

Practice 3-4

Solving Multi-Step Inequalities

Solve each inequality. Graph and check the solution.

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|-----------------------------|----------------------------------------|---------------------------------------|
| 1. $2z + 7 < z + 10$ | 2. $4(k - 1) > 4$ | 3. $1.5 + 2.1y < 1.1y + 4.5$ |
| 4. $h + 2(3h + 4) \geq 1$ | 5. $r + 4 > 13 - 2r$ | 6. $6u - 18 - 4u < 22$ |
| 7. $2(3 + 3g) \geq 2g + 14$ | 8. $2h - 13 < -3$ | 9. $-4p + 28 > 8$ |
| 10. $8m - 8 \geq 12 + 4m$ | 11. $5 + 6a > -1$ | 12. $\frac{1}{2}(2t + 8) \geq 4 + 6t$ |
| 13. $-5x + 12 < -18$ | 14. $2(3f + 2) > 4f + 12$ | 15. $13t - 8t > -45$ |
| 16. $2(c - 4) \leq 10 - c$ | 17. $\frac{1}{2}t - \frac{1}{3}t > -1$ | 18. $3.4 + 1.6v < 5.9 - 0.9v$ |

Write and solve an inequality that models each situation.

- Ernest works in the shipping department loading shipping crates with boxes. Each empty crate weighs 150 lb. How many boxes, each weighing 35 lb, can Ernest put in the crate if the total weight is to be no more than 850 lb?
- Beatriz is in charge of setting up a banquet hall. She has five tables that will seat six people each. If no more than 62 people will attend, how many tables seating four people each will she need?
- Suppose it costs \$5 to enter a carnival. Each ride costs \$1.25. You have \$15 to spend at the carnival. What is the greatest number of rides that you can go on?
- The cost to rent a car is \$19.50 plus \$.25 per mile. If you have \$44 to rent a car, what is the greatest number of miles that you can drive?
- The student council is sponsoring a concert as a fund raiser. Tickets are \$3 for students and \$5 for adults. The student council wants to raise at least \$1000. If 200 students attend, how many adults must attend?

Solve each inequality. Check the solution.

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|--------------------------------|-------------------------------------------------|----------------------------------------------------|
| 24. $-18 < 2(12 - 3b)$ | 25. $5n + 3 - 4n < -5 - 3n$ | 26. $36 > 4(2d + 10)$ |
| 27. $2(5t - 25) + 5t < -80$ | 28. $3j + 2 - 2j < -10$ | 29. $\frac{2}{5}(5x - 15) \geq 4$ |
| 30. $7(2z + 3) > 35$ | 31. $2(3b - 2) < 4b + 8$ | 32. $\frac{1}{2}y + \frac{1}{4}y \geq -6$ |
| 33. $8(3f - 6) < -24$ | 34. $\frac{3}{4}k < \frac{3}{4} - \frac{1}{4}k$ | 35. $3(4g - 6) \geq 6(g + 2)$ |
| 36. $\frac{1}{2}(2g + 4) > -7$ | 37. $4(1.25y + 4.2) < 16.8$ | 38. $38 + 7t > -3(t + 4)$ |
| 39. $4(2d + 1) > 28$ | 40. $4(n - 3) < 2 - 3n$ | 41. $\frac{3}{4}d - \frac{1}{2} \leq 2\frac{1}{2}$ |