

## Practice

Choose the numeral preceding the word or expression that best completes the statement or answers the question.

- Which expression results from substituting 5 for  $m$  and  $-6$  for  $n$  in  $-3m - 9n$ ?  
 (1)  $-3(-6) - 9(5)$  (2)  $-3(5) - 9(5)$  (3)  $-3(-6) - 9(-6)$  (4)  $-3(5) - 9(-6)$
- Which number is the value of  $\frac{k-p}{p-k}$  for  $k = -6$  and  $p = 6$ ?  
 (1)  $-12$  (2)  $-1$  (3)  $0$  (4)  $1$
- If  $a = -2$ , then  $3a^2 - 4a + 6$  equals  
 (1)  $2$  (2)  $5$  (3)  $10$  (4)  $26$
- Which are a pair of like terms?  
 (1)  $5x$  and  $7y$  (2)  $5x$  and  $7x^2$  (3)  $5x$  and  $7x$  (4)  $-5x$  and  $-5y$
- Which expression is not equivalent to  $-5n + 9 - 2n$ ?  
 (1)  $-5n - 2n + 9$  (2)  $9 - 5n - 2n$  (3)  $-5n + 2n - 9$  (4)  $9 + (-5n - 2n)$
- Which expression represents the phrase "a number  $x$  less a number  $y$ "?  
 (1)  $x < y$  (2)  $y - x$  (3)  $x - y$  (4)  $y < x$
- If  $d + 2$  is an even integer, which is the next greater even integer?  
 (1)  $d$  (2)  $d + 3$  (3)  $d + 4$  (4)  $2d$
- For which value of  $z$  is the following true?  
 $z < \sqrt{z+1} < 1$   
 (1)  $-1$  (2)  $1$  (3)  $2$  (4)  $3$

In Exercises 9–13, evaluate each expression for the given value(s) of the variable(s).

- $3s - 5$ ;  $s = -5$
- $q^2 + 9q$ ;  $q = -3$

$$11 \frac{j+k}{2}; j = 5 \text{ and } k = 6$$

$$12 rs - r; r = 2 \text{ and } s = -3$$

$$13 3a^2 - 4b; a = -2 \text{ and } b = 0$$

In Exercises 14–21, simplify each expression.

$$14 2(a + b) \qquad 15 -5(r - s)$$

$$16 8(6 - p) \qquad 17 -3(x + 12)$$

$$18 (c + 5)(6) \qquad 19 (v - 7)(-11)$$

$$20 -6n + 20n \qquad 21 3t - (-15t)$$

In Exercises 22–27, write each phrase as a variable expression.

- eight more than a number  $t$
- a number  $c$  decreased by seventeen
- the quotient when the square root of a number  $n$  is divided by two
- twice the sum of a number  $y$  and nine
- twelve less than the product of a number  $m$  and its opposite
- the quotient when the sum of a number  $a$  and a number  $b$  is divided by their product

In Exercises 28–30, translate the algebraic expressions into English phrases.

$$28 (abc)^3 \qquad 29 \sqrt{\frac{3a^2}{5b^4}} \qquad 30 (7 - 2x)(-3y)$$

In Exercises 31–33, solve the following problems. Clearly show all necessary work.

- If  $-2n - 4$  represents an even integer, write an expression to represent the next lesser even integer.
- If  $n$  is an integer, which of the following expressions represents an odd integer? Show your work.

$$n - 2, n - 1, n, n + 1, n + 2$$

- Mel began studying at 6:45 P.M., and Tim began at 6:15 P.M. Let  $m$  represent the number of minutes Mel has been studying. Write an expression to represent the number of minutes Tim has been studying.