

Evaluate.

4. $(3 \cdot 2)^2$

5. $(4x^3)^4$

6. $5^2 \cdot 5^{-5}$

7. $\left(\frac{1}{3}\right)^3$

Simplify

8. $2m^2 \cdot 3m^5$

9. $3j^3k^{-2} \cdot 3j^{-2}k^4$

10. $(x^3z^5)^0$

11. $(3ab^2)^2$

12. $(5w^3)^{-2}$

13. $\frac{r^3}{r^{-2}}$

14. $\frac{3a^4b^{-4}c^{-3}}{5a^2b^{-3}c^4}$

15. $\frac{2jk^{-2}m^3}{2km}$

Evaluate.

16. $\sqrt{28}$

17. $\sqrt[3]{-27}$

18. $\sqrt[5]{64}$

19. $\sqrt[4]{243v^6}$

20. $\sqrt[3]{5^3}$

Simplify.

21. $\sqrt{8x^4}$

22. $\sqrt[3]{64m^7n}$

23. $\sqrt[5]{-32x^6y^{10}z}$

24. $\sqrt[6]{448x^7y^8}$

Evaluate without a calculator. Write in radical form, then simplify.

25. $9^{\frac{1}{2}}$

26. $16^{\frac{3}{4}}$

27. $8^{-\frac{1}{3}}$

28. $32^{\frac{2}{5}}$

29. $27^{-\frac{4}{3}}$

Simplify. Leave answers with rational exponents and use only positive exponents.

30. $x^{\frac{1}{2}} \cdot x^{\frac{2}{3}}$

31. $y^2 \cdot y^{\frac{1}{2}}$

32. $w^{-\frac{2}{5}} \cdot w^{\frac{3}{2}}$

33. $(j^{-10})^{\frac{1}{4}}$

34. $\left(m^{\frac{3}{5}}\right)^{\frac{5}{3}}$

35. $\left(x^{-\frac{1}{2}}y^{-\frac{2}{3}}\right)^{-6}$

36. $\frac{k^{\frac{2}{7}}}{k^{\frac{1}{7}}}$

37. $\frac{k^2}{k^{\frac{2}{3}}}$

38. $\frac{x^4y^{-\frac{1}{3}}}{x^{\frac{3}{2}}y^3}$

39. $\frac{a^{\frac{5}{2}}b^{\frac{3}{2}}}{a^{\frac{3}{2}}b^{\frac{1}{4}}}$

Ch 1 Review Key

1. \$17
2. $\frac{5}{3}$ pieces of cake
3. $\frac{3}{2}$ Pieces of cake
4. 36
5. $256x^{12}$
6. $\frac{1}{125}$
7. $\frac{1}{27}$
8. $6m^7$
9. $9jk^2$
10. 1
11. $9a^2b^4$
12. $\frac{1}{25w^6}$
13. r^5
14. $\frac{3a^2}{5bc^7}$
15. $\frac{jm^2}{k^3}$
16. $2\sqrt{7}$
17. -3
18. $2\sqrt[5]{2}$
19. $3|v|\sqrt[4]{3v^2}$
20. 5
21. $2x^2\sqrt{2}$
22. $4m^2\sqrt[3]{mn}$
23. $-2xy^2\sqrt[5]{xz}$
24. $2|xy|\sqrt[6]{7xy^2}$
25. 3
26. 8
27. $\frac{1}{2}$
28. 4
29. $\frac{1}{81}$

30. $x^{\frac{7}{6}}$
31. $y^{\frac{5}{2}}$
32. $w^{\frac{11}{10}}$
33. $\frac{1}{j^{\frac{5}{2}}}$
34. m
35. x^3y^4
36. $k^{\frac{1}{7}}$
37. $k^{\frac{4}{3}}$
38. $\frac{x^{\frac{11}{2}}}{y^{\frac{10}{3}}}$
39. $ab^{\frac{5}{4}}$
40. $\frac{7\sqrt{13}}{13}$
41. $2\sqrt{5} + \sqrt{15}$
42. $-9\sqrt{5} + 4\sqrt[3]{6}$