

Name: _____

Absolute Value Inequalities

Exercise 1: For each of the following, write an equivalent sentence that does not use absolute value symbols. Do not solve the resulting sentences.

1) $|2x-1| > 3$

2) $|3x-9| \leq 2$

3) $|2x-9| < 3$

4) $|5x-4| \leq 9$

5) $|5x-7(x-2)| > 1$

6) $|2-9x| < 6$

7) $|3x-2(2-2x)| \geq 11$

8) $|5-3x| < 7$

9) $|x-11| \leq 3$

Exercise 2: Solve and check each of the following sentences. Be sure to write a nice, clean list of equivalent sentences.

1) $4+|x-2| > 12$

2) $7-|x+10| \leq 3$

3) $|9-x|-9 < 2$

4) $|6x-5|-9 \leq 11$

5) $|4x-2(3x-2)|-2 > 3$

6) $|11-12x| < 10$

7) $|1-x| \leq 8$

8) $|x(x+3)-x^2+2| \geq 1$

9) $1-|x(x-2)-x^2+12| \geq 11$

10) $\left|\frac{4-2x}{3}\right|+2 < 36$

11) $\left|\frac{x+1}{4}\right|-5 < 7$

12) $\left|\frac{x-8}{2}\right|-11 < 9$