



Practice and Problem-Solving Exercises



Practice

Simplify each expression.

9. 3^5

10. 4^3

11. 2^4

12. 10^8

13. $\left(\frac{2}{3}\right)^3$

14. $\left(\frac{1}{2}\right)^4$

15. $(0.4)^6$

16. 7^4

17. $20 - 2 \cdot 3^2$

18. $6 + 4 \div 2 + 3$

19. $(6^2 - 3^3) \div 2$

20. $5 \cdot 2^2 \div 2 + 8$

21. $80 - (4 - 1)^3$

22. $52 + 8^2 - 3(4 - 2)^3$

23. $\frac{6^4 \div 3^2}{9}$

24. $\frac{2 \cdot 7 + 4}{9 \div 3}$

See Problems 1 and 2.

Simplify each expression.

37. $2[(8 - 4)^5 \div 8]$

38. $3[(4 - 2)^5 - 20]$

39. $10 - (2^3 + 4) \div 3 - 1$

40. $\frac{22 + 1^3 + (3^4 - 7^2)}{2^3}$

41. $3[42 - 2(10^2 - 9^2)]$

42. $\frac{2[8 + (67 - 2^6)^3]}{9}$

43. **Think About a Plan** The snack bar at your school has added sushi to its menu.

The ingredients for one roll include sushi rice, seaweed sheets, cucumbers, cream cheese, and 3 oz of smoked salmon. One roll can be cut into 8 servings. Write an expression for the amount of salmon needed to make s servings of sushi.

How much salmon is needed to make 16 servings? 24 servings? 80 servings? 100 servings?

- What operations are needed in your calculations?
- Use a table to help you organize your results. What will you use for the column headings in your table?

44. **Salary** You earn \$10 for each hour you work at a canoe rental shop. Write an expression for your salary for working the number of hours h . Make a table to find how much you earn for working 10 h, 20 h, 30 h, and 40 h.

Evaluate each expression for the given values of the variables.

45. $3(s - t)^2$; $s = 4$, $t = 1$

46. $2x - y^2$; $x = 7$, $y = 3.5$

47. $3m^2 - n$; $m = 2$, $n = 6$

48. $(2a + 2b)^2$; $a = 3$, $b = 4$

49. $2p^2 + (2q)^2$; $p = 4$, $q = 3$

50. $(4c - d + 0.2)^2 - 10c$; $c = 3.1$, $d = 4.6$

51. $\frac{3g + 6}{h}$; $g = 5$, $h = 7$

52. $\frac{2w + 3v}{v^2}$; $v = 6$, $w = 1$