

Write your questions here!

1.4 Addition Postulate

NOTES:

#	Segment Addition Postulate
1-5	If three points A , B , and C are collinear and B is between A and C , then



Given $BT = 36$

Find BA and AT



Given $MA = 5x - 3$
 $AN = 30$
 $MN =$

Find x

Quick Review Solving Equations! Check MyAlgebra section 3.4 for extra help!

1. $2x + 1 = 9$

2. $2x + 1 - 5x = 9$

3. $2x + 1 = 11 - 3x$

4. $2x + 1 + 3x + 4 = 19 + 3x - 5$

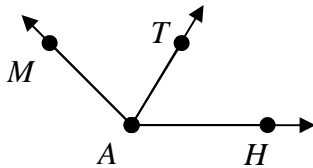
#	Angle Addition Postulate	
1-6	If point B is in the interior of $\angle DOG$, then	

Given

$$m\angle MAT = 60^\circ$$

$$m\angle MAH =$$

$$m\angle TAH = 4x + 20$$



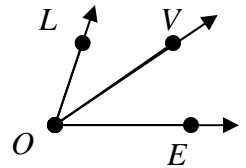
Find x

Given

$$m\angle LOE =$$

$$m\angle LOV = 4x + 1$$

$$m\angle VOE = 5x + 2$$



Find x

Find $m\angle LOV$

Summarize your notes:

1.4 PRACTICE

Label the picture, then find the missing segment.

1.



$EA = 15$
 $AT = 9$
 Find ET

2.



$IG = 15$
 $BG = 40$
 Find BI

3.



$PI = 2x$
 $IG = 18$
 $PG = 34$
 Find PI

4.

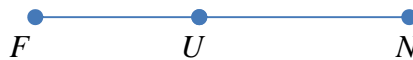


$FO = 3y + 4$
 $OR = 20$
 $FR = 5y + 18$

Find y

Find FO

5.



$FU = 6x$
 $UN = 5x + 18$
 $FN = 15x - 2$

Find x

Find FN

6.



$EA = 8y + 4$
 $YE = 4y + 8$
 $YA = 15y - 9$

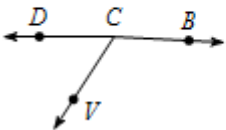
Find y

Find EA

Use Angle Addition Postulate to answer the following.

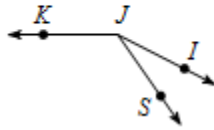
7.

$m\angle BCV = 120^\circ$ and $m\angle BCD = 177^\circ$.
 Find $m\angle VCD$.



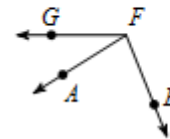
8.

Find $m\angle IJS$ if $m\angle IJK = 153^\circ$
 and $m\angle SJK = 125^\circ$.



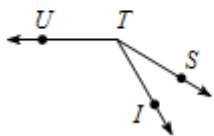
9.

$m\angle EFG = 112^\circ$ and $m\angle EFA = 80^\circ$.
 Find $m\angle AFG$.



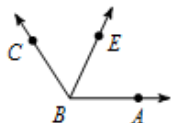
10.

$m\angle ITU = 120^\circ$, $m\angle STI = 6x + 5$,
and $m\angle STU = 36x + 5$. Find x .



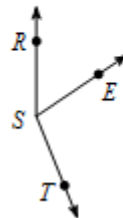
11.

Find x if $m\angle CBE = 57x + 1$,
 $m\angle CBA = 124x - 1$, and $m\angle EBA = 65^\circ$.



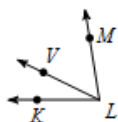
12.

$m\angle RST = 158^\circ$, $m\angle RSE = 8x$,
and $m\angle EST = 14x + 4$. Find x .



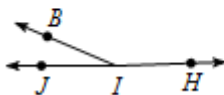
13.

Find $m\angle KLV$ if $m\angle VLM = 55^\circ$,
 $m\angle KLV = 4x + 2$, and $m\angle KLM = 12x + 9$.



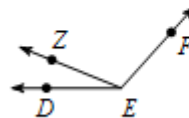
14.

Find $m\angle JIB$ if $m\angle BIH = 37x + 7$,
 $m\angle JIH = 178^\circ$, and $m\angle JIB = 6x - 1$.



15.

$m\angle DEF = 66x$, $m\angle DEZ = 22^\circ$,
and $m\angle ZEF = 55x$. Find $m\angle ZEF$.



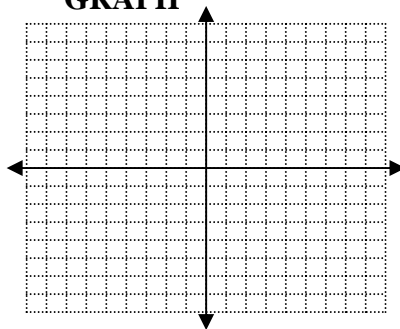
ALGEBRA REVIEW

SOLVE

$$6 = 2 + \frac{x}{3}$$

GRAPH

$$y = \frac{1}{4}x - 2$$



MULTIPLY

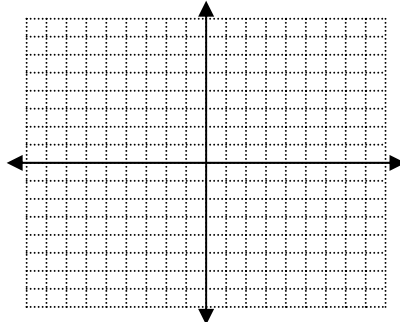
(distribute)
 $2x(-2x - 3)$

SOLVE

$$3 - 7y = 5y + 3$$

GRAPH

$$x = -3$$



FACTOR

Factor out the greatest common
factor (undistribute)

$$16x + 40$$

1.4 APPLICATION

1. Label the picture and find the missing segment.

$$FY = 29$$

$$FL = 3x - 9$$

$$LY = 4x + 3$$

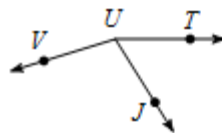
Find x



Find FL

2.

