**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Per.\_\_\_\_\_\_\_**

**U10 CW #2** *Solving Inequalities*

**Directions:** Given the inequality, represent the problem on the number line.



1. x > 2



1. x < -3



1. x = 5



1. x ≥ -4



1. x ≤ 3



1. 2x › 6



1. -2x › 6

Remember: What do you need to do when you multiply/divide both sides by a negative number in an inequality?

**Directions:** Solve each inequality. **SHOW ALL STEPS!!!**

1. Graph each solution on a number line.
2. Check your solution.

|  |  |
| --- | --- |
| 1. $ 4m-8+3m \geq -1$ | a) b) Verify: |
| 2. $ x-3+5x > -3$ | a) b) Verify: |
| 3. $ -4x-6x \geq 20$ | a) b) Verify: |
| 4. $17\leq -4p+3+6$ | a) b) Verify: |
| 5. $-8\left(5n-11\right)\leq -(7n+9)$ | a) b) Verify: |
| 6. $-21n+12 < -2(12+5n)$ | a) b) Verify: |
| 7. $-10\left(n+8\right)+ 12\geq -2(12+5n)$ | a) b) Verify: |
| 8. $-2a+ \frac{5}{3}a \leq -\frac{8}{9}$ | a) b) Verify: |

**Directions:** Solve each problem. First, write the expressions that represent each part of the problem and create an inequality that matches the context with the correct sign ($<, >, \leq , \geq )$. Then, solve the inequality to answer the question. Write out your answer in a complete sentence using the context of the problem and units.

9. You are going on a field trip and need to choose where to go. The zoo charges a $100 fee, plus $10 per student. The museum charges a $250fee, plus $5 per student. How many students need to go on the trip in order for the museum to be a better deal?

10. One of the most common ways that teenagers start to make money is by selling candy. You buy a case of 30 big candy bars for $26. If you sell each candy bar for $1, you can get a $4 profit. If you and your friend, Jonah, are both selling candy, we can represent this relationship by using and proving the **distributive property**. You and Jonah sold a lot of candy bars. Let’s say you sold 15 boxes in one week and he sold *x* boxes. How many boxes does Jay have to sell if you want to make at least $180 together?

11. Billy procrastinated and didn’t do his reading log. He needs to read 500 minutes in six days to complete his assignment. If he already reads 15 minutes every day, how may additional minutes does he need each day to read at least 500 minutes? (Hint: use the distribution property in the inequality.)

12. Kimberly took her 5 nieces and nephews to a local hockey game. She wants to buy each person, and herself, a snack. The tickets cost $4 a piece at the door. How much can she spend on each snack if she has $42 with her? Remember to include Kimberly. (Hint: use the distribution property in the inequality.)