Name _____ Date _____

LESSON 1.6

Practice

For use with pages 35–41

Complete the sentence.

1. The input variable is called the _____ variable.

2. The output variable is called the _____ variable.

Tell whether the pairing is a function.

3.

Input	Output
1	15
3	20
5	15
7	20

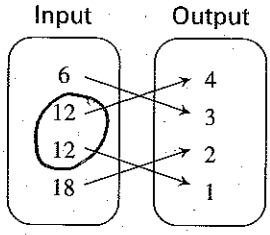
yes; all input values are unique

4.

Input	Output
5	5
6	5
7	5
8	5

yes; all input values are unique

5.



no two input values are "12".

Make a table for the function. Identify the range of the function.

6. $y = 4x - 2$

Domain: 1, 2, 3, 4

7. $y = 0.1x + 3$

Domain: 10, 20, 30, 40

8. $y = \frac{1}{2}x + 2$

Domain: 6, 7, 8, 9

Name _____ Date _____

LESSON 1.6 **Practice** *continued*
For use with pages 35–41

Write a rule for the function.

9.

Input, x	1	2	3	4
Output, y	5	10	15	20

$y = 5x$

10.

Input, x	10	11	12	13
Output, y	3	4	5	6

$y = x - 7$

11. **Shoe Sizes** The table shows men's shoe sizes in the United States and Australia. Write a rule for the Australian size as a function of the United States' size.

U.S. size	5	6	7	8	9	10
Australian size	3	4	5	6	7	8

12. **Balloon Bunches** You are making balloon bunches to attach to tables for a charity event. You plan on using 8 balloons in each bunch. Write a rule for the total number of balloons used as a function of the number of bunches created. Identify the independent and dependent variables. How many balloons will you use if you make 10 bunches?

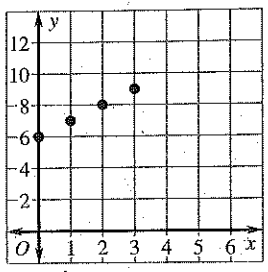
13. **Baking** A baker has baked 10 loaves of bread so far today and plans on baking 3 loaves more each hour for the rest of his shift. Write a rule for the total number of loaves baked as a function of the number of hours left in the baker's shift. Identify the independent and dependent variables. How many loaves will the baker make if he has 4 hours left in his shift?

Name _____ Date _____

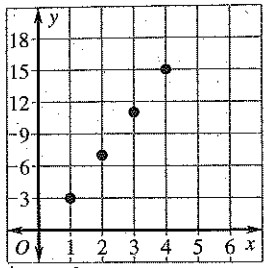
LESSON 1.7 **Practice** *continued*
For use with pages 42–48

Write a rule for the function represented by the graph. Identify the domain and range of the function.

9.



10.

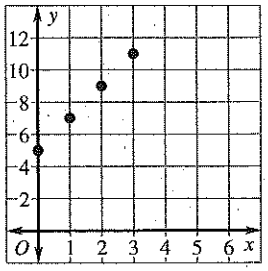


(1, 3)
(2, 7)
(3, 11)
(4, 15)

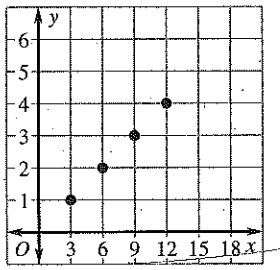
$y = 4x - 1$

domain $\{1, 2, 3, 4\}$
range $\{3, 7, 11, 15\}$

11.



12.

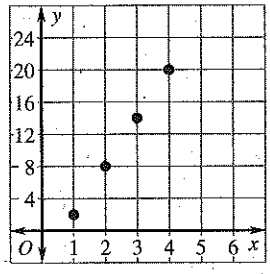


(3, 1)
(6, 2)
(9, 3)
(12, 4)

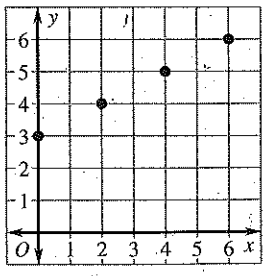
$y = \frac{1}{3}x$

domain: $\{3, 6, 9, 12\}$
range: $\{1, 2, 3, 4\}$

13.



14.



$m = \frac{1}{2}$
y-int: (0, 3)

(0, 3)
(2, 4)
(4, 5)
(6, 6)

$y = \frac{1}{2}x + 3$

domain $\{0, 2, 4, 6\}$
range $\{3, 4, 5, 6\}$

Name _____ Date _____

LESSON 2.5

Practice

For use with pages 96–101

Use the distributive property to write an equivalent expression.

1. $5(x + 11)$

2. $3(x - 12)$

3. $-4(x + 8)$

4. $9(2x + 1)$

5. $(x - 7)(-10)$

6. $(4x + 3)5$

7. $x(4x - 1)$

8. $2x(x - 1)$

9. $-x(5x + 2)$

Identify the terms, like terms, coefficients, and constant terms of the expression.

