Name _____ Period _____ Due <u>September 21, 2015</u>

PAP Weekly Project 1.3

Inequalities

Recall that a number line is a horizontal line that has points which correspond to numbers. The points are spaced according to the value of the number they correspond to; in a number line containing only whole numbers or integers, the points are equally spaced.

We can graph real numbers by representing them as points on the number line. For example, we can graph $2\frac{1}{2}$ on the number line:

We can also graph inequalities on the number line. The following graph represents the inequality $x \le 2\frac{1}{2}$. The dark line represents all the numbers that satisfy $x \le 2\frac{1}{2}$. If we pick any number on the dark line and plug it in for x, the inequality will be true.

The following graph represents the inequality $x < 2\frac{1}{2}$. Note that the open circle on $2\frac{1}{2}$ shows that 2 is *not* a solution to $x < 2\frac{1}{2}$.
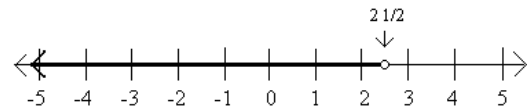
Circle the correct responses to describe the solutions for each situation.

1. Elijah has $56 to spend on two shirts. After purchasing the shirts, he has $8 remaining.	**Equation** OR **Inequality**	**Shade right** OR **Shade left** OR **No shade**	**Open circle** OR **Solid circle**
2. Felisha buys a magazine for $4.50 and four sodas. She spends a maximum of $12.	**Equation** OR **Inequality**	**Shade right** OR **Shade left** OR **No shade**	**Open circle** OR **Solid circle**
3. Grace sells electronic supplies. Each week she earns $295 plus commission equal to 6% of her sales. This week her goal is to earn no less than $800 total.	**Equation** OR **Inequality**	**Shade right** OR **Shade left** OR **No shade**	**Open circle** OR **Solid circle**
4. Justin sold one-third of his book collection and purchased ten more books. He now has fewer than 44 books.	**Equation** OR **Inequality**	**Shade right** OR **Shade left** OR **No shade**	**Open circle** OR **Solid circle**
5. In 8.5 hours, Gabby tutors 3 students and spends 3.5 hours in science lab. Her goal is to tutor each student for the same amount of time.	**Equation** OR **Inequality**	**Shade right** OR **Shade left** OR **No shade**	**Open circle** OR **Solid circle**
6. The perimeter of a rectangle is at most 56 feet. The length of the rectangle is 17 feet.	**Equation** OR **Inequality**	**Shade right** OR **Shade left** OR **No shade**	**Open circle** OR **Solid circle**

PAP Weekly Project 1.3

	Equation OR Inequality	Shade right OR Shade left OR No shade	Open circle OR Solid circle
7. A rental car costs $35 a day for the first 200 miles. Each additional mile is $0.75. The total cost of a trip is more than $150.			

Inequality Problems

Scott completes the following problem on a math test.

Write a real-world problem to match the inequality $6g - 10 \geq 35$.

Scott responded, "Randy has at most $35 to spend at the carnival on Saturday. He spends $10 on lunch. Ride tickets at the carnival are $6 per booklet. What's the maximum number of ticket booklets he can buy?"

Scott's response is marked incorrect. What mistake(s) did he make?

_____

_____

Rewrite Scott's response correctly.

_____

_____

_____

Inequality Rental

Ethan rents a car from a local company for a business trip. The company charges $35 plus $0.30 per mile. Ethan's company limits him to spending a maximum of $200 total for the rental. Write an inequality that can be used to determine, *m*, the number of miles Ethan could travel on this budget.

Inequality: _____

For each of the following, indicate whether the value is a reasonable solution to the inequality for the situation by writing **YES** or **NO** in the space provided. <u>Explain your responses.</u>

575 miles _____

200 miles _____

550 miles _____

550.5 miles _____

-35 miles _____