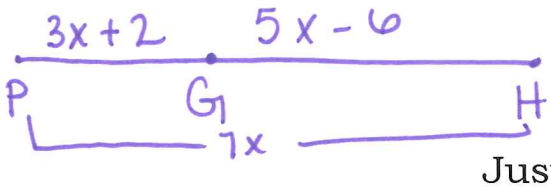
Name: Key Hr. _____

Segment Relationships and Review Notes

Directions: You must show the geometry and justify each step.

1. Find the value of the variable and the length of GH if G is between P and H.
PG= 3x + 2, GH= 5x – 6, PH= 7x
Draw the picture:



Geometry:

PG + GH = PH

3x+2+5x-6 = 7x

8x - 4 = 7x

-4 = -1x

4 = x

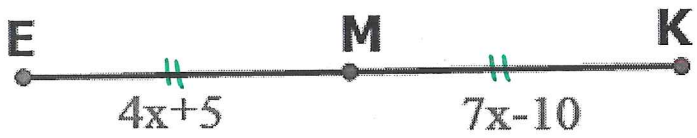
Justification:

Segment addition

GH = 5(4) - 6

GH = 14

2. M is the midpoint of EK. Find the value of X and the length of EK.



Geometry:

EM ≅ MK

4x+5 = 7x-10

5 = 3x -10

+10 +10

15/3 = 3x/3

5 = x

Justification:

def of midpt

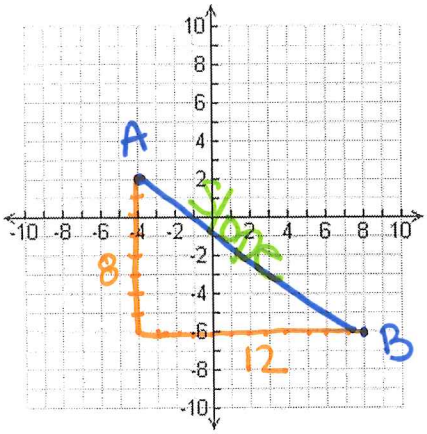
EK = 4(5)+5 + 7(5) -10

25 + 25

EK = 50

Directions: Use the Pythagorean Theorem or Distance Formula to find the distance of each segment, and then find the midpoint of each segment and slope. **You must simplify radicals and fractions!!!! You must show all work for each problem.**

3. A(-4,2), B(8,-6)



Distance

$8^2+12^2=AB^2$

$64+144=AB^2$

$\sqrt{208}=AB$

$\sqrt{16}\ \sqrt{13}$

$4\sqrt{13}$

Distance: $4\sqrt{13}$

Midpoint: $(2,-2)$

Slope: $-\frac{2}{3}$

Midpoint

$\left(\frac{-4+8}{2}, \frac{2+-6}{2}\right)=\left(\frac{4}{2}, \frac{-4}{2}\right)$

$=(2,-2)$

Slope AB $=-\frac{8}{12}=\frac{-2}{3}$

4. Find the coordinates of D if M(-6,4) is the midpoint of DF and F(-5,-3). You must show all work, from start to finish.

D(x,y) F(-5,-3)

$\left(\frac{x+-5}{2}, \frac{y+-3}{2}\right)=(-6,4)$

$\frac{x+-5}{2}=-6$

$x-5=-12$

$x=-7$

$\frac{y+-3}{2}=4$

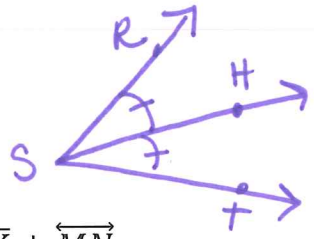
$y-3=8$

$y=11$

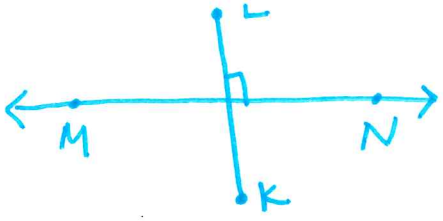
D(-7,11)

Directions: DRAW and LABEL a figure for each relationship.

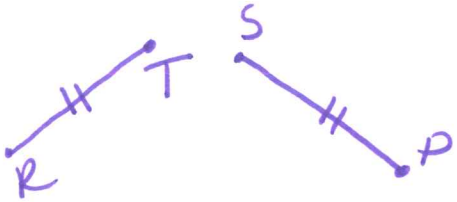
5. $< RST$ with $\overrightarrow{SH}$ *as an angle bisector*



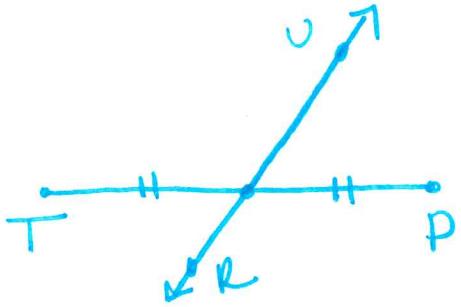
6. $\overline{LK} \perp \overleftrightarrow{MN}$



7. $\overline{RT} \cong \overline{SP}$



8. $\overleftrightarrow{UR}$ *is a segment bisector to* $\overline{TP}$



9. <XYZ and <XYW are linear pairs.