

UNIT 1: Tools of Geometry

NAME: _____

REVIEW FOR TEST

DATE: _____

Make sure you know ALL of this vocab!

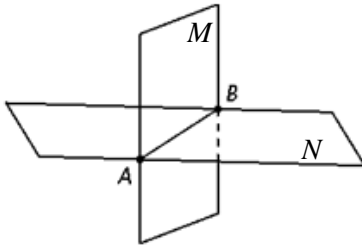
<ul style="list-style-type: none"> • acute, right, obtuse straight angle • adjacent angles • angle bisector • collinear points • coplanar • complementary angles • congruent 	<ul style="list-style-type: none"> • distance • line • linear pair • measure of an angle • midpoint • plane • point • postulate 	<ul style="list-style-type: none"> • ray, opposite rays • segment • segment bisector • sides of an angle • space • supplementary angles • vertex of an angle • vertical angles
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These formulas will be given on the test. You're welcome.

$$M = \left(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2} \right)$$

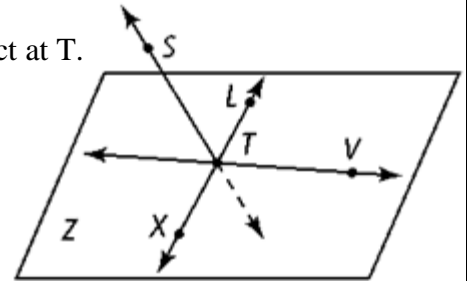
$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

1. Add a point C to the picture so that it is collinear with A and B . Then add a point D so that it is coplanar with plane M .



2. Use picture to answer the following:

- Name the 3 lines that intersect at T .
- Name two opposite rays.
- Draw \overrightarrow{XV} .
- What is the intersection of plane Z and plane STL ?

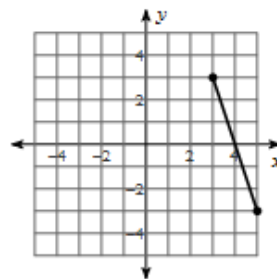


Find the midpoint and distance between each pair of points.

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

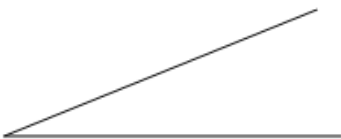


4)



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

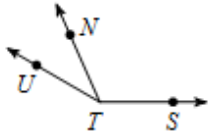
5)



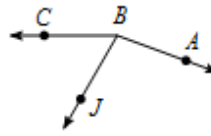
6)



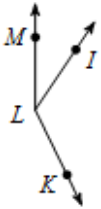
- 7) $m\angle UTS = 150^\circ$ and $m\angle UTN = 36^\circ$.
Find $m\angle NTS$.



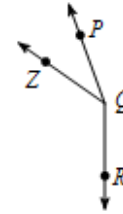
- 8) $m\angle ABJ = 11x + 1$, $m\angle ABC = 160^\circ$,
and $m\angle JBC = 6x + 6$. Find x .



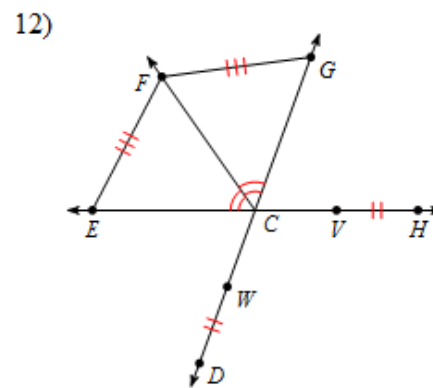
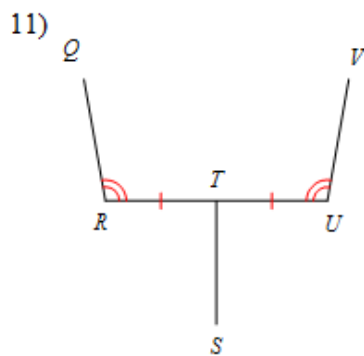
- 9) Find $m\angle MLI$ if $m\angle MLK = 154^\circ$,
 $m\angle MLI = 3x + 13$, and $m\angle ILK = 8 + 16x$.



- 10) $m\angle ZQP = 5x - 5$, $m\angle RQP = 20x$,
and $m\angle RQZ = 125^\circ$. Find $m\angle RQP$.



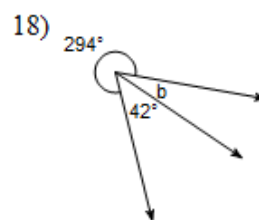
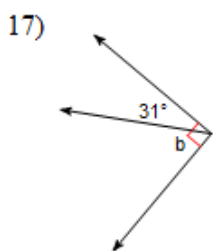
List all information given by the marks on the diagram.



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

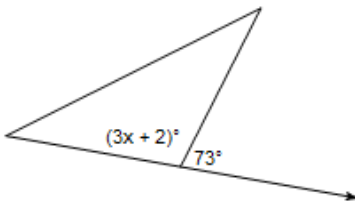
<p>13.</p>	<p>14.</p>	<p>15.</p>	<p>16.</p>
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Find the measure of angle b.

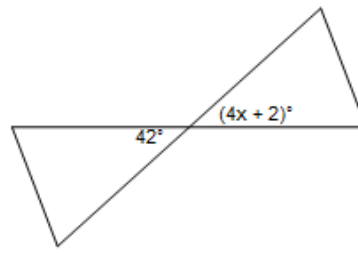


Find the value of x .

