

Unit 0 0.4 HW Absolute Value Equations and Inequalities

Solve each equation. Check your answers.

1. $|-3x|=18$

2. $|5y|=35$

3. $|t+5|=8$

4. $3|z+7|=12$

5. $|2x-1|=5$

6. $|4-2y|+5=9$

Solve each equation. Check for extraneous solutions.

7. $|x+5|=3x-7$

8. $|2t-3|=3t-2$

9. $|4w+3|-2=5$

10. $2|z+1|-3=z-2$

Solve each inequality. Graph the solution.

11. $5|y+3|<15$

12. $|2t-3|\leq 5$

13. $|4b|-3>9$

14. $\frac{1}{2}|2w-1|-3\geq 1$

15. $2|4x+1|-5\leq 1$

16. $|3z-2|+5>9$

Write each compound inequality as an absolute value inequality.

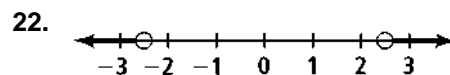
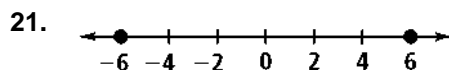
17. $-7.3\leq a\leq 7.3$

18. $11\leq m\leq 19$

19. $28.6\leq F\leq 29.2$

20. $0.0015\leq t\leq 0.0018$

Write an absolute value equation or inequality to describe each graph.



Solve each equation.

23. $3|2x + 5| = 9x - 6$

25. $2|4w - 5| = 12w - 18$

27. $|5p + 3| - 4 = 2p$

24. $|4 - 3m| = m + 10$

26. $\frac{3}{4}|8t - 12| = 6(t - 1)$

28. $|7y - 3| + 1 = 0$

Solve each inequality. Graph the solution.

29. $-3|2t + 1| < 9$

31. $\left|\frac{y + 2}{3}\right| - 1 < 2$

30. $|-2x + 4| \geq 4$

32. $\frac{1}{7}|4z + 5| + 2 > 5$

Write an absolute value inequality to represent each situation.

33. To become a potential volunteer donor listed on the National Marrow Donor Program registry, a person must be between the ages of 18 and 60. Let a represent the age of a person on the registry.

34. Two friends are hiking in Death Valley National Park. Their elevation ranges from 228 ft below sea level at Badwater to 690 ft above sea level at Zabriskie Point. Let x represent their elevation.

35. The outdoor temperature ranged between 37°F and 62°F in a 24-hour period. Let t represent the temperature during this time period.

The diameter of a ball bearing in a wheel assembly must be between 1.758 cm and 1.764 cm.

36. What is the tolerance?

37. What absolute value inequality represents the diameter of the ball bearing? Let d represent the diameter in cm.