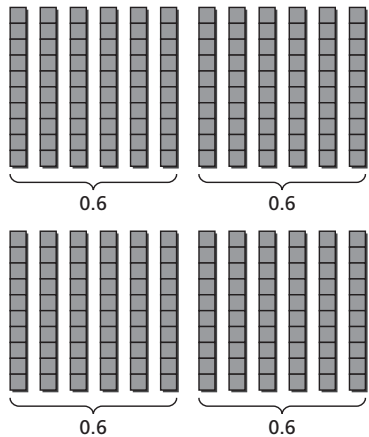


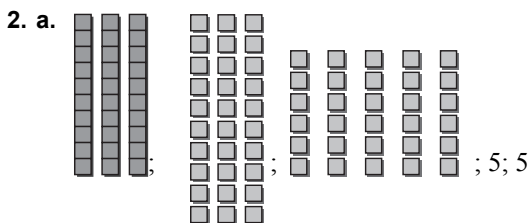
# Student Workbook Answers



4; 4

b. 0.9 c. 1.3 d. 4 e. 8

f.  $1.6 \div 0.8 = 2$  or  $1.6 \div 2 = 0.8$



b. 5 c. 60 d. 2 e. 4

3. *Sample answer:* To divide by tenths as in  $2.4 \div 0.6$ , model 2.4 with tenth blocks, then see how many groups of 0.6 can be formed. To divide by hundredths as in  $0.3 \div 0.06$ , model 0.3 with hundredths blocks, then see how many groups of 0.06 can be formed.

4. *Answer should include, but is not limited to:*  
A poem about dividing decimals

5. *Answer should include, but is not limited to:*  
A cartoon about dividing decimals—The poem from Activity 4 may be used in the cartoon.

## 2.6 Practice

1.  $42 \overline{)231}$       2.  $15 \overline{)1287}$       3.  $535 \overline{)8760}$

4. 0.2      5. 0.53      6. 4.1

7. 2.4      8. 6.7      9. 0.064

10. The dividend was not aligned properly. The answer should be 0.27.

11. \$32.10      12. 30.3      13. 5.31      14. 37.2

15. 10.7      16. 3.43      17. 14      18. 27

19. 18.2      20. 3      21. 14.7      22. 30  
 23. 3.4      24. 14      25. 410      26. 51,000  
 27. 8400 songs      28. 300 sheets of paper  
 29. 36.57      30. 6476.67      31. 7.81

## Chapter 3

### 3.1 Activity

1. a.

You babysit for 3 hours. You receive \$12. What is your hourly wage?

3 h	×	+	=
\$12	-	÷	

hourly wage (\$ per hour)	=	\$12	÷	3 h
---------------------------	---	------	---	-----

$$\begin{aligned} \text{hourly wage} &= 12 \div 3 \\ &= 4 \end{aligned}$$

So, your hourly wage is \$4 per hour.

b. *Sample answer:* Multiply the hourly wage by the number of hours worked.

2. a.  $6 \div 2$ ; \$3      b.  $60 - 27 - 15$ ; \$18

c.  $5 \times 3$ ; \$15      d.  $4500 - 2000$ ; 2500 ft

e.  $2 \times 20$ ; 40 cm

3. Write the problem. Underline the important numbers and units. Then circle the key word for the question. Write an expression that answers the key word question. Then evaluate the expression.

*Sample answer:*

Addition: You buy a drink for \$2 and a sandwich for \$3. How much did you spend total?  
 $2 + 3 = \$5$

Subtraction: You have \$20 and you buy a shirt for \$15. How much do you have left?  $20 - 15 = \$5$

Multiplication: You earn \$20 per week. How much money do you earn in 2 weeks?  $20 \times 2 = \$40$

Division: You earned \$15 by mowing 3 lawns. How much money did you earn for each lawn?  
 $15 \div 3 = \$5$

### 3.1 Practice

1. terms: 3, c, e

2. terms: 5m, 9

coefficients: 1, 1

coefficient: 5

constant: 3

constant: 9

# Student Workbook Answers

3. terms:  $3p^2, 7$

coefficient: 3

constant: 7

4. 42      5. 10      6. 9      7. 100

8. 6      9. 19      10. 4      11. 180

12. 10      13. 13      14. 17      15. 6

16.  $3 \cdot 10 = 30$  should be done first. So,  $30 - 6 = 24$ .

17. \$26.00      18. 322 problems

19. a. \$60.00    b. yes; 24 times \$5 is \$120.

