1-2 Practice   *Form G*

Order of Operations and Evaluating Expressions

Simplify each expression.

1. 4^2 **16**

2. 5^3 **125**

3. 1^{16} **1**

4. $\left(\frac{5}{6}\right)^2$ $\left(\frac{25}{36}\right)$

5. $(1 + 3)^2$ **16**

6. $(0.1)^3$ **0.001**

7. $5 + 3(2)$ **11**

8. $\left(\frac{16}{2}\right) - 4(5)$ **−12**

9. $4^4(5) + 3(11)$ **1313**

10. $17(2) - 4^2$ **18**

11. $\left(\frac{20}{5}\right)^3 - 10(3)^2$ **−26**

12. $\left(\frac{27 - 12}{8 - 3}\right)^3$ **27**

13. $(4(5))^3$ **8000**

14. $2^5 - 4^2 \div 2^2$ **28**

15. $\left(\frac{3(6)}{17 - 5}\right)^4$ $\frac{81}{16}$

Evaluate each expression for $s = 2$ and $t = 5$.

16. $s + 6$ **8**

17. $5 - t$ **0**

18. $11.5 + s^2$ **15.5**

19. $\frac{s^4}{4} - 17$ **−13**

20. $3(t)^3 + 10$ **385**

21. $s^3 + t^2$ **33**

22. $-4(s)^2 + t^3 \div 5$

9

23. $\left(\frac{s + 2}{5t^2}\right)^2$

$\frac{16}{15,625}$ **or 0.001024**

24. $\left(\frac{3s(3)}{11 - 5(t)}\right)^2$

$\frac{81}{49}$

25. Every weekend, Morgan buys interesting clothes at her local thrift store and then resells them on an auction website. If she brings $150.00 and spends *s*, write an expression for how much change she has. Evaluate your expression for *s* = $27.13 and *s* = $55.14.

150 − *s*; $122.87; $94.86

1-2 **Practice**(continued)   *Form G*

Order of Operations and Evaluating Expressions

26. A bike rider is traveling at a speed of 15 feet per second. Write an expression for the distance the rider has traveled after s seconds. Make a table that records the distance for 3.0, 5.8, 11.1, and 14.0 seconds.

$d = 15.0s$

Time (s)	Distance (ft)
3.0	45.0
5.8	87.0
11.1	166.5
14.0	210.0

Simplify each expression.

27. $4[(12 + 5) - 4^4]$
−956

28. $3[(4 - 6)^2 + 7]^2$
363

29. $2.5[13 - \left(\frac{36}{6}\right)^2]$
−57.5

30. $[(48 \div 8)^3 - 7]^3$
9,129,329

31. $\left(\frac{4(-4)(3)}{11 - 5(1)}\right)^3$
−512

32. $4[11 - (55 - 3^5) \div 3]$
294.667

33. a. If the tax that you pay when you purchase an item is 12% of the sale price, write an expression that gives the tax on the item with a price p. Write another expression that gives the total price of the item, including tax.
0.12 × p; 0.12p + p;

b. What operations are involved in the expressions you wrote? **multiplication and addition**

c. Determine the total price, including tax, of an item that costs $75. **$84**

d. Explain how the order of operations helped you solve this problem.
First you have to multiply 0.12 by p to determine the tax, then you have to add the tax to the original sale price.

34. The cost to rent a hall for school functions is $60 per hour. Write an expression for the cost of renting the hall for h hours. Make a table to find how much it will cost to rent the hall for 2, 6, 8, and 10 hours.

$60 \times h$

Hours	Rental Charge
2	120
6	360
8	480
10	600

Evaluate each expression for the given values of the variables.

35. $4(c + 5) - f^4$; $c = -1, f = 4$
−240

36. $-3[(w - 6)^2 + x]^2$; $w = 5$, $x = 6$
−147

37. $3.5[h^3 - \left(\frac{3j}{6}\right)^2]$; $h = 3$, $j = -4$
80.5

38. $x[y^2 - (55 - y^5) \div 3]$; $x = -6$, $y = 6$
−15,658