

7-5 Solving Equations Involving Exponents (page 305)

Writing About Mathematics

1. Yes. Squaring both sides eliminates the fractional exponent.
2. No. $a^{-2} = \frac{1}{a^2}$, but 36 does not equal its inverse.

Developing Skills

- | | | |
|------------------|---------------------|----------|
| 3. 64 | 4. 32 | 5. 243 |
| 6. 4 | 7. $\pm\frac{1}{3}$ | 8. 2 |
| 9. $\frac{1}{6}$ | 10. 81 | 11. 16 |
| 12. 9 | 13. 27 | 14. 72 |
| 15. 3 | 16. 5 | 17. 81 |
| 18. 0.35 | 19. 14.70 | 20. 1.24 |
| 21. 2.03 | 22. 2.20 | 23. 0.54 |

24. $x^{\frac{1}{3}-\frac{2}{3}} = 10$
 $x^{-\frac{1}{3}} = 10$
 $(x^{-\frac{1}{3}})^{-3} = (10)^{-3}$
 $x = \frac{1}{1,000}$

Applying Skills

25. If the area of one face is B , then the length of one side of the cube is \sqrt{B} . Therefore, the volume of the cube is $(\sqrt{B})^3$ or $B^{\frac{3}{2}}$.
26. $B = V^{\frac{2}{3}}$

7-6 Solving Exponential Equations (pages 307–308)

Writing About Mathematics

1. $a = 0$. Anything to the zero power is 1.
2. There is no common base.

Developing Skills

3. 3^2

6. 7^2

9. $\left(\frac{1}{2}\right)^3$ or 2^{-3}

12. $(0.5)^3$

15. 4

18. -2

21. $-\frac{1}{2}$

24. -1

27. 3

30. 3

33. 1

36. 0

4. 3^3

7. 10^3

10. $\left(\frac{1}{6}\right)^3$ or 6^{-3}

13. $(0.9)^2$

16. 3

19. 2

22. 2

25. $\frac{1}{2}$

28. 3

31. 2

34. $\frac{1}{5}$

37. -3

5. 5^2

8. 2^5

11. $(0.1)^3$

14. $(0.4)^2$

17. -1

20. -2

23. 3

26. -2

29. 6

32. -2

35. $\frac{3}{2}$

38. ± 2