20. a. 78 pages    b. no; 2 times 52 is only 104 pages.

## 3.2 Activity

1. a.

Sandwich	Price (dollars)	Change Received (dollars)
Reuben	6.45	$20 - 6.45$
BLT	5.25	$20 - 5.25$
Egg salad	4.65	$20 - 4.65$
Roast beef	6.75	$20 - 6.75$

b. *Sample answer:*  $20 - s$ ; Let  $s$  represent the cost of the sandwich.

c. *Sample answer:* The expressions in the table in part (a) are numerical expressions that contain constants. The expression in part (b) is an algebraic expression that can be evaluated repeatedly using different values for  $s$ .

d. *Sample answer:*  $4.95 + 2d$ ; The cost of a chicken salad sandwich is \$4.95. You also ordered 2 side dishes that each cost the same, but you do not know how much. So, let  $d$  represent the cost of each side dish you ordered. You have to add 4.95 and  $2d$  to find the total cost.

e. *Sample answer:* The customer paid using \$20. The variable  $s$  represents the number of items ordered for \$4.65 each; no; From the menu board, the customer ordered grilled cheese sandwiches and/or egg salad sandwiches.

2. a.

Variable	Phrase	Expression
$n$	4 more than a number	$n + 4$ or $4 + n$
$m$	the difference of a number and 3	$m - 3$
$x$	the sum of a number and 8	$x + 8$ or $8 + x$
$p$	10 less than a number	$p - 10$
$n$	7 units farther away	$n + 7$ or $7 + n$
$t$	8 minutes sooner	$t - 8$
$w$	12 minutes later	$w + 12$ or $12 + w$
$y$	a number increased by 9	$y + 9$ or $9 + y$

b.  $t - 8$

c. *Sample answer:* You have 4 more DVDs than your friend. Your friend has 16 DVDs. How many DVDs do you have?

3. the product of a number and 3:  $n \cdot 3$   
the quotient of 3 and a number:  $3 \div n$

4 times a number:  $4p$

a number divided by 3:  $n \div 3$

twice a number:  $2m$

4. *Sample answer:* Use variables to represent any unknown amounts. To determine the math operations for the expression, look for key words or phrases.

## 3.2 Practice

1.  $4 + 6$  or  $6 + 4$       2.  $15 - 7$

3.  $3x$  or  $x \cdot 3$     4.  $\frac{m}{4}$       5.  $8p$  or  $p \cdot 8$

6.  $2x$  or  $x \cdot 2$     7.  $y - 10$       8.  $k - 7$

9.  $3 + c$  or  $c + 3$       10.  $11 - d$

11. Twelve less than a number means that you must subtract 12 from the number  $x$ ;  $x - 12$

12. 8 more than a number  $x$ , or the total of a number  $x$  and 8

# Student Workbook Answers

13. 20 decreased by the number  $n$ , or  $n$  less than 20

14.  $5x + 12$ ; 22    15.  $\frac{x}{3+7}$ ;  $\frac{1}{5}$     16.  $\frac{200}{y} - 17$ ; 3

17.  $15 - 4x$ ; 7

18.  $5 - 2$

19. a.  $3x + 2$  or  $2 + 3x$

b.  $3 \times 12 + 2$  or 38 years old

## 3.3 Activity

1. Order Matters                      Order Doesn't Matter  
b, c, f                                  a, d, e

Sample answer:

Order Matters:	Order Doesn't Matter:
$4 \div 2 = 2$	$4 + 2 = 6$
$2 \div 4 = \frac{1}{2}$	$2 + 4 = 6$
$2 - 3 = -1$	$2 \cdot 3 = 6$
$3 - 2 = 1$	$3 \cdot 2 = 6$

2. a.  $3 + 5 = 5 + 3$ ,  $9 \times 3 = 3 \times 9$

b. Order does not matter;

Commutative Property of Addition:

$$a + b = b + a$$

Commutative Property of Multiplication:

$$a \times b = b \times a$$

3. a.  $8 + (3 + 1) = (8 + 3) + 1$ ,

$$12 \times (6 \times 2) = (12 \times 6) \times 2$$

b. Location of grouping symbols does not matter;

Associative Property of Addition:

$$(a + b) + c = a + (b + c)$$

Associative Property of Multiplication:

$$(a \times b) \times c = a \times (b \times c)$$

4. The order in which you perform addition and multiplication does not matter. The order in which you perform subtraction and division does matter.

