UNIT 1: Tools of Geometry

NAME:_____

CORRECTIVE ASSIGNMENT

DATE:_____

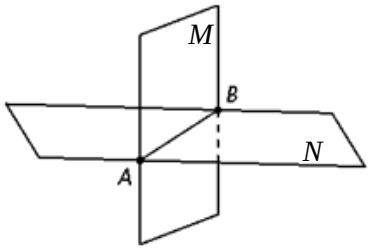
Make sure you know ALL of this vocab!

• **acute, right, obtuse straight angle** • **adjacent angles** • **angle bisector** • **collinear points** • **coplanar** • **complementary angles** • **congruent**	• **distance** • **line** • **linear pair** • **measure of an angle** • **midpoint** • **plane** • **point** • **postulate**	• **ray, opposite rays** • **segment** • **segment bisector** • **sides of an angle** • **space** • **supplementary angles** • **vertex of an angle** • **vertical angles**

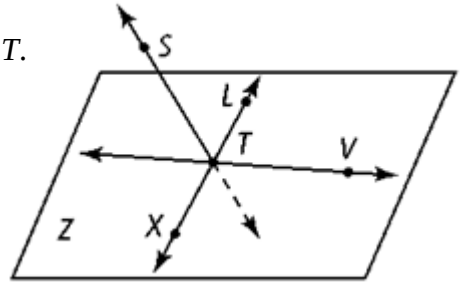
These formulas will be given on the test. You're welcome.

$$M = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2}\right) \qquad d = \sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$

1. What is the intersection of plane *M* and plane *N*?



2. Use picture to answer the following:



a. Name a ray with endpoint of *T*.

b. Are *L*,*V*, *S*, and *T* coplanar?

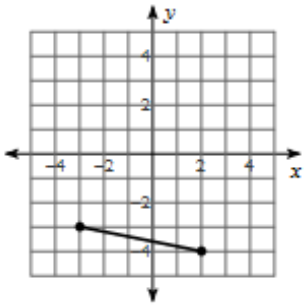
c. Draw $\overrightarrow{LV}$.

d. What is the intersection of $\overleftrightarrow{LX}$ and $\overleftrightarrow{TV}$?

Find the midpoint and distance between each pair of points.

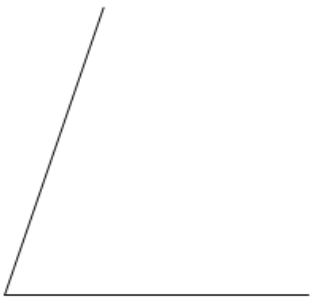
3) $(-7, -6), (2, 5)$

4)

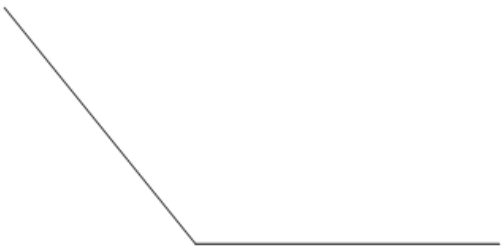


Find the measure of each angle to the nearest degree. Classify the angle as obtuse, acute, straight, or right.

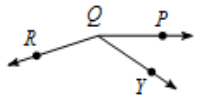
5)



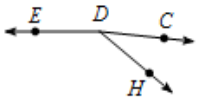
6)



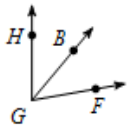
7) Find $m\angle PQR$ if $m\angle PQY = 34°$ and $m\angle YQR = 128°$.



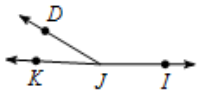
8) Find x if $m\angle CDH = x + 44$, $m\angle CDE = 174°$, and $m\angle HDE = x + 150$.



9) $m\angle HGF = 80°$, $m\angle BGF = 48 + x$, and $m\angle HGB = x + 48$. Find $m\angle HGB$.

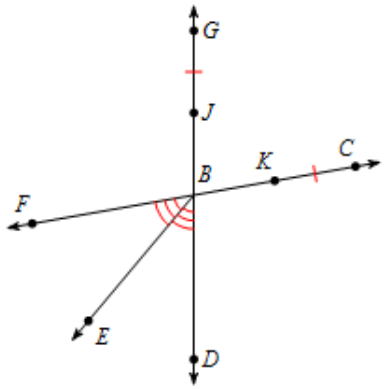


10) $m\angle KJD = 3x - 5$, $m\angle DJI = 13x + 6$, and $m\angle KJI = 177°$. Find $m\angle DJI$.