19)



20)



21.

Given

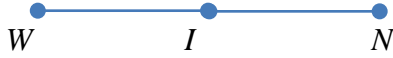
I is the midpoint of \overline{WN}

$$WI = 5x - 12$$

$$IN = 2x + 6$$

Find x

Find WI



22.

Given

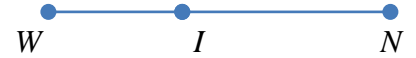
$$WN = 6x + 3$$

$$WI = 12$$

$$IN = 5x - 4$$

Find x

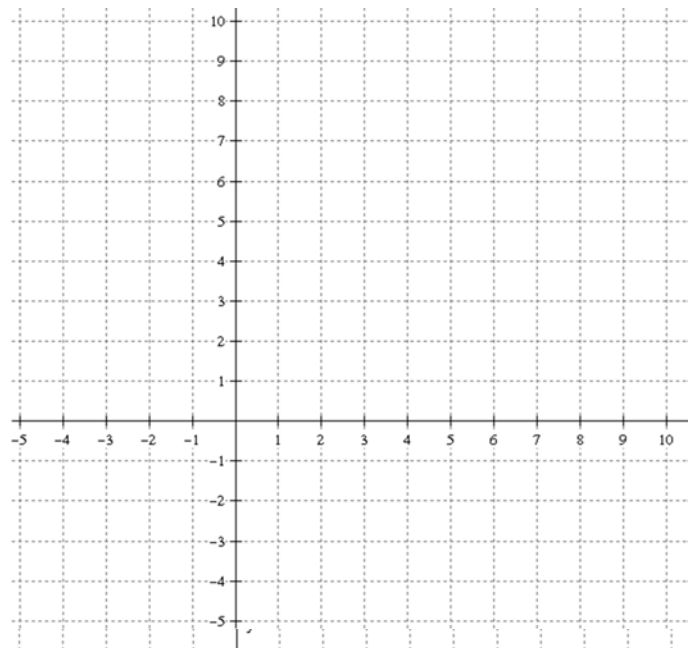
Find IN



APPLICATIONS

1. Coordinate Geometry

- Graph the points $A(4, 7)$ and $B(0, 0)$ and $C(8, 1)$
- Connect the points in order to make a triangle, $\triangle ABC$
- Find BA .
- Given $BC = \sqrt{65}$, what is true about BA and BC ?
- Find the midpoint of \overline{AC} . Plot on graph as point D .
- Draw \overline{BD} on the graph. \overline{BD} is the angle bisector of $\angle ABC$. Mark the picture to show this.

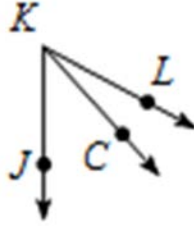


2. Proof

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

Given: $m\angle CKJ = 6x$
 $m\angle LKJ = 9x - 1$
 $m\angle LKC = 20$

Prove: $x = 7$



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

STATEMENT	REASON
1. $m\angle CKJ = 6x$ $m\angle LKJ = 9x - 1$ $m\angle LKC = 20$	1.
2. $m\angle CKJ + m\angle LKC = m\angle LKJ$	2.
3. $6x + 20 = 9x - 1$	3.
4. $6x = 9x - 21$	4.
5. $-3x = -21$	5.
6. $x = 7$	6.

3. Geometric Shape

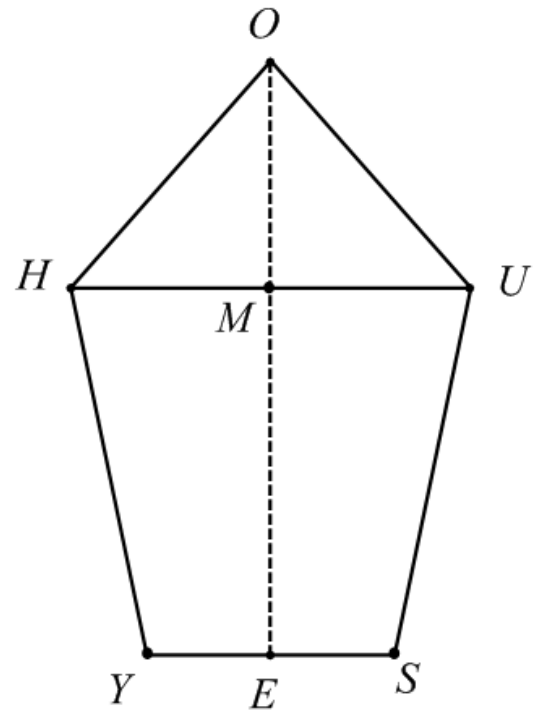
Mr. Sullivan's dream home is in the shape of a pentagon. Help him answer the questions below.

Mark the picture with the following.

- a. $\overline{HY} \cong \overline{US}$
- b. \overline{OE} is the bisector of \overline{HU}
- c. $\angle HMO$ is a right angle
- d. E is the midpoint of \overline{YS}
- e. $\overline{OH} \cong \overline{OU}$
- f. $\angle OHU \cong \angle MUO$

Use the info to find the following.

- g. Given $YE = 4x + 3$ and $YS = 39$, find x .



- h. Given $m\angle OHU = 4x + 3$ and $m\angle MUO = 5x - 9$, find x and $m\angle MUO$