HW 4.2

Name:_____

Date:_____ Algebra:_____

1 Roger is having a picnic for 78 guests. He plans to serve each guest at least one hot dog. If each package, p, contains eight hot dogs, which inequality could be used to determine how many packages of hot dogs Roger will need to buy?

1) $p \geq 78$
2) $8p \geq 78$
3) $8 + p \geq 78$
4) $78 - p \geq 8$

2 An electronics store sells DVD players and cordless telephones. The store makes a \$75 profit on the sale of each DVD player (d) and a \$30 profit on the sale of each cordless telephone (c). The store wants to make a profit of at least \$255.00 from its sales of DVD players and cordless phones. Which inequality describes this situation?

1) $75d + 30c < 255$
2) $75d + 30c \leq 255$
3) $75d + 30c > 255$
4) $75d + 30c \geq 255$

4 The ninth grade class at a local high school needs to purchase a park permit for \$250.00 for their upcoming class picnic. Each ninth grader attending the picnic pays \$0.75. Each guest pays \$1.25. If 200 ninth graders attend the picnic, which inequality can be used to determine the number of guests, x, needed to cover the cost of the permit?

1) $0.75x - (1.25)(200) \geq 250.00$
2) $0.75x + (1.25)(200) \geq 250.00$
3) $(0.75)(200) - 1.25x \geq 250.00$
4) $(0.75)(200) + 1.25x \geq 250.00$

5 The length of a rectangle is 15 and its width is w. The perimeter of the rectangle is, *at most*, 50. Which inequality can be used to find the longest possible width?

1) $30 + 2w < 50$
2) $30 + 2w \leq 50$
3) $30 + 2w > 50$
4) $30 + 2w \geq 50$

Complete the following inequality modeling problems on this paper. Be sure to follow the steps:

1. **Model the situation with an inequality- be sure to define your variable!**
2. **Solve your inequality!**
3. **Answer the question in a full sentence!**

5 A prom ticket at Smith High School is $120. Tom is going to save money for the ticket by walking his neighbor's dog for $15 per week. If Tom already has saved $22, what is the minimum number of weeks Tom must walk the dog to earn enough to pay for the prom ticket?

6 Chelsea has $45 to spend at the fair. She spends $20 on admission and $15 on snacks. She wants to play a game that costs $0.65 per game. Write an inequality to find the maximum number of times, x, Chelsea can play the game. Using this inequality, determine the maximum number of times she can play the game.

5 Mr. Braun has $75.00 to spend on pizzas and soda pop for a picnic. Pizzas cost $9.00 each and the drinks cost $0.75 each. Five times as many drinks as pizzas are needed. What is the maximum number of pizzas that Mr. Braun can buy?

6 The Eye Surgery Institute just purchased a new laser machine for $500,000 to use during eye surgery. The Institute must pay the inventor $550 each time the machine is used. If the Institute charges $2,000 for each laser surgery, what is the *minimum* number of surgeries that must be performed in order for the Institute to make a profit?

Solve the following one variable inequalities:

7) $-36 \geq -6(b-6)$

8) $-4+\frac{k}{2} > -8$

9) $1 > \frac{x-2}{9}$

10) $6n+7 \leq -6-7n$