Practice

Form G

Order of Operations and Evaluating Expressions

Simplify each expression.

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

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

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

8.
$$\left(\frac{16}{2}\right)$$
 - 4(5) -12 9. 4^4 (5) + 3(11) 1313

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**

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

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**

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

22.
$$-4(s)^2 + t^3 \div 5$$
 23. $\left(\frac{s+2}{5t^2}\right)^2$

$$\frac{16}{10000}$$
 or 0.00102

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

$$\frac{16}{15.625}$$
 or 0.001024

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

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.

a = 15.0s				
	Time (s)	Distance (ft)		
(3.0	45.0)	
(5.8	87.0)	
(11.1	166.5)	
(14.0	210.0)	
٦				

Simplify each expression.

27.
$$4[(12 + 5) - 4^4]$$

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

27.
$$4[(12+5)-4^4]$$
 28. $3[(4-6)^2+7]^2$ **29.** $2.5[13-\left(\frac{36}{6}\right)^2]$ **30.** $[(48 \div 8)^3-7]^3$ **31.** $\left(\frac{4(-4)(3)}{11-5(1)}\right)^3$ **32.** $4[11-(55-3^5)\div 3]$

30.
$$[(48 \div 8)^3 - 7]^3$$

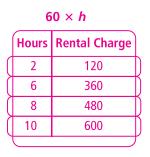
31.
$$\left(\frac{5(3)}{11-5(1)}\right)$$

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

9,129,329

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. $0.12 \times p$; 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.



Evaluate each expression for the given values of the variables.

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

35.
$$4(c+5) - f^4$$
; $c = -1, f = 4$ **36.** $-3[(w-6)^2 + x]^2$; $w = 5, x = 6$

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

37.
$$3.5[h^3 - \left(\frac{3j}{6}\right)^2]$$
; $h = 3$, $j = -4$ **38.** $x[y^2 - (55 - y^5) \div 3]$; $x = -6$, $y = 6$ **80.5**