

CHAPTER 3 | PRACTICE TEST

Solving Linear Inequalities

Name _____

Date _____

Show your work. No calculator. Label endpoints and choose a useful graph scale. Explain when asked.

1. Write and graph an inequality: a number x is no more than -2 .
2. Determine whether $x = 3$ satisfies $2x + 1 \leq 7$. Show a substitution.
3. Solve and graph $x - 8 > -3$.
4. Solve and graph $-4x \leq 20$.
5. Solve $\frac{x}{-2} \geq 3$.

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6. Solve and graph $3(x - 2) < 2x + 5$.

7. Solve each inequality.

(a) $2(x + 3) \leq 2x + 8$

(b) $3x - 1 > 3(x + 2)$

8. A club has \$18 saved and earns \$7 per car washed. It needs at least \$80. Write and solve an inequality and give the minimum whole number of cars.

9. Solve and graph $-2 \leq 2x + 4 < 10$. State the interval.

10. Solve and graph $3x + 1 < -5$ or $2x - 3 \geq 7$. State the union of intervals.

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11. Solve and graph $|x - 3| \leq 4$.

12. Solve and graph $2|x + 1| - 3 > 7$.

13. State the solution set of each.

(a) $|2x - 1| < -3$

(b) $|x + 5| \geq -2$

14. A package must weigh within 0.2 kg of 3 kg, including the boundaries. Write and solve an absolute-value inequality. Would 3.25 kg be accepted? Explain.

15. A student solves $5 - 2x \geq 9$ and writes $x \geq -2$. Correct the solution, explain the error, and check one value in the original inequality.
