

Practice C

For use with pages 24–30

Check whether the given number is a solution of the equation.

- | | | |
|----------------------------------|----------------------------|---|
| 1. $3x + 5 = 7$; 4 | 2. $17 - 4x = 9$; 2 | 3. $7 + x^2 = 32$; 5 |
| 4. $0 = x^2 - 22$; 11 | 5. $9x - 8 = 6x + 1$; 3 | 6. $3n^2 - 20 = 196$; 2 |
| 7. $a = 26 - 3a^3$; 2 | 8. $5x + 3x = x^2 + 7$; 1 | 9. $18 + \frac{m}{3} = m + 12$; 9 |
| 10. $3n - \frac{6}{n} = n^4$; 3 | 11. $(m + 2)^2 = 49$; 5 | 12. $x^2 + \frac{x}{3} = \frac{x^3}{3}$; 6 |

Write a question that could be used to solve the equation. Then use mental math to solve the equation.

- | | | |
|-----------------------|------------------------|-------------------|
| 13. $x - 5 = 13$ | 14. $x + 2 = 16$ | 15. $2x + 6 = 8$ |
| 16. $21 - x = 13$ | 17. $4x = 60$ | 18. $7x - 19 = 9$ |
| 19. $\frac{x}{9} = 3$ | 20. $\frac{52}{m} = 4$ | 21. $x^3 = 216$ |

Check whether the given number is a solution of the inequality.

- | | | |
|--|----------------------------|-----------------------------------|
| 22. $x - 5 \leq 7$; 13 | 23. $14 - 2x > 5$; 4 | 24. $10 + x < 3x$; 5 |
| 25. $x + \frac{1}{4} \geq 0$; $\frac{3}{4}$ | 26. $2x^2 - 1 \geq 20$; 3 | 27. $\frac{4}{x} + 3 \leq 4x$; 2 |
| 28. $\frac{x}{14} < \frac{x-1}{9}$; 7 | 29. $6(x-1) \geq 8x-7$; 2 | 30. $\frac{10+c}{c} > c-3$; 5 |

- 31. Locker Installation** Suppose your school is replacing some of its lockers. When the old lockers are removed there is a space 153 inches long. Each new locker has a width of 8.5 inches. You want to know how many new lockers can be installed. You write the equation $8.5x = 153$ to model the situation. What do the 8.5, x , and 153 represent? Use mental math to solve the equation.

- 32. Video Game System** You are budgeting money to buy a video game system that costs \$138 including tax. If you save \$6 per week, will you have enough money in 6 months? You write the inequality $6n \geq 138$ to model the situation. What do the 6, n , and 138 represent? Use mental math to solve the inequality.

- 33. Layer of Earth** Earth's radius is approximately 4010 miles. The crust is approximately 10 miles wide, the mantle is approximately 1800 miles wide, and the inner core has a radius of approximately 800 miles. You want to know the width of the outer core. You write the equation $10 + 1800 + x + 800 = 4010$ to model the situation. What do the 10, 1800, x , 800, and 4010 represent? Use mental math to solve the equation.

