Algebra 1

Topic: Solving Absolute Value Inequalities

Instructions

Solve the inequality. Graph the solution, if possible.

Practice Problems

1. Solve: $|x - 3| < 7$
2. Solve: $|2x + 1| \geq 5$
3. Solve: $|x + 4| \leq 6$
4. Solve: $|3x - 2| > 10$
5. Solve: $|x| \leq 8$
6. Solve: $|2x - 5| > 9$
7. Solve: $|x + 6| \geq 3$
8. Solve: $|x - 4| < 2$

Multiple Choice Questions

1. Solve $|x + 3| < 5$. What is the solution?

   A) $x > 8$
   B) $-8 < x < 2$
   C) $-2 < x < 8$
   D) $x < -8$

2. Solve $|2x - 3| \geq 7$. What is the solution?

   A) $x \leq -2$ or $x \geq 5$
   B) $-2 < x < 5$
   C) $x < -5$
   D) $x \geq -7$

3. Solve $|x - 4| > 6$. What is the solution?

   A) $x < -2$ or $x > 10$
   B) $-2 < x < 10$
   C) $x > -6$
   D) $x \geq 10$

4. Solve $|3x + 2| \leq 8$. What is the solution?

   A) $x \geq -\frac{10}{3}$ and $x \leq 2$
   B) $x > -2$ and $x < 8$
   C) $-\frac{10}{3} \leq x \leq 2$
   D) $x \geq -2$ or $x \leq 6$

Challenge Problems

1. Solve: $|5x - 7| \geq 12$
2. Solve: $|x + 4| < 3$
3. Solve: $|2x - 1| > 6$
4. Solve: $|x| \leq 10$