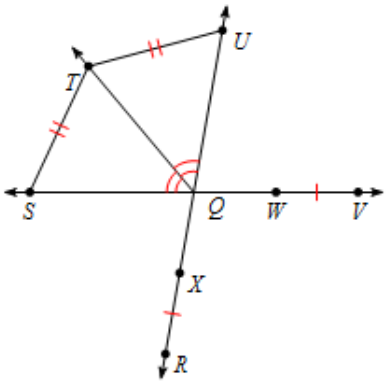


List all information given by the marks on the diagram.

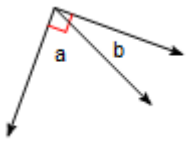
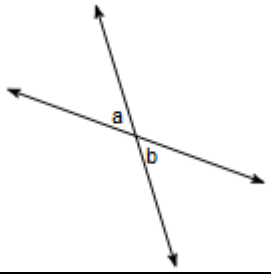
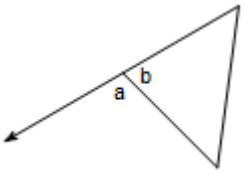
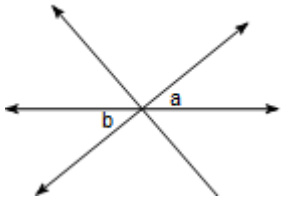
11)



12)

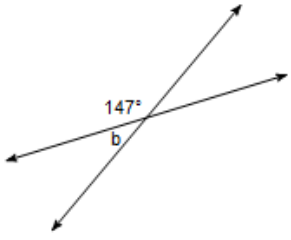


Name the relationship: adjacent, complementary, linear pair (supplementary), or vertical angles

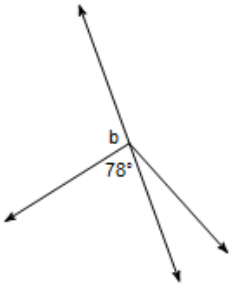
13.	14.	15.	16.
			

Find the measure of angle b.

17)

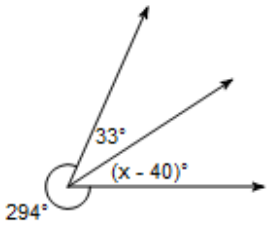


18)

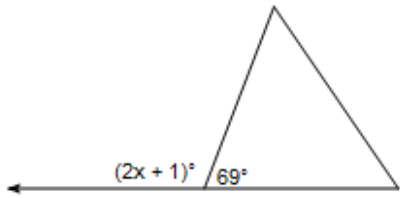


Find the value of x.

19)



20)



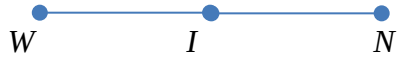
21.

Given

I is the midpoint of $\overline{WN}$

$WI = 4x - 12$

IN = $2x + 6$



Find *x*

Find *WI*

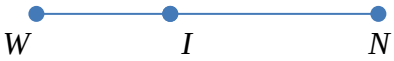
22.