10. $-8 + 2x + 5 + 11x$

11. $4x^2 + 1 - 3x^2 + 5$

terms: $4x^2, -3x^2, 1, 5$

like terms: $4x^2$ & $-3x^2$

1 and 5

coefficients: 4 & -3

constant terms: 1 & 5

12. $7y^2 - 6 + 3y^2 - 15$

13. $3xy + 5 - 2xy + 10$

terms: $3xy, 5, -2xy, 10$

like terms: $3xy$ & $-2xy$

5 & 10

coefficients: 3 & -2

constant terms: 5 & 10

Simplify the expression.

14. $6 + 10x + 3$

15. $2(3x + 1) + 4x$

16. $6(5 - x) + 12x$

17. $7(x - 1) - 5$

18. $8x + 3(2x - 1)$

19. $-2(x + 4) - 3$

20. $11x - (x + 7)$

$11x - x - 7$

$10x - 7$

21. $9 - 2(x - 4)$

22. $7x - 3(4 - 2x)$

$7x - 12 + 6x$

$13x - 12$

Name _____ Date _____

LESSON 3.2 **Practice** *continued*
For use with pages 141–146

Solve the equation.

13. $9a + 4a = 26$

14. $14y - 6y = 48$

15. $38 = 26x - 7x$

16. $16x - 3x = -52$

17. $-9 = 11m - 8m$

18. $4.5z - 2.5z = 24$

$\frac{2z}{2} = \frac{24}{2}$

$z = 12$

19. **Yoga Class** A fitness center offers yoga classes for \$10 per class and sells yoga mats for \$19.95. A person paid a total of \$139.95 to the fitness center for yoga classes and a mat. Find the number of yoga classes the person took.

$10c + 19.95 = 139.95$
$-19.95 \quad -19.95$
$\frac{10c}{10} = \frac{120.00}{10}$
$c = 12$

12 classes

20. **Library Books** Your school has a \$1200 grant to buy books and magazine subscriptions for the school library. The average cost of a magazine subscription is \$30. Your school decides to spend \$870 on books and the remaining amount on magazine subscriptions. How many magazine subscriptions can the school buy?

11 magazine subscriptions

$30m + 870 = 1200$
$-870 \quad -870$
$30m = 330$
$\frac{30m}{30} = \frac{330}{30}$
$m = 11$

21. **Walking** You have already walked 5 miles of an 18-mile trail. If you walk the rest of the trail at a pace of 1 mile in 17 minutes, how many hours will it take you to finish the trail? Use the following verbal model to answer the question. Round your answer to the nearest tenth.

Walking rate (mi/min)	•	Number of minutes (min)	+	Number of miles already walked (mi)	=	Total number of miles walked (mi)

22. **Swimming Pool** The capacity of a small children's swimming pool is 106 gallons of water. There are currently 15 gallons of water in the pool. You are filling the pool with water at a rate of 2 gallons per minute.

a. Write an equation that gives the amount y (in gallons) of water in the pool as a function of the number x of minutes from now.

b. After how many minutes will the pool be full?

Name _____ Date _____

LESSON 3.6

Practice

For use with pages 168–173

Name the cross products of the proportion.

1. $\frac{n}{11} = \frac{40}{55}$

2. $\frac{4}{9} = \frac{1}{x}$

3. $\frac{1.8}{1.9} = \frac{b}{3.8}$

4. $\frac{a+6}{21} = \frac{4}{7}$

5. $\frac{5x}{x+1} = \frac{30}{9}$

$9 * 5x = 30(x+1)$

$45x = 30x + 30$

$-30x \quad -30x$

$\frac{15x}{15} = \frac{30}{15}$

$x = 2$

6. $\frac{2.2}{3.3} = \frac{a-2}{a-1}$

$2.2(a-1) = 3.3(a-2)$

$2.2a - 2.2 = 3.3a - 6.6$

$+6.6 \qquad +6.6$

$2.2a + 4.4 = 3.3a$

$-2.2a \qquad -2.2a$

$4.4 = 1.1a$

$\frac{4.4}{1.1} = \frac{1.1a}{1.1}$

$4 = a$

Solve the proportion.

7. $\frac{3}{5} = \frac{21}{m}$

8. $\frac{12}{7} = \frac{60}{d}$

9. $\frac{24}{x} = \frac{48}{60}$

10. $\frac{5}{7} = \frac{3w}{21}$

11. $\frac{2w}{16} = \frac{30}{80}$

12. $\frac{2z}{24} = \frac{6}{8}$

13. $\frac{8}{9} = \frac{30+a}{45}$

14. $\frac{9-y}{44} = \frac{5}{22}$

15. $\frac{26}{15} = \frac{104}{70-w}$

16. $\frac{35}{16} = \frac{c-8}{2}$

17. $\frac{1}{9} = \frac{a}{a+24}$

$a + 24 = 9a$

$-a \qquad -a$

$\frac{24}{8} = \frac{8a}{8}$

$3 = a$

18. $\frac{2}{n} = \frac{14}{n+30}$

$2(n+30) = 14n$

$2n + 60 = 14n$

$-2n \qquad -2n$

$\frac{60}{12} = \frac{12n}{12}$

$5 = n$