LESSON 1-1

Practice A

Variables and Expressions

Evaluate each expression.

1. $3 + y$ for $y = 7$ — 10
2. $6x$ for $x = 3$ — 18
3. $a - 11$ for $a = 18$ — 7
4. $r - 8$ for $r = 21$ — 13
5. $3b$ for $b = 12$ — 36
6. $12y$ for $y = 4$ — 48
7. $f + 32$ for $f = 29$ — 61
8. $38t$ for $t = 2$ — 76
9. $7.3 + k$ for $k = 14$ — 21.3
10. $s - 21.4$ for $s = 22.3$ — 0.9
11. $x + y$ for $x = 7$ and $y = 11$ — 18
12. ab for $a = 6$ and $b = 5$ — 30
13. $j - h$ for $h = 9$ and $j = 22$ — 13
14. $2a + b$ for $a = 6$ and $b = 7$ — 19
15. $8c - 6d$ for $c = 5$ and $d = 3$ — 22
16. $7(x - y)$ for $x = 18$ and $y = 14$ — 28

The cost of each greeting card is $0.60. If c is the number of greeting cards, then $0.6c$ can be used to find the total cost of the cards. How much does it cost for each number of greeting cards?

17. 2 cards — $1.20
18. 5 cards — $3.00
19. 10 cards — $6.00
20. 35 cards — $21.00

21. Mrs. Williams drives along the interstate at the rate of 58 mi/h. If h is the number of hours Mrs. Williams drives at this rate, then $58h$ can be used to find the total number of miles she drives.

How far will she drive in 4 hours at this rate? 232 miles

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LESSON 1-1

Practice B

Variables and Expressions

Evaluate each expression for the given value of the variable.

1. $6x + 2$ for $x = 3$ — 20
2. $18 - a$ for $a = 13$ — 5
3. $\frac{1}{4}y$ for $y = 16$ — 4
4. $9 - 2b$ for $b = 3$ — 3
5. $44 - 12n$ for $n = 3$ — 8
6. $7.2 + 8k$ for $k = 2$ — 23.2
7. $20(b - 15)$ for $b = 19$ — 80
8. $n(18 - 5)$ for $n = 4$ — 52

Evaluate each expression for the given value of the variables.

9. $2x + y$ for $x = 7$ and $y = 11$ — 25
10. $4j - k$ for $j = 4$ and $k = 10$ — 6
11. $9a - 6b$ for $a = 6$ and $b = 2$ — 42
12. $5s + 5t$ for $s = 15$ and $t = 12$ — 135
13. $7(n - m)$ for $m = 4$ and $n = 15$ — 77
14. $w(14 - y)$ for $w = 8$ and $y = 5$ — 72

If q is the number of quarts of lemonade, then $\frac{1}{4}q$ can be used to find the number of cups of lemonade mix needed to make the lemonade. How much mix is needed to make each amount of lemonade?

15. 2 quarts — $\frac{1}{2}$ cup
16. 8 quarts — 2 cups
17. 12 quarts — 3 cups
18. 18 quarts — $4\frac{1}{2}$ cups

19. If m is the number of minutes a taxi ride lasts, then $2 + 0.35m$ can be used to find the cost of a taxi ride with Bill's Taxi Company.

How much will it cost for a 12-min taxi ride? $6.20

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LESSON 1-1

Practice C

Variables and Expressions

Evaluate each expression for the given value of the variable.

1. $12a + 8$ for $a = 5$ — 68
2. $11(7 - b)$ for $b = 3$ — 44
3. $3(8 - n) + 2$ for $n = 2$ — 20
4. $6 + 3(x - 9)$ for $x = 12$ — 15
5. $9(k - 6) - 20$ for $k = 11$ — 25
6. $5(j + 3.7)$ for $j = 2.2$ — 29.5
7. $33 - 4(d - 6)$ for $d = 13$ — 5
8. $y(4 + 6) - 5$ for $y = \frac{1}{2}$ — 0
9. $27 + c(16 - 9)$ for $c = 7$ — 76
10. $8p - 4p + 13$ for $p = 9$ — 49

Evaluate each expression for $a = 3$, $b = 2.5$, $c = 7$, and $d = 0$.

11. $6b - 8d$ — 15
12. $5(b + c)$ — 47.5
13. $ab - c$ — 0.5
14. $10(a - d) + b$ — 32.5
15. $9abc$ — 472.5
16. $7b + 12c - 5a$ — 86.5

If g is Jamaal's gross pay, then $g - 0.2g$ can be used to find his take home pay after 20% is taken out for taxes. Find Jamaal's take home pay for each gross pay amount.

17. $100 — $80
18. $250 — $200
19. $370 — $296
20. $432 — $345.60

21. If p is the regular price of a sweater at Knit Inc., then $p - 0.15p$ can be used to find the sale price of a sweater on sale for 15% off the regular price.

What is the sale price of a sweater that is regularly $34? $28.90

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LESSON 1-1

Reteach

Variables and Expressions

An **algebraic expression** uses at least one letter, or **variable,** which represents a value that can change.

A number that multiplies a variable is its **coefficient.** A **constant** is a specific number, whose value does not change.

To **evaluate** an algebraic expression, **substitute** a given number for a variable, and find the value of the resulting numerical expression.

Algebraic Expression

$4x + 7$

Coefficient: 4 — Variable: x — Constant: 7

Follow the order of operations:
1. Parentheses
2. Multiply or Divide
3. Add or Subtract

Evaluate $5(m + 1) + 8n$ for $m = 10$ and $n = 2$.

$5(m + 1) + 8n$	
$5(10 + 1) + 8(2)$	Substitute 10 for m and 2 for n.
$5(11) + 8(2)$	Parentheses, simplify inside.
$55 + 16$	Multiply, from left to right.
71	Add.

Complete to evaluate each expression.

1. $9 + 7z$ for $z = 3$
   $9 + 7 \cdot$ (3)
   $9 +$ (21)
   30
2. $5(q - 8)$ for $q = 17$
   $5 \cdot ($(17)$ - 8)$
   $5 \cdot ($(9)$)$
   45
3. $25 - 2x$ for $x = 8$
   $25 - 2 \cdot ($(8)$)$
   $25 -$ (16)
   9
4. $2(x + 6) + 4$ for $x = 9$
   $2($(9)$ + 6) + 4$
   $2($(15)$) + 4$
   (30) $+ 4$
   34
5. $42 - 3(x + 1)$ for $x = 3$
   $42 - 3 \cdot ($(3)$ + 1)$
   $42 - 3 \cdot ($(4)$)$
   $42 -$ (12)
   30
6. $22 + 5(2z)$ for $z = 4$
   $22 + 5 \cdot (2 \cdot$ (4)$)$
   $22 + 5 \cdot ($(8)$)$
   $22 +$ (40)
   62

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