Given

$WN = 5x + 1$

$IN = 12$

WI = $6x - 14$



Find *x*

Find *WI*

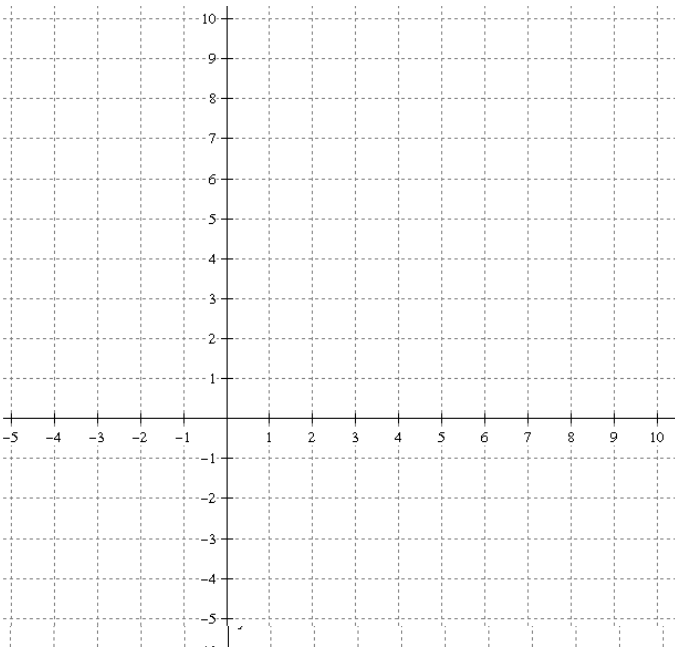
APPLICATIONS

1. Coordinate Geometry

a. Graph the points $A(1, 1)$ and $B(5, 7)$ and $C(7, 5)$

b. Connect the points in order to make a triangle, ΔABC

c. Find BA.



d. Find the midpoint of $\overline{BC}$. Plot on graph as point D.

e. Draw $\overrightarrow{BD}$ on the graph.

2. Proof

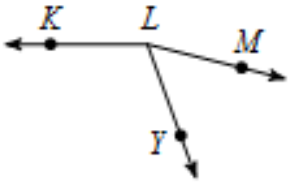
Label the picture and fill in the missing reasons in the two column proof.

Some possible reasons:

- Given
- Addition Property of Equality
- Subtraction Property of Equality
- Multiplication Property of Equality
- Division Property of Equality
- Substitution
- Distributive Property
- Combine like terms
- Definition of _____
- _____ Postulate
- _____ Theorem

Given: $m\angle YLK = 13x - 7$
$m\angle MLK = 19x - 5$
$m\angle MLY = 56$

Prove: $x = 9$



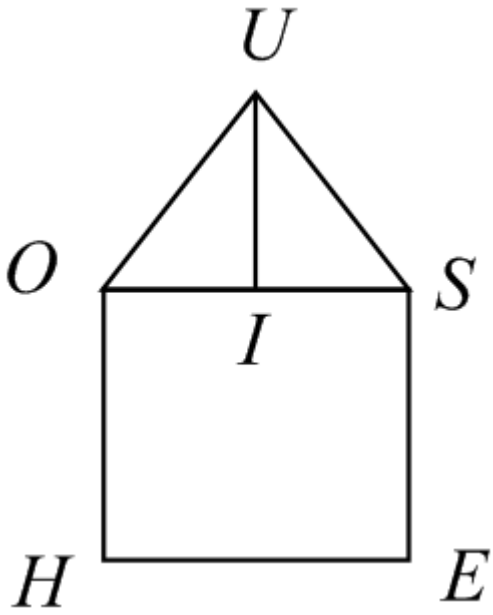
STATEMENT	REASON
1. $m\angle YLK = 13x - 7$ $m\angle MLK = 19x - 5$ $m\angle MLY = 56$	1.
2. $m\angle YLK + m\angle MLY = m\angle MLK$	2.
3. $13x - 7 + 56 = 19x - 5$	3.
4. $13x + 49 = 19x - 5$	4.
5. $49 = 6x - 5$	5.
6. $54 = 6x$	6.
7. $9 = x$	7.

3. Geometric Shape

Mr.Sullivan's dream home is shown below. Help him answer the questions below.

Mark the picture with the following.

a. $\overline{OH} \cong \overline{HE} \cong \overline{SE}$
b. $\overline{UI}$ is the angle bisector of $\angle OUS$
c. $\angle OHE$ is a right angle
d. I is the midpoint of $\overline{OS}$
e. $\overline{OU} \cong \overline{US}$
f. $\angle IOU \cong \angle USO$



Use the info to find the following.

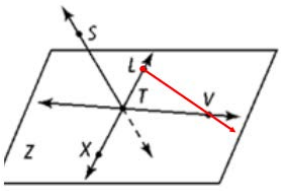
g. Given $OI = 4x + 3$ and $IS = 3x + 9$, find *x* and *OS*.

h. Given $m\angle OUS = 80$ and $m\angle OUI = 7x - 9$, find *x*.

Unit 1 Corrective Assignment ANSWERS!

