

Practice B

For use with pages 24–30

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

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|---------------------------------|--------------------------------|---------------------------------|
| 1. $2x + 3 = 17$; 7 | 2. $20 = 2x - 8$; 6 | 3. $4 + x^2 = 10$; 3 |
| 4. $x^2 - 19 = 30$; 7 | 5. $3x - 5 = x - 1$; 2 | 6. $17 - 2a^3 = 11$; 1 |
| 7. $5a - 3 = 3 + 2a$; 2 | 8. $y + 3y = 2y + 6$; 3 | 9. $5x + 3x = 30 - 2x$; 5 |
| 10. $\frac{m}{3} - 4 = 12$; 24 | 11. $9 + \frac{y}{2} = 2y$; 6 | 12. $3n - n = \frac{10}{n}$; 5 |

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

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| 13. $x - 5 = 8$ | 14. $x + 2 = 12$ | 15. $6x - 9 = 9$ |
| 16. $24 - x = 15$ | 17. $4x = 32$ | 18. $3x + 7 = 22$ |
| 19. $\frac{x}{7} = 3$ | 20. $\frac{36}{m} = 3$ | 21. $x^3 = 64$ |

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

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| 22. $x - 5 \leq 7$; 12 | 23. $9 + x > 13$; 4 | 24. $4x + 1 < 8$; 2 |
| 25. $10 - x \geq x$; 4 | 26. $x^2 + 7 \geq 10$; 2 | 27. $\frac{4}{x} + 3 \leq 5$; 2 |
| 28. $0 > \frac{x - 3}{6}$; 9 | 29. $6(x + 1) \geq 8x - 7$; 2 | 30. $\frac{10 + c}{c} < c - 3$; 5 |

Match the verbal sentence with its mathematical representation.

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| 31. The sum of 20 and x is greater than 30. | A. $x^2 = 36$ |
| 32. The quotient of x and 20 is greater than or equal to 30. | B. $20 + x > 30$ |
| 33. The product of 30 and x is less than 10. | C. $4 - x \leq 30$ |
| 34. The square of x is equal to 36. | D. $\frac{x}{20} \geq 30$ |
| 35. The difference of 4 and x is less than or equal to 30. | E. $30(x) < 10$ |
36. **Locker Installation** Suppose your school is replacing some of its lockers. When the old lockers are removed there is a space 200 inches long. Each new locker has a width of 8 inches. You want to know how many new lockers can be installed. You write the equation $8x = 200$ to model the situation. What do the 8, x , and 200 represent? Use mental math to solve the equation.
37. **Video Game System** You are budgeting money to buy a video game system that costs \$145 including tax. If you save \$5 per week, will you have enough money in 6 months? You write the inequality $5n \geq 145$ to model the situation. What do the 5, the n , and the 145 represent? Use mental math to solve the inequality.