

**Chapter 1 Test**

Form G

**Do you know HOW?**

Write an algebraic expression for each phrase.

1. a number  $p$  minus 19
2. 12 more than 5 times  $c$
3. 1 less than the quotient of a number  $n$  and 6
4. 9 times the sum of a number  $t$  and 3
5. 12 times the quantity 15 minus a number  $d$

Simplify each expression.

6.  $22 + (3^2 - 4^2)$

7.  $\sqrt{625}$

8.  $(3^3 - 9)^2$

9.  $-10 - (-2) \cdot (-4^3)$

10.  $(-\frac{1}{4})^3$

11.  $5^2 \div 2$

Evaluate each expression for the given values of the variables.

12.  $5x + 2y^2 - y^3$ ;  $x = 2$  and  $y = 4$

13.  $(5m)^2 - (2n - 3m)^3$ ;  $m = -3$  and  $n = 5$

14.  $u + 3v^2 - 2u^3$ ;  $u = -1$  and  $v = -3$

15.  $(3c)^3 - (c - 4d)^2$ ;  $c = -2$  and  $d = 5$

16. Name the subset(s) of the real numbers to which each number belongs. Then order the numbers from least to greatest.

$$\sqrt{1.1}, -1, \frac{1}{2}$$

17. Estimate  $\sqrt{120}$  to the nearest integer.

18. Which property is illustrated by  $-8 + 0 = -8$ ?

19. Are the following expressions equivalent? Explain.

$$\frac{28mn}{7n} \text{ and } 4m$$

**Chapter 1 Test** (continued)

Form G

20. Is the ordered pair  $(-8, -7)$  a solution to the equation  $3x + 10 = 2y$ ?  
Show your work.

21. Is the ordered pair  $(5, 0)$  a solution to the equation  $4x + 20 = 12y$ ?  
Show your work.

22. Order the numbers  $\frac{3}{4}$ ,  $-1\frac{3}{4}$ ,  $-\frac{5}{4}$ , and  $-\frac{1}{4}$  from least to greatest.

Evaluate each expression for  $a = -1$  and  $b = 5$ .

23.  $5a - 7$

24.  $-2b - 3a$

25.  $(ab)^2$

Simplify each expression.

26.  $9xy^2 - 11xy^2$

27.  $15 - (-3) - 2^2$

28.  $-\frac{1}{4}(-4 + 2p)$

**Do you UNDERSTAND?**

29. **Open-Ended** Write an equation that can be solved correctly in two different ways. Demonstrate both methods.

30. **Reasoning** Find the value of  $22 \div 2 + 9 - 4^2 + 18$ . Then change one operation sign and add one set of grouping symbols so that the value of the expression is 36.

31. **Writing** Describe the difference between the set of whole numbers and the set of natural numbers.

32. **Writing** Describe the process for finding the product or quotient of two numbers with the same sign and the product or quotient of two numbers with different signs.