

3-7**Practice**

Form G

Absolute Value Equations and Inequalities**Solve each equation. Graph and check your solutions.**

1. $|b| = \frac{2}{3}$

2. $10 = |y|$

3. $|n| + 2 = 5$

4. $4 = |s| - 3$

5. $|x| - 5 = -1$

6. $7|d| = 49$

Solve each equation. If there is no solution, write *no solution*.

7. $|r - 9| = -3$

8. $|c + 3| = 15$

9. $1 = |g + 3|$

10. $2 = \left| m + \frac{2}{3} \right|$

11. $-2|3d| = 4$

12. $-3|2w| = -6$

13. $4|v - 5| = 16$

14. $3|d - 4| = 12$

15. $|3f + 0.5| - 1 = 7$

Solve and graph each inequality.

16. $|x| > 1$

17. $|x| < 2$

18. $|x + 3| < 10$

19. $|y + 4| > 12$

20. $|y - 1| \leq 8$

21. $|p - 6| \geq 5$

22. $|3c - 4| > 12$

23. $\left| 2t + \frac{2}{3} \right| \leq 4$

3-7 Practice (continued)

Absolute Value Equations and Inequalities

Form G

Solve each equation or inequality. If there is no solution, write *no solution*.

24. $|d| + 3 = 33$

25. $1.5|3p| = 4.5$

26. $\left|d + \frac{2}{3}\right| + \frac{3}{4} = 0$

27. $|f| - \frac{1}{5} = \frac{3}{15}$

28. $7|3y - 4| - 8 \leq 48$

29. $|t| - 1.2 = 3.8$

30. $-1|c + 4| = -3.6$

31. $\frac{|y|}{4} < 3$

32. $|9d| > 6.3$

Write an absolute value inequality that represents each set of numbers.

33. all real numbers less than 3 units from 0

34. all real numbers at most 6 units from 0

35. all real numbers more than 4 units from 6

36. all real numbers at least 3 units from -2

37. A child takes a nap averaging three hours and gets an average of 12 hours of sleep at night. Nap time and night time sleep can each vary by 30 minutes. What are the possible time lengths for the child's nap and night time sleep?

38. In a sports poll, 53% of those surveyed believe their high school football team will win the state championship. The poll shows a margin of error of ± 5 percentage points. Write and solve an absolute value inequality to find the least and the greatest percent of people that think their team will win the state championship.