Unit 1 Review

1. Evaluate the following expressions if $pq=-2, rq=3, rp=-1$ and $pqr>0$.

(a) $p^2q^2r^2$

(b) $\frac{1}{p^2}+\frac{1}{q^2}+\frac{1}{r^2}$

2. Solve the following equations:

(a) $|2x-1|+x=4$

(b) $|4x+3|=2x-5$

(c) $7|2x-1|+8=4$

3. Solve and graph the inequalities

(a) $y-\frac{3}{2}|x+4|<2y$

(b) $-2y+x<-4$

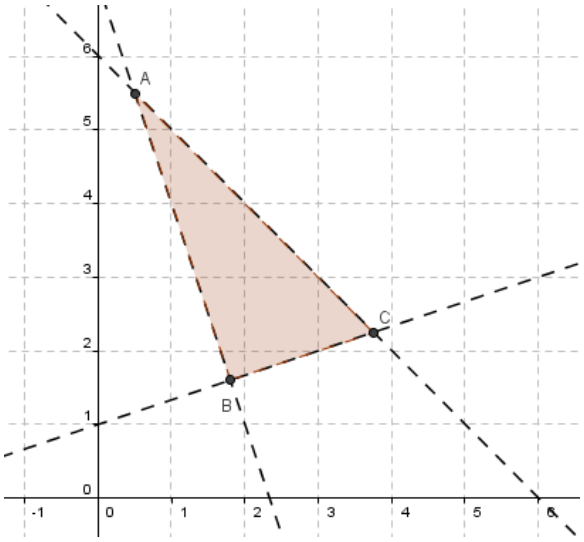
(c) $\begin{cases}\frac{3}{2}y-\frac{9}{2}\le x\\ y-x>x+1\end{cases}$, also identify the intersection of the boundary lines. (question c only)

4. Solve the following systems

(a)
$$x-2y+z=\frac{1}{4}$$
$$3x+4y+5z=-\frac{15}{4}$$
$$4x+y-7z=\frac{-21}{4}$$

(b) $\begin{cases}\frac{x+y}{3}+\frac{2y-x}{2}+1=\frac{3}{2}\\ 2-\frac{4x}{5}-\frac{2y}{3}=\frac{4}{15}\end{cases}$

5. Use the following graph to
(a) find the system of inequalities that represents the shade solution.
(b) find the coordinates of the A, B, and C
(c) show that $\overline{AB}\perp\overline{BC}$
(d) find the perimeter of ΔABC
(e) find the area of ΔABC



6. Use GRASP to analyze the following problem

Mrs. Chen bought butterfly decors for Hannah's 6th birthday party. There are 54 butterfly decors with two different size, the big one is $1.20 each, and the small one is 3 quarters each. If Mrs. Chen spent $ 56.25 for all the decors, how many big butterfly decors did Mrs. Chen buy for Hannah's party?