Study Guide

Be able to…

  ✓ Solve and graph multi-step inequalities (Sections 6.1 & 6.2)
  ✓ Solve and graph compound inequalities (Section 6.3)
  ✓ Solve absolute value equations (Section 6.4)
  ✓ Solve absolute value inequalities (Section 6.4)
  ✓ Set up equations and inequalities from real life scenarios (applications)

Solve the following inequalities and graph the solutions.

1. $x + 5 \geq 3$

2. $-2 > x - 4$

3. $n - 5 \leq 3$

4. $3 + n > -3$

5. $6 > -3x$

6. $-4x + 2 > -18$

7. $\frac{a}{4} > -2$

8. $\frac{2}{3}x \leq 12$

9. $-10 > b - 6$

10. $5x - 2 > -17$

11. $-x - 4 \geq 3x - 2$

12. $12 > -2x - 6$

Solve the following inequalities and graph the solutions.

13. $-x + 6 > -(2x + 4)$

14. $\frac{1}{2}x + 3 \leq 7$

15. $2x - 1 > 6x + 2$

16. $-2x + 2 < -12$

17. $10 - c \geq 6$

18. $\frac{7}{3}x - 1 \geq 6$

Write a compound inequality that represents the statement.

19. x is less than 8 and greater than 2

20. x is less than -1 and at least -5

21. x is greater than 6 or less than 5

Solve the following inequalities and graph the solutions.

22. $6 < x - 6 \leq 8$

23. $-3x - 7 \geq 8 \quad or \quad -2x - 11 \leq -31$

Solve the following inequalities and graph the solutions.

24. $-13 \leq 5 + 2x < 9$

25. $2x + 7 < 3 \quad or \quad 5x + 5 \geq 10$

26. $-4 < 4x - 8 < 12$

27. $-2x > 6 \quad or \quad 2x + 1 > 5$

Solve the following absolute value equations.

28. $|x| = 21$

29. $|x + 8| = 9$

30. $|4x - 2| = 22$

31. $|7x + 3| + 2 = 33$

Solve the following absolute value inequalities and graph the solutions.

32. $|x + 12| > 36$

33. $|x - 3| \leq 17$

34. $|x + 2| - 5 > 8$

35. $|5x + 1| - 8 \leq 16$

36. You are going to a Phillies game this spring. The ticket costs $31. Popcorn costs $4.25 per box. You have $60 in your wallet.

   a.) Write an equation that models this scenario.

   b.) Solve the equation. How many boxes of popcorn will you be able to afford if you want to spend all of your money?