Two-Step Inequality-Problem Solving

Name_____ Date_____ Class_____

Carefully read each problem. Write, solve, and check each inequality. Then, explain what each solution means in context of the problem.

Problem	Define a variable, write the inequality, and solve for a solution.	Check your solution.
1. Lea needs at least $240 to buy new headphones. She has already saved $30. She earns $14 per car that she washes. What is the least number of cars she can wash to buy the headphones?	X = cars Lea must wash $14x + 30 \geq 240$ ① $-30 \quad -30$ ② $\frac{14x}{14} \geq \frac{210}{14}$ $x \geq 15$	$14(15)+30$ $210+30$ 240 ✓ $14(9)+30$ $126+30$ $156 \not\geq 240$
Explain your solution. Lea must wash at least 15 cars.		
2. Sylvia set a goal of saving at least $200 in a savings account. She currently has $60 in the account. If she invests $5 of her weekly allowance per week, how many weeks will it take her to reach her goal?	X = weeks needed to reach goal $5x + 60 \geq 200$<br$-60 \quad -60$ $\frac{5x}{5} \geq \frac{140}{5}$ $x \geq 28$	$5(28)+60 \geq 200$ $140+60 \geq 200$ $200 \geq 200$ ✓
Explain your solution. Sylvia has at least 28 weeks to reach her goal.		
3. Sam earns a weekly salary of $300. He also earns a commission of 4% on all of his sales. What is the minimum dollar amount of sales he must make to have a total weekly pay of $550?	X = dollars of sales Sam must have $.04x + 300 \geq 550$ $-300 \quad -300$ $\frac{.04x}{.04} \geq \frac{250}{.04}$ $x \geq 6250$	$.04(4802)+300$ $492 \not\geq 550$
Explain your solution.		

4. Kiari needs at least $4800 to buy her first car. She has already saved half. If she saves $50/week, what is the minimum number of weeks it will take her to save enough for the car?	$50x + 2400 \geq 4800$ $-2400 \quad -2400$ $\frac{50x}{50} \geq \frac{2400}{50}$ $x \geq 48$	
Explain your solution.		
5. Dylon decides to takes his friends to a movie with his $50 of birthday money. He must take one adult with him. An adult ticket costs $9.75. Each child ticket cost $6.25. What is the maximum number of friends Dylon could take with him to the movies?		
Explain your solution.		
6. You have $14 in your pocket. A taxi has a ride fee of $5 plus an additional fee of $0.60 per mile, what is the most miles you could ride in the taxi without using all of your money? (Mileage is rounded up if you stop before a complete mile.)	$.60x + 5 < 14 \leftrightarrow$ $-5 \quad -5$ $\frac{.60x}{.60} < \frac{9}{.60}$ $x < 15$	$.60(4) + 5 < 14$ $2.4 + 5 < 14$ $7.4 < 14$ ✓
Explain your solution.		
7. Caleb is making lemonade and cookies for the school bake sale. He has 10 cups of sugar. He needs two cups of sugar for lemonade. Each batch of cookies uses $1\frac{1}{2}$ cups of sugar. What is the maximum number of cookie batches he can make?		
Explain your solution.		