5. *Sample answer:* You can use the Commutative Property of Addition to reorder the numbers:  $11 + 9 + 7 + 13 + 12 + 8$ . Then you can use the Associative Property of Addition to group the numbers and add:

$$(11 + 9) + (7 + 13) + (12 + 8) = 20 + 20 + 20 = 60.$$

Because each group of numbers adds to 20, it is easier to add the sum in your head.

6. a.  $\bullet$  is multiplication and  $\star$  is addition. Because 0 times any number is 0 and 0 added to any number is the number.

b. *Answer should include, but is not limited to:* Students should use symbols other than those given to represent addition and multiplication. Students will demonstrate their understanding of the Commutative and Associative Properties by writing codes and deciphering the codes of other students.

## 3.3 Practice

1. Commutative Property of Addition

2. Addition Property of Zero

3. Commutative Property of Multiplication

4. Associative Property of Multiplication

5. Multiplication Property of One

6. Associative Property of Addition

7.  $2 + (a + 8) = 2 + (8 + a)$  Commutative Property of Addition  
 $= (2 + 8) + a$  Associative Property of Addition  
 $= 10 + a$  Add 2 and 8.

8.  $(2x) \bullet 5 = 5 \bullet (2x)$  Commutative Property of Multiplication  
 $= (5 \bullet 2) \bullet x$  Associative Property of Multiplication  
 $= 10x$  Multiply 5 and 2.

9.  $7(4y) = (7 \bullet 4)y$  Associative Property of Multiplication  
 $= 28y$  Multiply 7 and 4.

# Student Workbook Answers

10.  $(0 + c) + 12 = (c + 0) + 12$  Commutative Property of Addition  
 $= c + (0 + 12)$  Commutative Property of Addition  
 $= c + 12$  Addition Property of Zero

11.  $(8e) \cdot 1 = 1 \cdot (8e)$  Commutative Property of Multiplication  
 $= (1 \cdot 8) \cdot e$  Associative Property of Multiplication  
 $= 8e$  Multiplication Property of One

12.  $7 \cdot x \cdot 5 = 7 \cdot (x \cdot 5)$  Associative Property of Multiplication  
 $= 7 \cdot (5 \cdot x)$  Commutative Property of Multiplication  
 $= (7 \cdot 5) \cdot x$  Associative Property of Multiplication  
 $= 35x$  Multiply 7 and 5.

13.  $7 + a$

14.  $5 \cdot 12$

15.  $(6 + 9) + 7$

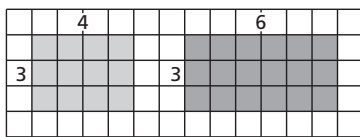
16.  $(2 \cdot 5) \cdot 7$

17.  $54 \cdot 1 = 54$ ; Any number times one equals itself.

18.  $x + y + 20$   
 $y + x + 20$

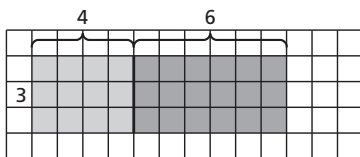
## 3.4 Activity

1. a. *Sample answer:*



b. *Sample answer:*  $(3 \times 4) + (3 \times 6)$

c. *Sample answer:*



$3 \times (4 + 6)$

d. yes; Both expressions represent the same area.

*Sample answer:*

$$(3 \times 4) + (3 \times 6) = 3 \times (4 + 6)$$

$$12 + 8 = 3 \times 10$$

$$30 = 30$$

e. *Answer should include, but is not limited to:* students should repeat the activity using different rectangles. Students will explain how the Distributive Property is illustrated and write a rule such as: You can think of  $a(b + c)$  as “distributing”  $a$  to  $b$  and  $a$  to  $c$ , as shown.

$$a \times (b + c) = (a \times b) + (a \times c) = ab + ac$$

$$a(b + c) = ab + ac$$

2. a. 138    b. 231    c. 423    d. 140    e. 68

3. a. 138    b. 85    c. 208    d. 380    e. 1160  
 f. 975    g. 705

4. *Sample answer:* The methods are essentially the same. One method is done vertically and the other method is done horizontally. The distribution of the 6 is more clear in Activity 3.

