

Absolute Value and Radical Equations and Inequalities Review Sheet

I. Absolute Value Equations and Inequalities

1. What is the solution set of the inequality $|3 - 2x| \geq 4$?

(1) $\{x \mid \frac{7}{2} \leq x \leq -\frac{1}{2}\}$

(3) $\{x \mid x \leq -\frac{1}{2} \text{ or } x \geq \frac{7}{2}\}$

(2) $\{x \mid -\frac{1}{2} \leq x \leq \frac{7}{2}\}$

(4) $\{x \mid x \leq \frac{7}{2} \text{ or } x \geq -\frac{1}{2}\}$

2. The solution of $|2x - 3| < 5$ is

(1) $x < -1$ or $x > 4$

(3) $x > -1$

(2) $-1 < x < 4$

(4) $x < 4$

3. Which equation states that the temperature, t , in a room is less than 3° from 68° ?

(1) $|3 - t| < 68$

(3) $|68 - t| < 3$

(2) $|3 + t| < 68$

(4) $|68 + t| < 3$

4. Find the solution set of $|2x + 5| = 11$

5. Find the solution set of $|3x - 9| = 15$

6. Find the solution set of $\left| \frac{2x-8}{3} \right| \leq 6$

7. Find the solution set of $\left| \frac{2x-7}{3} \right| \geq 5$

8. Find all values of x : $|4x - 6| + 2x = 8$

9. Find all values of n : $|3n + 5| - n = 7$

II. Radical Equations

10. Solve for all values of q that satisfy the equation $\sqrt{3q+7} = q+3$.

11. Solve algebraically: $\sqrt{x+5} + 1 = x$