

Solving: *Absolute Value Equations and Inequalities*

Solve the equation or inequality.

1. $|2x - 3| = 7$

7. $|2p - 7| - 5 \leq 8$

2. $2|m + 4| = 6$

8. $3|x - 4| + 2 < 1$

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

9. $|a - 7| > -10$

4. $|2x + 7| \geq 15$

10. $2|x + 5| - 4 \geq 12$

5. $|3y - 2| > 12$

11. $4|x - 2| + 3 < 7$

6. $|2x + 3| = |4x - 7|$

12. $5|2n - 7| + 8 = 13$

ANSWERS: Inequality solutions are given in two formats. Ask your instructor which they prefer.

1. $x = -2, 5$

4. $m \leq -11$ or $m \geq 4$
 $(-\infty, -11] \cup [4, \infty)$

7. $-3 \leq x \leq 10$
 $[-3, 10]$

10. $x \leq -13$ or $x \geq 3$
 $(-\infty, -13] \cup [3, \infty)$

2. $m = -7, -1$

5. $m < -3\frac{1}{3}$ or $m > 4\frac{2}{3}$
 $(-\infty, -3\frac{1}{3}) \cup (4\frac{2}{3}, \infty)$

8. No solution

11. $1 < p < 3$
 $(1, 3)$

3. $-1 < y < 5$
 $(-1, 5)$

6. $x = \frac{2}{3}, 5$

9. All Real Numbers
 $(-\infty, \infty)$

12. $x = 3, 4$