5. *Sample answer:* You use the Distributive Property and mental math to rewrite a multiplication problem as the sum or difference of two simpler products.

$$\begin{aligned} 30 \times 38 &= 30 \times (40 - 2) \\ &= (30 \times 40) - (30 \times 2) \\ &= 1200 - 60 \\ &= 1140 \end{aligned}$$

## 3.4 Practice

1. 115    2. 150    3. 486    4. 413

5.  $\frac{1}{3} \left( 2 + \frac{3}{4} \right) = \frac{11}{12}$     6.  $\frac{2}{5} \left( 3 + \frac{1}{2} \right) = 1\frac{2}{5}$

7.  $\frac{3}{8} \left( 5 + \frac{2}{3} \right) = 2\frac{1}{8}$     8.  $4x + 24$

9.  $8c - 40$     10.  $14y + 56$

11.  $9e - 36$     12.  $24 + 6n$

13.  $21 + 7x + 28 = 7x + 49$

14. 5 must be multiplied by both  $x$  and 9;  $5x + 45$

15. C; You need to add the two activities and then multiply the sum by 5.

# Student Workbook Answers

16.  $5(r + 3) = 5r + 15$

17.  $9w + 54 + 4 = 9w + 58$

18.  $15 + 5m - 7 = 5m + 8$

19.  $11m + 7$

20.  $5f - 8$

21.  $1\frac{7}{8}x$

22.  $3.1p - 8.37$

23. area:  $5(x + 2) = 5x + 10$

perimeter:  $2(5) + 2(x + 2) = 2x + 14$

## 3.4 Extension Practice

1.  $2(1 + 4)$

2.  $3(3 - 1)$

3.  $5(6 + 5)$

4.  $7(5 - 2)$

5.  $9(9 - 2)$

6.  $20(3 + 5)$

7.  $16(2y - 3)$

8.  $5(3y + 8)$

9.  $8(2x + 3)$

10.  $11(x + 3)$

11.  $13(x + 3y)$

12.  $21(x - 2y)$

13. C

14.  $2(10x + 50), 4(5x + 25), 5(4x + 20)$

$10(2x + 10), 20(x + 5)$

15.  $(3x + 4)$  in.

16. The additional cost is \$5.

## Chapter 4

### 4.1 Activity

1. a. Check students' work.

b. The areas are equal;  $A = bh$

2. a. A: 66 units<sup>2</sup>; B: 49 units<sup>2</sup>; C: 25 units<sup>2</sup>;

D: 32 units<sup>2</sup>; E: 18 units<sup>2</sup>

b. A: 66 units<sup>2</sup>; B: 49 units<sup>2</sup>; C: 25 units<sup>2</sup>;

D: 32 units<sup>2</sup>; E: 18 units<sup>2</sup>

The results are the same.

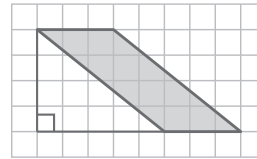
c. Answers may vary. Estimates from counting unit squares should be close to the answers from parts (a) and (b).

3. *Sample answer:* Draw a parallelogram and cut it along the height. Slide the cut off piece to the other end to form a rectangle. Then use the area formula for a rectangle to find the area of the parallelogram.

4. They are equal. *Sample answer:* Because their areas are equal and the length of the rectangle is equal to the base of the parallelogram, the parallelogram can be separated and rearranged to make a rectangle with the same dimensions as the parallelogram. So, the width of the rectangle must be equal to the height of the parallelogram.

5. 4 units; Find the perpendicular distance between the bases of the parallelogram as shown.

The height of this parallelogram is labeled on the outside of the parallelogram.



### 4.1 Practice

1. 40 m<sup>2</sup>    2. 150 ft<sup>2</sup>    3. 99 in.<sup>2</sup>    4. 70 m<sup>2</sup>

5. The side was used instead of the width.

$$A = 4(4) = 16 \text{ in.}^2$$

6. 2 units<sup>2</sup>

7. 48 units<sup>2</sup>

8. 6 in.

### 4.2 Activity

1. a. Check students' work.

b. *Sample answer:* The area of one piece is equal to one-half of the area of the rectangle;  $A = \frac{1}{2}bh$

2. a. Check students' work.

b. Check students' work.

c. parallelogram

d.  $A = \frac{1}{2}bh$ ; Check students' work.

3. a. C; C    b. F; F    c. A; A    d. D; D

e. B; B    f. G; G    g. H; H    h. E; E

4. *Answer should include, but is not limited to:* Students should create their own "triangle matching game," then trade games with a partner and solve each other's match game.

5. *Sample answer:* Two identical triangles make a parallelogram. So the formula for the area is the formula for the area of a parallelogram divided by 2.