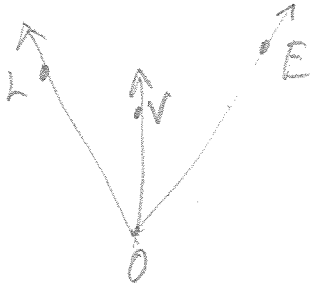


Honors Geometry
Review - Section 1.1 - 1.5

KEY

1. V is in the interior of $\angle LOE$. $m\angle LOE = 21$, $m\angle LOV = -2x + 9$, $m\angle VOE = 2x^2 + 4x$. Find the measure of each angle.



$$-2x + 9 + 2x^2 + 4x = 21$$

$$2x^2 + 2x - 12 = 0$$

$$x^2 + x - 6 = 0$$

$$(x+3)(x-2) = 0$$

$$x = -3 \quad x = 2$$

$x = -3$
 $m\angle LOV = 15$
 $m\angle VOE = 18 - 12 = 6$

$x = 2$
 $m\angle LOV = 5$
 $m\angle VOE = 8 + 8 = 16$

2. Solve for x. $2|3x+1|+1=5$ $|3x+1| = 2$

$$3x+1 = 2$$

$$3x = 1$$

$$x = \frac{1}{3}$$

$$3x+1 = -2$$

$$3x = -3$$

$$x = -1$$

3. $GH = 6$. The coordinate of G is $2x - 6$. The coordinate of H is $x - 5$. Find the coordinate of G.

$$|2x - 6 - (x - 5)| = 6$$

$$|2x - 6 - x + 5| = 6$$

$$|x - 1| = 6$$

$$x - 1 = 6$$

$$x = 7$$

$$x - 1 = -6$$

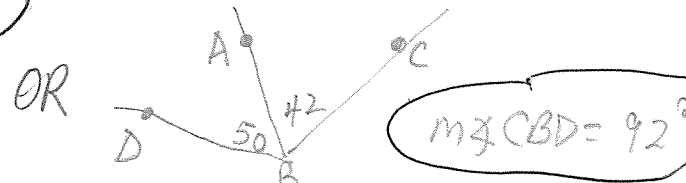
$$x = -5$$

$G = 8$ OR $G = -16$
 $H = 2$ $H = -10$

4. The $m\angle ABC = 42$ and $m\angle ABD = 50$. Find the measure(s) of $\angle CBD$.



$m\angle CBD = 89^\circ$



5. Draw: The intersection of plane X and Y is \overline{PQ}



6. A, B and C are collinear. B is between A and C. $AB = \frac{3}{4} BC$, $AC = 28$. Find AB.



$$\begin{aligned} \frac{3}{4}x + x &= 28 \\ \frac{7}{4}x &= 28 \quad \frac{4}{7} \\ x &= 16 \end{aligned}$$

$$AB = \frac{3}{4}(16) = 12$$

7. $AB = 7$. The coordinate of A is -6. Find the coordinate(s) of B.

$$-6 - x = 7$$

$$-x = 13$$

$$x = -13$$

$$B = -13$$

$$\text{OR } B = 1$$



8. True or False? Explain your answer.

* a. Any three points determine a unique plane. **(F)** - any 3 noncollinear pts. 3 collinear points determine an infinite # of planes.

b. Two planes intersect in a point. **(F)**

↳ in a line

c. If H is between R and Q then $RH = HQ$. **(F)** $RH > HQ$
 $RH < HQ$

R H Q

d. Any figure made up of two rays is an angle. **(F)**

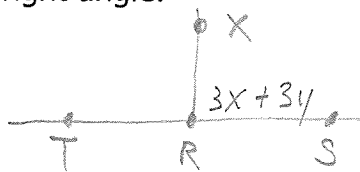
Can be 4 qs.



9. $\angle TRS$ is a straight angle. $\angle TRX$ is a right angle.

$$m\angle TRS = 2x + 5y$$

$$m\angle XRS = 3x + 3y$$



Solve for x and y.

$$-2(3x + 3y) = 90$$

$$3(2x + 5y) = 180$$

$$-6x - 6y = -180$$

$$6x + 15y = 540$$

$$9y = 360$$

$$y = 40$$

$$3x + 3y = 90$$

$$3x + 3(40) = 90$$

$$3x + 120 = 90$$

$$3x = -30$$

$$x = -10$$

CK

$$m\angle TRS = -20 + 200 = 180$$

$$m\angle XRS = -30 + 120 = 90$$

10. K is between J and L. If $JK = 2x + 5$, $KL = 5x + 3$ and $JL = x^2$, find the measure of each segment. Is K the midpoint of JL?



$$x^2 = 2x + 5 + 5x + 3$$

$$x^2 - 7x - 8 = 0$$

$$(x - 8)(x + 1) = 0$$

$$x = 8 \quad x = -1$$

OMIT

$JK = 21$
 $KL = 43$

NO, K is not midpt of \overline{JL} .

