

Name: _____
Algebra 1

Date: _____
Band: _____

Unit 3: Solving Inequalities Study Guide

LT#1: Write, graph, and identify solutions of inequalities.

Graph each inequality.

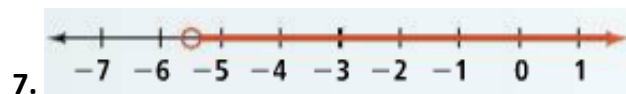
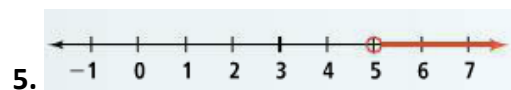
1. $x > 6$

2. $h \leq -1$

3. $10 \geq p$

4. $r < 3.2$

Write an inequality for each graph.



LT#2: Use addition and subtraction to solve inequalities.

Solve each inequality. Graph your solutions.

8. $w + 3 > 9$

9. $v - 6 < 4$

10. $-4 < t + 8$

11. $n - \frac{1}{2} \geq \frac{3}{4}$

12. $22.3 \leq 13.7 + h$

13. $q + 0.5 > -2$

14. You have at most \$15.00 to spend. You want to buy a used CD that costs \$4.25. Write and solve an inequality to find the possible additional amounts you can spend.

LT#3: Use multiplication or division to solve inequalities.

Solve each inequality. Graph your solutions.

15. $5x < 15$

16. $-6t > 18$

17. $\frac{y}{3} \leq 2$

18. $-\frac{h}{4} < 6$

19. $25.5g > 102$

20. $-\frac{3}{5}n \geq -9$

21. $44.5 \leq 2.7d$

22. $-17.1m > 23.8$

23. You earn \$7.25 per hour baby-sitting. Write and solve an inequality to find how many full hours you must work to earn at least \$200.

LT#4: Solve multi-step inequalities.

Solve each inequality.

24. $4k - 1 \geq -3$

25. $6(c - 1) < -18$

26. $3t > 5t + 12$

$$27. -\frac{6}{7}y - 6 \geq 42$$

$$28. 4 + \frac{x}{2} > 2x$$

$$29. 3x + 5 \leq 2x - 8$$

$$30. 13.5a + 7.4 \leq 85.7$$

$$31. 42w > 2(w + 7)$$

32. A salesperson earns \$200 per week plus a commission equal to 4% of her sales. This week her goal is to earn no less than \$450. Write and solve an inequality to find the amount of sales she must have to reach her goal.

LT#5: Solve and graph inequalities containing the word *and*.

LT#6: Solve and graph inequalities containing the word *or*.

Solve each compound inequality.

$$33. -2 \leq d + \frac{1}{2} < 4\frac{1}{2}$$

$$34. 0 < -8b \leq 12$$

$$35. 2t \leq -4 \text{ or } 7t \geq 49$$

$$36. 5m < -10 \text{ or } 3m > 9$$

$$37. -1 \leq a - 3 \leq 2$$

$$38. 9.1 > 1.4p \geq -6.3$$

39. A town's high temperature for a given month is 88°F and the low temperature is 65°F . Write a compound inequality to represent the range of temperatures for the given month.

LT#7: Solve equations and inequalities using absolute value.

Solve each equation or inequality. If there is no solution, write *no solution*.

40. $|y| = 3$

41. $|n + 2| = 4$

42. $4 + |r + 2| = 7$

43. $|x + 3| = -2$

44. $|5x| \leq 15$

45. $|3d + 5| < -2$

46. $|2x - 7| - 1 > 0$

47. $4|k + 5| > 8$

48. The ideal length of a certain nail is 20 mm. The actual length can vary from the ideal by at most 0.4mm. Find the range of acceptable lengths of the nail.