

Practice 3-2

Solving Inequalities Using Addition and Subtraction

Solve each inequality. Graph and check the solution.

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|------------------------------------|----------------------------------------|----------------------|------------------------|
| 1. $n - 7 \geq 2$ | 2. $10 + y > 12$ | 3. $3.2 < r + 4.7$ | 4. $7 + b > 13$ |
| 5. $n + \frac{3}{4} > \frac{1}{2}$ | 6. $-\frac{5}{7} \geq c + \frac{2}{7}$ | 7. $g + 4.6 < 5.9$ | 8. $0 > d - 2.7$ |
| 9. $f + 4 \geq 14$ | 10. $x + 1 \leq -3$ | 11. $d - 13 \leq -8$ | 12. $m - 7 \geq -8$ |
| 13. $12 + v < 19$ | 14. $-4 \leq t + 9$ | 15. $6 < y - 3$ | 16. $a + 15 > 19$ |
| 17. $8 + d < 9$ | 18. $s + 3 \leq 3$ | 19. $9 + h \leq 5$ | 20. $7.6 \geq t - 2.4$ |

Write and solve an inequality that models each situation.

- It will take at least 360 points for Kiko's team to win the math contest. The scores for Kiko's teammates were 94, 82, and 87, but one of Kiko's teammates lost 2 of those points for an incomplete answer. How many points must Kiko earn for her team to win the contest?
- This season, Nora has 125 at-bats in softball. By the end of the season she wants to have at least 140 at-bats. How many more at-bats does Nora need to reach her goal?
- The average wind speed increased 19 mi/h from 8 A.M. to noon. The average wind speed decreased 5 mi/h from noon to 4 P.M. At 4 P.M., the average wind speed was at least 32 mi/h. What is the minimum value of the average wind speed at 8 A.M.?
- Suppose it takes no more than 25 min for you to get to school. If you have traveled for 13.5 min already, how much longer, at most, might you take to get to school?
- Joan has started a physical fitness program. One of her goals is to be able to run at least 5 mi without stopping. She can now run 3.5 mi without stopping. How many more miles must she run non-stop to achieve her goal?
- Suppose you can get a higher interest rate on your savings if you maintain a balance of at least \$1000 in your savings account. The balance in your savings account is now \$1058. You deposit \$44.50 into your account. What is the greatest amount that you can withdraw and still get the higher interest rate?

Solve each inequality. Graph and check the solution.

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| 27. $\frac{3}{4} + z \geq -\frac{3}{4}$ | 28. $12 + d + 3 \leq 10$ | 29. $v - \frac{3}{4} > 1\frac{1}{4}$ | 30. $8 + m > 4$ |
| 31. $2 + f > -3$ | 32. $-27 \geq w - 24$ | 33. $b + \frac{1}{2} > \frac{3}{4}$ | 34. $12 + t < 4 - 15$ |
| 35. $-14 > -16 + u$ | 36. $-7 \leq -11 + z$ | 37. $38 \geq 33 + b$ | 38. $k - 27 < -29$ |
| 39. $a + 8 \leq 10$ | 40. $b + 6 > 17$ | 41. $13 < 8 + k - 6$ | 42. $j + 1.3 > 2.8$ |