Find x if $m\angle TUV = 163^\circ$, $m\angle JUV = 35x$,
and $m\angle TUJ = 18x + 4$.



Watch the application walk through video if you need extra help getting started!

3. Cedar Point is an amusement park in Cleveland, OH. Mr. Kelly's mom decides that when Mr. Kelly turns 35 he can drive to Cedar Point all by himself. His mom is worried about Mr. Kelly's directional skills and makes the following map to help him find his way. MapQuest calculates the miles from Rochester (point A) to Cleveland (point B) as 314 miles. Let's estimate this trip and say that it is a perfectly straight line segment from A to B.

a. 3 hours into his trip, Mr. Kelly stops for lunch in Eerie (point E) after averaging 54 mph. Find AE .



b. Mr. Kelly decides to live on the edge and average 56 mph the remainder of the drive. How much longer will he be travelling finish the trip EB ?

4. Coordinate Geometry

a. Graph the points

$$M(2,1)$$

$$A(6,-1)$$

$$T(8,7)$$

$$H(4,9)$$

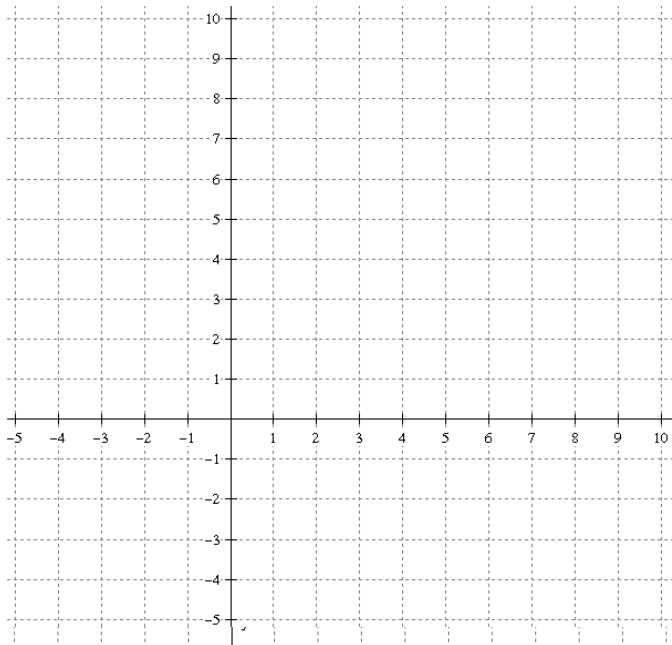
b. Connect the points in order to make a parallelogram.

c. Draw in the diagonals \overline{AH} and \overline{MT} and label their point of intersection point B .

d. $m\angle TBH + m\angle HBM = m\angle$

e. Find the distance of \overline{AH} .

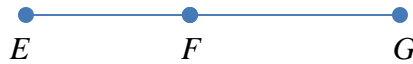
f. \overline{MT} bisects \overline{AH} at B . Find $AB =$ and $BH =$



5. Proof

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

Given: $EG = 59$
 $EF = 8x - 14$
 $FG = 4x + 1$



Prove: $x = 6$

STATEMENT	REASON
1. $EG = 59$ $EF = 8x - 14$ $FG = 4x + 1$	1.
2. $EF + FG = EG$	2.
3. $8x - 14 + 4x + 1 = 59$	3.
4. $12x - 13 = 59$	4.
5. $12x = 72$	5.
6. $x = 6$	6.

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

6. Geometric Shape

Mr. Brust is flying a kite one day. He starts to day dream about segments.

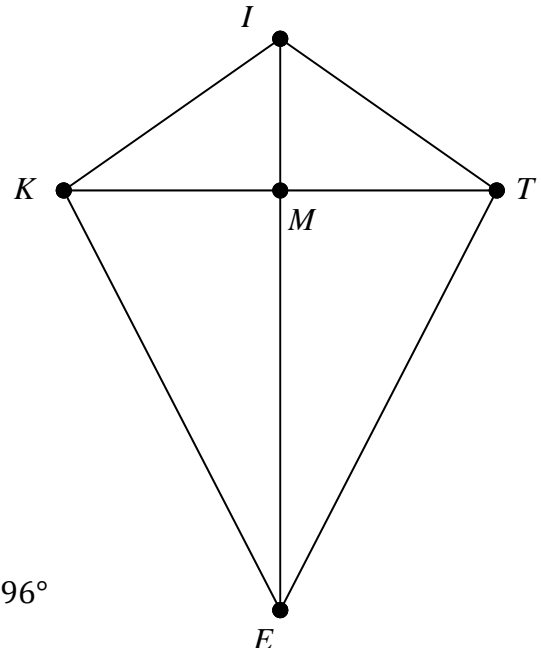
Mark the following on the picture.

- $\overline{KI} \cong \overline{IT}$
- $\overline{KE} \cong \overline{ET}$
- M is the midpoint of \overline{KT}
- $\angle KIM \cong \angle TIM$
- $\angle KEM \cong \angle TEM$
- $\angle IKM \cong \angle ITM$

Find the following...

- If $KT = 64$ and $KM = 2x + 16$
Find MT

- If $\angle IKM = 5y - 18$ and $\angle MKE = 3y + 34$ and $\angle IKE = 96^\circ$
Find $\angle IKM$



- The perimeter of quadrilateral $KITE$ is 220 cm. If $KI = 5y - 18$ and $KE = 4y + 16$
Find y