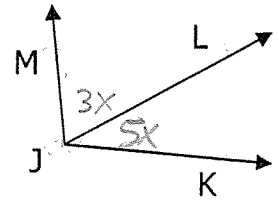
11. If the ratio of $\angle KJL$ to $\angle LJM$ is 5:3 and $\angle KJM = 144^\circ$, find $\angle LJM$.

$$3x + 5x = 144$$

$$8x = 144$$

$$x = 18$$

$$m\angle LJM = 54^\circ$$



OK

$$\angle KJL = 90^\circ$$

$$90 + 54 = 144^\circ$$

12. B is between A and C. $AB = 4x^2$, $BC = -11x$, $AC = 3$. Find AB and BC.



$$4x^2 - 11x = 3$$

$$4x^2 - 11x - 3 = 0$$

$$(4x + 1)(x - 3) = 0$$

$$x = -\frac{1}{4} \quad x = 3$$

OMIT

$$AB = 4\left(\frac{1}{16}\right) = \frac{1}{4}$$

$$BC = -11\left(-\frac{1}{4}\right) = \frac{11}{4}$$

OK

$$\frac{1}{4} + \frac{11}{4} = \frac{12}{4} = 3$$

14. Sometimes, Always and Never. Explain.

a. A segment can N have more than one midpoint. *midpt postulate*

b. The bisector of an angle is N on the exterior of the angle. *def'n of bisector*

c. The bisector of an acute angle A forms two acute angles.

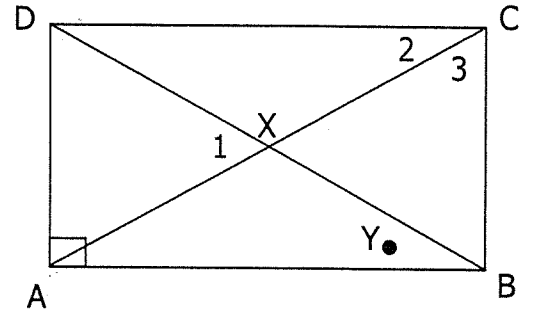
d. Three points are S collinear.



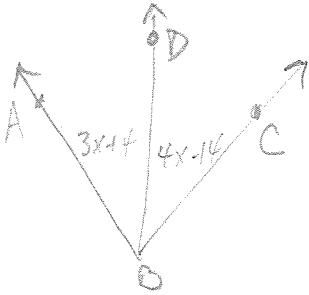
e. Three points are A coplanar.

15. Given the diagram, tell whether you can reach the conclusion shown.

- a. $\angle AXC$ is a straight angle. *Yes*
- b. Point Y lies on the interior of $\angle 3$. *Yes*
- c. $\angle ADC$ is a right angle. *NO*
- d. X is the midpoint of \overline{AC} . *NO*
- e. Point Y lies between points A and B. *NO*
- f. $\angle DXA$ and $\angle BXA$ are adjacent. *Yes*



16. D is on the interior of $\angle ABC$. $m\angle ABC = 130$, $m\angle ABD = 3x + 4$, $m\angle CBD = 4x - 14$.
Is \overline{BD} the bisector of $\angle ABC$? Explain your answer.



$$3x + 4 + 4x - 14 = 130$$

$$7x - 10 = 130$$

$$7x = 140$$

$$x = 20$$

$$m\angle ABD = 64$$

$$m\angle CBD = 80 - 14 = 66$$

\overline{BD} NOT bisector of $\angle ABC$ b/c $m\angle ABD \neq m\angle CBD$.

17. Algebra Review!!!

a. Solve for x.

$$3x^2 - 7x - 6 = 0$$

$$(3x + 2)(x - 3) = 0$$

$$x = -\frac{2}{3} \quad x = 3$$

b. Solve for x and y.

$$2(19 = 5x + 2y)$$

$$1 = 3x - 4y$$

$$38 = 10x + 4y$$

$$1 = 3x - 4y$$

$$39 = 13x$$

$$3 = x$$

$$1 = 9 - 4y$$

$$4y = 8$$

$$y = 2$$