90$

$8x + 10 = 90$

$\underline{\quad -10 \quad\quad -10}$

$\dfrac{8x}{8} = \dfrac{80}{8}$

$\boxed{x = 10}$

$m\angle BAD = 5(10) - 4 = 50 - 4 = \boxed{46°}$

a. Describe the error Sally made.   b. Solve the problem correctly.