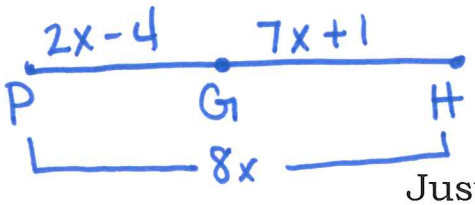
Name: Key Hr. _____

Segment Relationships and Review HW

1. Find the value of the variable and the length of GH if G is between P and H.
PG= 2x – 4, GH= 7x + 1 PH= 8x

Draw the figure:



Geometry:

$PG + GH = PH$

$2x - 4 + 7x + 1 = 8x$

$9x - 3 = 8x$

$-9 \quad -9x$

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

$3 = x$

Justification:

Segment addition

$GH = 7(3) + 1$

$GH = 22$

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

Geometry:

$EM \cong MK$

$2x + 1 = 5x - 20$

$21 = 3x$

$7 = x$

Justification:

def of midpt

$EK = 2(7) + 1 + 5(7) - 20$

$EK = 30$

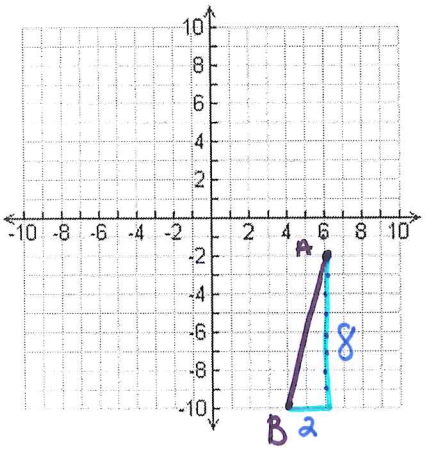
3. Directions: Use the Pythagorean Theorem or Distance Formula to find the distance of each segment, and then find the midpoint of each segment and slope. **You must simplify radicals and fractions!!!! You must show all work for each problem.**

A(6,-2), B(4,-10)

Distance: $2\sqrt{17}$

Midpoint: $(5,-6)$

Slope: 4



Distance

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

$4+64=AB^2$

$\sqrt{68}=AB$

$2\sqrt{17}$

Midpoint

$\left(\frac{6+4}{2}, \frac{-2+-10}{2}\right)$

$\left(\frac{10}{2}, \frac{-12}{2}\right)=(5,-6)$

Slope $AB=\frac{8}{2}$

4. Find the coordinates of D if M(-1,6) is the midpoint of DF and F(2,9). You must show all work, from start to finish. You will be graded on your set up and how you solve algebraically.

$D(x,y)\quad F(2,9)$

$\left(\frac{x+2}{2}, \frac{y+9}{2}\right)=(-1,6)$

$\frac{x+2}{2}=-1 \qquad \frac{y+9}{2}=6$

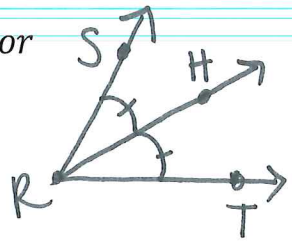
$x+2=-2 \qquad y+9=12$

$x=-4 \qquad y=3$

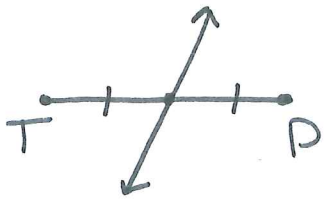
$D(-4,3)$

Directions: DRAW and LABEL a figure for each relationship.

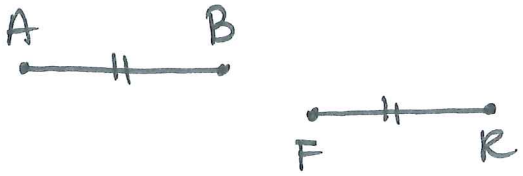
5. $< SRT$ with $\overrightarrow{RH}$ *as an angle bisector*



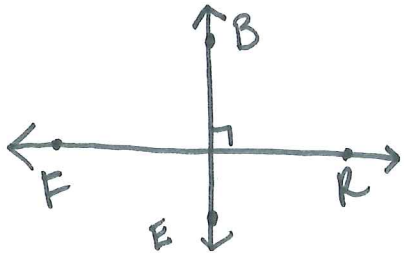
6. $\overleftrightarrow{MN}$ *is a segment bisector of* $\overline{TP}$



7. $\overline{AB} \cong \overline{FR}$



8. $\overleftrightarrow{FR} \perp \overleftrightarrow{EB}$



9. <JCK and <KCL are linear pairs.