Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Assignment: Solving Absolute Value Inequalities Algebraically**

**Solve algebraically and graph the solution using a number line. Show Work!**

1. $\left|x+7\right|>2$ 2. $8\left|x\right|+10>26$ 3. $\left|7x+14\right|\leq 35$

4. $-2\left|x-6\right|+1<-11$ 5. $\left|2x-3\right|\geq -5$ 6. $4\left|x+5\right|-6<2$

7. $\left|3x-2\right|+7\leq 5$ 8. $3\left|2x+5\right|-8\geq 13$ 9. $3\left|2x-9\right|\leq 81$

10. The IQ scores for the middle 50% of the population can be written as $\left|x-100\right|\leq 10$, where *x* is a person’s IQ. Solve this inequality to find an interval for the IQ scores for the middle 50% of the population.

11. Twenty cubic feet of marble can weigh 3400 pounds, plus or minus 100 pounds. This can be modeled by the inequality $\left|20x-3400\right|\leq 100$. Solve the inequality to find the possible weights of a cubic foot of marble.