

Practice

Write the exponent.

1. 4^5 2. 10^5 3. 7^3 4. 9^2
 5. 2^9 6. 25^{11} 7. 20^8 8. 8^6

Write the base.

9. 4^2 10. 3^5 11. 10^5 12. 5^3
 13. 6^3 14. 2^{12} 15. 6^{16} 16. 7^4

Write as repeated multiplication.

17. 5^2 18. 10^5 19. 12^6 20. 20^3
 21. 8^3 22. 9^7 23. 2^3 24. 4^5

Write in exponential form.

25. $2 \times 2 \times 2 \times 2 \times 2 \times 2$
 26. $10 \times 10 \times 10 \times 10 \times 10 \times 10 \times 10$
 27. $5 \times 5 \times 5 \times 5 \times 5$
 28. $3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3 \times 3$
 29. 6×6
 30. $9 \times 9 \times 9 \times 9$

Write as a power of 10.

31. 100 32. 10 000
 33. 10 34. 1000
 35. 1 000 000 36. 100 000
 37. 10 000 000 38. 10 000 000 000

Write in standard form.

39. $3 \times 3 \times 3$ 40. $8 \times 8 \times 8$
 41. $6 \times 6 \times 6 \times 6$ 42. $5 \times 5 \times 5$
 43. 2×2 44. $4 \times 4 \times 4 \times 4$

Write in standard form.

45. 2^4 46. 3^2 47. 4^5 48. 8^3
 49. 9^3 50. 7^4 51. 5^5 52. 8^4
 53. 6^3 54. 2^{10} 55. 3^4 56. 4^4

Copy and complete the table.

	Power	Base	Exponent	Standard Form
57.	3^5	?	?	243
58.	?	10	4	?
59.	2^6	2	?	?
60.	4^3	?	?	64
61.	$?^3$?	?	125

Problems and Applications

Write the powers in order from smallest to largest.

62. $3^4, 4^3, 2^5, 5^2$ 63. $8^3, 5^4, 6^3, 4^6$

Evaluate.

64. 3.1^2 65. 1.2^3 66. 5.6^2
 67. 8.5^2 68. 2.4^3 69. 1.5^4

70. Since $2 + 2 = 4 = 2^2$, does $2 + 2 + 2 = 2^3$? Explain your answer.

71. Which is greater, 3^2 or 2^3 ? Explain.

CALCULATOR POWER

Some calculators have an exponent key, $\boxed{y^x}$.

To calculate 2^3 , press $\boxed{C} \boxed{2} \boxed{y^x} \boxed{3} \boxed{=}$

The display is $\boxed{8}$.

1. Describe a way to use a calculator without a $\boxed{y^x}$ key to evaluate powers.

Evaluate using your calculator.

2. 5^3 3. 3^5 4. 2^8
 5. 3^4 6. 10^6 7. 12^4

Use your calculator to decide which is greater.

8. 2^6 or 6^2 9. 3^4 or 4^3
 10. 10^2 or 2^{10} 11. 5^3 or 3^5