Assessment U1

Please read this instruction before you start answering questions:
1. Your goal is to collect 50 points.
2. Different questions have different point values.
3. Your Point Value = sum of [(questions point) * (point factors)]
4. Questions with (*), the point factor = 1, questions without (*), the point factor = 0.2
5. Write your answers in the answer documents. Please make your writing legible. It is your responsibility to make the grader understand your reasoning process.

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

*(a)(5 points) pqr

(b) (5 points) $\frac{1}{p}+\frac{2}{q}+\frac{1}{r}$

(c) (5 points) $p(q+r)+q(r+p)+r(p+q)$

2. Solve the following equations

*(a)(5 points) $-2|x-3|=x$

(b) (5 points) $\frac{1}{4}|x-4|+1=-\frac{1}{6}-x$

(c) (5 points) $-6|4x-1|+2=7$

(d) (5 points) $2\left|\frac{2}{3}x+1\right|=x-1$

3. Solve and graph the following inequalities

(a) (5 points) $|x-4|<2y-2$

*(b) (5 points) $y\le 4+\frac{2}{3}x$

(c) (5 points) $\begin{cases} y+3>\frac{2}{5}x \\ y-x\ge x+1 \end{cases}$, also identify the intersection of the boundary lines. (question c only)

(d) (5 points) $\begin{cases} 2x-y>4 \\ y-2x>1 \end{cases}$

4. Solve the following systems

(a) (10 points) $\begin{cases} \frac{x+2}{2}+\frac{y-x}{-3}=\frac{6}{5} \\ \frac{-(4-x)}{3}=\frac{y}{2} \end{cases}$

*(b) (10 points) $\begin{cases} \frac{x+y}{2}-\frac{y+z}{4}=5 \\ \frac{y-x}{4}+\frac{x+z}{6}=3 \\ \frac{z+x}{2}-\frac{y-z}{3}=4 \end{cases}$

(c) (10 points) $\begin{cases} \frac{x}{12}-\frac{y}{3}-\frac{z}{4}=\frac{1}{4} \\ \frac{1}{12}x+\frac{2}{3}y=\frac{3}{4} \\ \frac{2}{3}y-\frac{2}{5}z=-\frac{1}{4} \end{cases}$

5. Use the following graph to

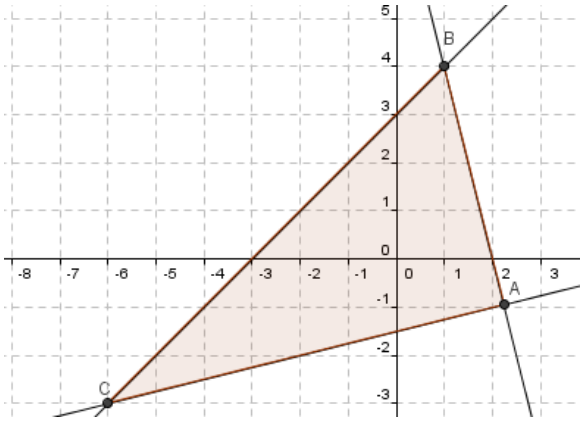
*(a) find the system of inequalities that represents the shade solution. (15 points)

(b) find the coordinates of the A, B, and C (15 points)

(c) show that $\overline{AB} \perp \overline{AC}$ (10 points)

*(d) find the perimeter of ΔABC (10 points)

(e) find the area of ΔABC (10 points)



You need to use GRASP to analyze question 6 –8:

*6. (10 points) Sammy was riding his bike from San Jose to Morgan Hill and back. Heading south, he experienced head wind, it took him 90 minutes to finish one way, while it took him 75 minutes to come back from Morgan Hill. If the wind condition did not change that day, how long would it take him to ride his bike for the round trip had there been no wind at all? (round your answer to the tenth minute)

7. (5 points) Frankie's Old bookstore is going on sale, all fiction books are $2.50 each and all the nonfiction books are $4.50 each. Jaden bought a whole series of Startrek and several nonfiction books for this new semester. He brought home 19 books and spent $53.50. How many books were in the series of Startrek?

8. (5 points) Barbie mixed up two types of beans, kidney beans and green beans, together to make a bean stew. The total weight of the beans in her stew was 816 grams. If a cup of kidney beans was 24 grams and a cup of green beans was 18 grams, how many cups of kidney beans did Barbie use to make the soup?