A2.A.1: Absolute Value Inequalities 1: Solve absolute value equations and inequalities involving linear expressions in one variable

1 The solution set of the inequality $|x - 3| < 5$ is
1) $\{x < 8 \text{ and } x < -2\}$
2) $\{x < 8 \text{ or } x < -2\}$
3) $\{x < 8 \text{ and } x > -2\}$
4) $\{x > 8 \text{ or } x < -2\}$

2 The solution set of $|x - 3| > 5$ is
1) $\{x < 8 \text{ and } x < -2\}$
2) $\{x < 8 \text{ or } x < -2\}$
3) $\{x < 8 \text{ and } x > -2\}$
4) $\{x > 8 \text{ or } x < -2\}$

3 What is the solution of the inequality $|x + 3| \leq 5$?
1) $-8 \leq x \leq 2$
2) $-2 \leq x \leq 8$
3) $x \leq -8$ or $x \geq 2$
4) $x \leq -2$ or $x \geq 8$

4 What is the solution of the inequality $\left| y + 8 \right| > 3$
1) $y > -5$ or $y < -11$
2) $y > -5$
3) $-11 < y < -5$
4) $-5 < y < 11$

5 The solution of $|2x - 3| < 5$ is
1) $x < -1$ or $x > 4$
2) $-1 < x < 4$
3) $x > -1$
4) $x < 4$

6 What is the solution of the inequality $|2x - 5| < 1$?
1) $x < 3$
2) $2 < x < 3$
3) $x > -3$
4) $x \leq 2$ or $x \geq 3$

7 What is the solution set of the inequality $|3x + 6| \leq 30$?
1) $-12 \leq x \leq 8$
2) $-8 \leq x \leq 12$
3) $x \leq -12$ or $x \geq 8$
4) $x \leq -8$ or $x \geq 12$

8 What is the solution set of the inequality $|2x - 1| < 9$?

1) $\{x|-4 < x < 5\}$
2) $\{x|x < -4 \text{ or } x > 5\}$
3) $\{x|x < 5\}$
4) $\{x|x < -4\}$

9 Which represents the solution set for x in the inequality $|2x - 1| < 7$?

1) $\{x|x < -3 \text{ or } x > 4\}$
2) $\{x|x < -4 \text{ or } x > 3\}$
3) $\{x|-4 < x < 3\}$
4) $\{x|-3 < x < 4\}$

10 The solution set of $|x - 2| < 3$ is

1) $\{x|x > 5\}$
2) $\{x|x < -1\}$
3) $\{x|-1 < x < 5\}$
4) $\{x|x < -1 \text{ or } x > 5\}$

11 What is the solution set of $|4x + 8| > 16$?

1) $\{x|-6 < x < 2\}$
2) $\{x|-2 < x < 6\}$
3) $\{x|x < -6 \text{ or } x > 2\}$
4) $\{x|x < -2 \text{ or } x > 6\}$

12 Which is the solution set for $|x - 1| < 5$?

1) $\{x|-6 < x < 4\}$
2) $\{x|-4 < x < 6\}$
3) $\{x|x < -4 \text{ or } x > 6\}$
4) $\{x|x < -6 \text{ or } x > 4\}$

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

1) $\left\{x|\frac{7}{2} \leq x \leq -\frac{1}{2}\right\}$
2) $\left\{x|-\frac{1}{2} \leq x \leq \frac{7}{2}\right\}$
3) $\left\{x|x \leq -\frac{1}{2} \text{ or } x \geq \frac{7}{2}\right\}$
4) $\left\{x|x \leq \frac{7}{2} \text{ or } x \geq -\frac{1}{2}\right\}$

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Answer Section

1	ANS: 3	REF: 019719siii
2	ANS: 4	REF: 019823siii
3	ANS: 1	REF: 080203b
4	ANS: 1	REF: 010610b
5	ANS: 2	REF: 080509b
6	ANS: 2	REF: 060907b
7	ANS: 1	REF: 069821siii
8	ANS: 1	REF: 010710b
9	ANS: 4	REF: 068024siii
10	ANS: 3	REF: 068718siii
11	ANS: 3	REF: 010423siii
12	ANS: 2	REF: 018921siii
13	ANS: 3	REF: 060318b