1) $\overleftrightarrow{AB}$

2) a. $\overrightarrow{TV}$ or $\overrightarrow{TL}$ or $\overrightarrow{TX}$
b. No
c.



e. Point T

3) $M = \left(-\frac{5}{2}, -\frac{1}{2}\right)$
$d = \sqrt{202}$

4) $M = \left(-\frac{1}{2}, -\frac{7}{2}\right)$
$d = \sqrt{26}$

5) 71°
6) 129°
7) 162°
8) −10
9) 40°
10) 149°
11) $\angle DBE \cong \angle EBF$
$\overline{GJ} \cong \overline{CK}$
12) $\angle TQU \cong \angle SQT$
$\overline{VW} \cong \overline{RX}$
$\overline{ST} \cong \overline{TU}$
13) complementary
14) vertical
15) linear pair
16) vertical
17) 33°
18) 102°
19) 73
20) 55

21) $x = 9$
$WI = 24$

22) $x = 3$
$WI = 4$

APPLICATION ANSWERS!

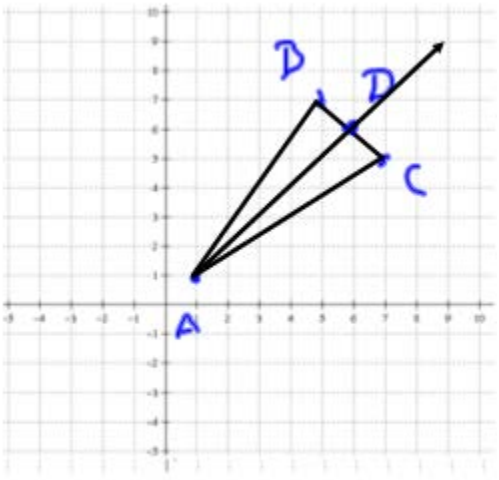
1. Coordinate Geometry

a. Graph the points $A(1, 1)$ and $B(5, 7)$ and $C(7, 5)$

b. Connect the points in order to make a triangle, ΔABC

c. Find BA.

$\sqrt{52}$



d. Find the midpoint of $\overline{BC}$. Plot on graph as point D.

e. Draw $\overrightarrow{BD}$ on the graph.

(6,6)

2. Proof

STATEMENT	REASON
1. $m\angle YLK = 13x - 7$ $m\angle MLK = 19x - 5$ $m\angle MLY = 56$	1. Given
2. $m\angle YLK + m\angle MLY = m\angle MLK$	2. Angle Addition Postulate
3. $13x - 7 + 56 = 19x - 5$	3. Substitution
4. $13x + 49 = 19x - 5$	4. Combine Like Terms
5. $49 = 6x - 5$	5. Subtraction Property of Equality
6. $54 = 6x$	6. Addition Property of Equality
7. $9 = x$	7. Division Property of Equality

3. Geometric Shape

Mark the picture with the following.

a. $\overline{OH} \cong \overline{HE} \cong \overline{SE}$
b. $\overline{UI}$ is the angle bisector of $\angle OUS$
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d. I is the midpoint of $\overline{OS}$
e. $\overline{OU} \cong \overline{US}$
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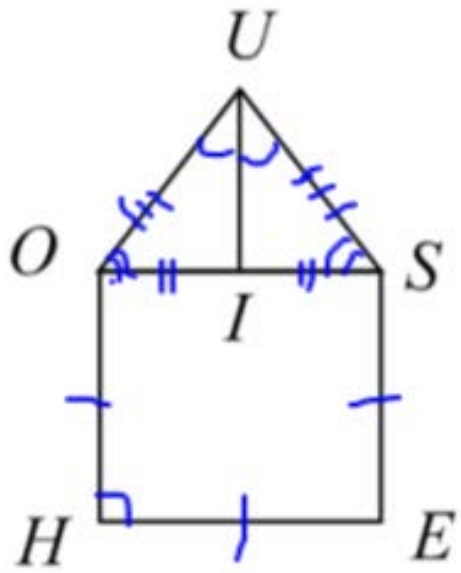

Use the info to find the following.

g. Given $OI = 4x + 3$ and $IS = 3x + 9$, find x and OS.

$x = 6$ $OS = 27$

h. Given $m\angle OUS = 80$ and $m\angle OUI = 7x - 9$, find x.

$x = 7$