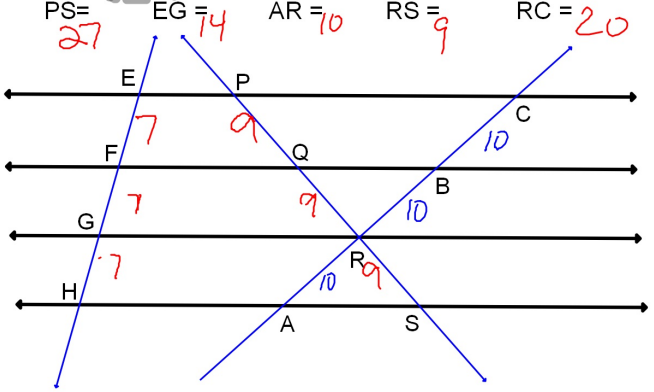
Geometry Bellwork Tuesday, April 1, 2014

The four black lines are parallel and EF=FG=GH

Given CA=30, QR = 9 and FH=14. Find each of the following:

PS= 27 EG = 14 AR = 10 RS = 9 RC = 20



2. Show that ABCD is a Parallelogram by showing that opposite sides are parallel.

A(5,-4) B(1,-5) C(4,-2) D(8,-1)

	Slope	
AB	$\frac{1}{4}$ //	
BC	$\frac{3}{3}$ //	AB ∥ CD and BC ∥ DA so both pair of opposite sides are parallel.
CD	$\frac{1}{4}$ //	
DA	$\frac{3}{3}$ //	

3. Show that EFGH is a Parallelogram by showing that opposite sides are congruent.

E(5,-3) F(-1,10) G(-3,7) H(3,-6)

	Distance	
EF	$\sqrt{6^2+13^2}=\sqrt{205}$	
FG	$\sqrt{2^2+3^2}=\sqrt{13}$	$\overline{FG} \cong \overline{HE}$
GH	$\sqrt{6^2+13}=\sqrt{205}$	$\overline{EF} \cong \overline{GH}$
HE	$\sqrt{2^2+3^2}=\sqrt{13}$	This shows that both pair of opposite sides are congruent.

4. Show that JKLM is a Parallelogram by showing that diagonals bisect each other.

J(-4,-3) K(6,-5) L(-1,4) M(-11,6)

	Midpoint	
JL	$\left(\frac{-5}{2}, \frac{1}{2}\right)$	Diagonals have the same midpoint which means that they bisect each other.
KM	$\left(\frac{-5}{2}, \frac{1}{2}\right)$	

5. Show that WXYZ is a Parallelogram by showing that one pair of opposite sides are both parallel and congruent.

W(3,1) X(9,6) Y(8,7) Z(2,2)

	Slope ✓	Distance ✓
WX	$\frac{6-1}{9-3} = \frac{5}{6}$	$\sqrt{5^2+6^2} = \sqrt{61}$
YZ	$\frac{7-2}{8-2} = \frac{5}{6}$	$\sqrt{5^2+6^2} = \sqrt{61}$