



This worksheet focuses on mastering the process of solving equations and inequalities that involve absolute value expressions. Work through each question carefully, showing all steps in your solution.

## Easy Questions

1. Solve the equation  $|x| = 5$ .
2. Solve the equation  $|x| = 0$ .
3. Solve the equation  $|x - 3| = 4$ .
4. Solve the equation  $|x + 2| = 7$ .
5. Solve the equation  $|2x| = 10$ .

## Intermediate Questions

6. Solve the equation  $|x - 1| = 3$ .
7. Solve the equation  $|2x + 1| = 5$ .
8. Solve the equation  $|x + 4| = 9$ .
9. Solve the equation  $|x - 5| = |x + 1|$ .
10. Solve the inequality  $|x| < 3$ .
11. Solve the inequality  $|x - 2| \leq 4$ .
12. Solve the inequality  $|x + 1| > 2$ .
13. Solve the inequality  $|2x - 3| \geq 5$ .
14. Solve the inequality  $1 < |x - 2| < 4$ .
15. Solve the inequality  $\left| \frac{x}{2} - 3 \right| \leq 2$ .
16. Solve the inequality  $|3 - x| \geq 7$ .
17. Solve the inequality  $|2x + 3| < 9$ .
18. Solve the inequality  $|x + 2| \geq 5$ .

19. Solve the inequality  $\left|\frac{x}{3}\right| \leq 4$ .
20. Solve the inequality  $|x - 4| > 6$ .

## Hard Questions

21. Solve the equation  $|3x - 2| = |x + 4| + 1$ .
22. Solve the inequality  $|2x - 5| - |x + 3| \leq 1$ .
23. Solve the equation  $|x - 1| + |2x + 3| = 7$ .
24. Solve the inequality  $|3 - 2x| + |x + 1| \geq 8$ .
25. Solve the equation  $|x + 2| = |2x - 1|$ .
26. Solve the inequality  $|x - 3| \geq |2x + 1|$ .
27. Solve the equation  $|2x + 5| = 3|x - 1|$ .
28. Solve the inequality  $\left|\frac{x}{2} + 1\right| > 3$ .
29. Solve the equation  $|x - 4| + |x + 2| = 10$ .
30. Solve the inequality  $|2x - 1| < |x + 4|$ .