Lesson 5-7: Solve Multi-Step Inequalities

1. Sample answers: To solve multi-step equations and multi-step inequalities combine like terms and use properties of operations and inverse operations to solve them. The solution to a multi-step equation is a single value while the solution to inequalities includes more values.

2. Sample answer: Use the Distributive Property to expand 5(2t + 3). Then use the Commutative Property to put the like terms next to each other and combine the like terms. Next, use the Subtraction Property of Inequality and the Division Property of Inequality to solve the inequality.

3. Yes; Sample answer: The inequality r > 7 has solutions that are greater than, but not equal to 7, which is shown on a graph the way that Gloria stated.

4. n < 2

5. x ≤ -5

6. f > 14

7. a. x < -1
   b. A

8. a. Michelle subtracted 6 from -22 when she should have added it.
   b. y > -2

9. x > 35

10. No; Sample answer: The left side of the inequality has only numerical constants which can be combined before multiplying. However, on the right side, x and -2 are not like terms so they cannot be combined. Sierra needs to apply the Distributive Property so that -4 is multiplied by each term. Then she can combine 8 and -3 on the right side.

11. a. z ≤ 7
    b. z > 7
    c. No

12. w > 5; On average, there were more than 5 walnuts in each spoonful.

13. y < -1

14. z > -3   z ≤ 4
    Inequality 1 has 5 as a solution.

15. 1.5b + 200 ≥ 500
    b ≥ 200
    The band must sell at least 200 bumper stickers.