5-3 Practice
Solving Multi-Step Inequalities

Justify each indicated step.

1. $x > \dfrac{5x - 12}{8}$

$8x > (8)\dfrac{5x-12}{8}$ **a.** ___?___

$8x > 5x - 12$

$8x - 5x > 5x - 12 - 5x$ **b.** ___?___

$3x > -12$

$\dfrac{3x}{3} > \dfrac{-12}{3}$ **c.** ___?___

$x > -4$

2. $2(2h + 2) < 2(3h + 5) - 12$

$4h + 4 < 6h + 10 - 12$ **a.** ___?___

$4h + 4 < 6h - 2$

$4h + 4 - 6h < 6h - 2 - 6h$ **b.** ___?___

$-2h + 4 < -2$

$-2h + 4 - 4 < -2 - 4$ **c.** ___?___

$-2h < -6$

$\dfrac{-2h}{-2} > \dfrac{-6}{-2}$ **d.** ___?___

$h > 3$

Solve each inequality. Check your solution.

3. $-5 - \dfrac{t}{6} \geq -9$

4. $4u - 6 \geq 6u - 20$

5. $13 > \dfrac{2}{3}a - 1$

6. $\dfrac{w + 3}{2} < -8$

7. $\dfrac{3f - 10}{5} > 7$

8. $h \leq \dfrac{6h + 3}{5}$

9. $3(z + 1) + 11 < -2(z + 13)$

10. $3r + 2(4r + 2) \leq 2(6r + 1)$

11. $5n - 3(n - 6) \geq 0$

Define a variable, write an inequality, and solve each problem. Check your solution.

12. A number is less than one fourth the sum of three times the number and four.

13. Two times the sum of a number and four is no more than three times the sum of the number and seven decreased by four.

14. GEOMETRY The area of a triangular garden can be no more than 120 square feet. The base of the triangle is 16 feet. What is the height of the triangle?

15. MUSIC PRACTICE Nabuko practices the violin at least 12 hours per week. She practices for three fourths of an hour each session. If Nabuko has already practiced 3 hours in one week, how many sessions remain to meet or exceed her weekly practice goal?