

Name

Summer Packet
(St. Cletus)

Date

LESSON
1.1

Practice B

For use with pages 2-7

Evaluate the expression.

1. $y + 12$ when $y = 29$
2. $47 - x$ when $x = 38$
3. $0.8a$ when $a = 7.5$
4. $12.5 + m$ when $m = 7.6$
5. $r(4.6)$ when $r = 8.1$
6. $6.25 \div g$ when $g = 2.5$
7. $\frac{x}{0.9}$ when $x = 54$
8. $\frac{62}{d}$ when $d = 3.1$
9. $\frac{4}{7} \cdot t$ when $t = \frac{7}{8}$
10. $r(8.3)$ when $r = 10.2$
11. $w + \frac{2}{5}$ when $w = \frac{1}{2}$
12. $\frac{n}{2.4}$ when $n = 12$

Write the power in words and as a product.

13. 8^7
14. $(0.1)^4$
15. x^5

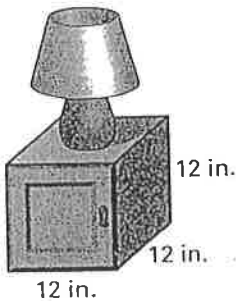
Evaluate the power.

16. 9^2
17. 2^6
18. $(0.4)^3$

Evaluate the expression.

19. x^2 when $x = \frac{1}{5}$
20. m^4 when $m = 0.6$
21. $2y^3$ when $y = 4$

22. **Side Table** A side table has interior storage space in the shape of a cube. What is the volume of the storage space if the interior length is 12 inches?



23. **Playing Cards** There are 52 cards in a standard deck of playing cards. You are combining decks of cards so that you can play a game with a large number of people. The expression $52d$ represents the number of cards in d decks. If you combine 4 decks of cards, how many cards will you have altogether?
24. **Sales Tax** An item costs c dollars and 6% sales tax is charged. The total cost including sales tax is given by the expression $1.06c$. You are buying a skateboard that costs \$75. What is the cost of the skateboard including sales tax?
25. **Flower Arranging** You are creating a flower arrangement for a friend. The total cost (in dollars) for one vase and f flowers is given by the expression $8 + 2.5f$. How much will it cost to make an arrangement with 8 flowers?

LESSON
1.2
Practice B
For use with pages 8–13
Evaluate the expression.

- | | | |
|----------------------------|-------------------------|------------------------------------|
| 1. $16 \div 8 \cdot 5$ | 2. $7^2 - 24 \div 3$ | 3. $5 + 1.2 \div 0.3$ |
| 4. $18 \div 6 + 4 \cdot 3$ | 5. $13 - 15 \div 5 + 9$ | 6. $\frac{2}{3} \cdot 3^2 - 5$ |
| 7. $8(6 - 2) + 4$ | 8. $28 - 3(4 + 5)$ | 9. $1.2 \cdot 5 - 6 \div 3$ |
| 10. $(11 + 15) \div 13$ | 11. $35 - 3^2 \cdot 2$ | 12. $\frac{4}{5}(3 \cdot 20) - 17$ |

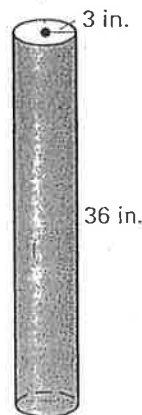
Evaluate the expression.

- | | | |
|------------------------------|--|---------------------------------------|
| 13. $3x^4 - 5$ when $x = 5$ | 14. $8m^3 \div 6$ when $m = 3$ | 15. $200 - 3y^2$ when $y = 8$ |
| 16. $5c^2 - 2c$ when $c = 9$ | 17. $3 \cdot 18t^2$ when $t = \frac{1}{3}$ | 18. $\frac{42}{n} + n$ when $n = 6$ |
| 19. $7(x + 5)$ when $x = 10$ | 20. $\frac{5a}{a - 6}$ when $a = 8$ | 21. $\frac{4d^2}{d + 1}$ when $d = 3$ |

22. Was the expression evaluated correctly using the order of operations? If not, find and correct the error.

$$80 - \frac{1}{3}(15)^2 = 80 - 5^2 = 80 - 25 = 55$$

23. **Tournament** During a bowling tournament, you bowled three games with scores of 110, 130, and 129, respectively. Your average bowling score is given by $\frac{110 + 130 + 129}{3}$. What is your average score?
24. **Painting** Three weeks ago, an art supply store started selling a paint kit for 75% of the original price. Now the kit is 15% off of the sale price. The expression $0.75x - 0.15(0.75x)$ represents the current price of the paint kit where x is the kit's original price (in dollars). Find the current price of the kit if it originally cost \$48.
25. **Crown Molding** You are decorating the perimeter of the ceiling of your living room with crown molding. The expression $2x + 2y$ represents the total amount of molding you need where x is the width of the room (in feet) and y is the length of the room (in feet). Find the total amount of wood you need if the room is 11 feet wide and 10.5 feet long.
26. **Core Sample** Before a structure is built on a plot of land, it is sometimes necessary to test the surface beneath the plot of land to determine its integrity. So, it may be necessary to take a core sample which is cylindrical in shape. Find the volume of the core sample shown by using the expression $\pi r^2 h$ where r is the radius (in inches) and h is the height (in inches) of the cylinder. Use 3.14 for π .



LESSON
1.3
Practice A

For use with pages 14–20

Translate the verbal phrase into an expression.

1. 7 more than a number b
2. The product of 11 and a number x
3. 70 divided by a number m
4. $\frac{1}{3}$ of a number y
5. The difference of 18 and a number c
6. The sum of a number t and 20
7. The quotient of a number n and 15
8. 25 times a number p

Write an expression for the situation.

9. The height of a wall that is b bricks tall if each brick is 3 inches tall
10. The number of miles in a 4-mile walk left to walk if you've already walked m miles
11. The total number of lawns you will mow today if you've already mowed 4 lawns and will mow w more lawns
12. Each person's share if p people share 3 gallons of water equally

Find the unit rate.

13. $\frac{40 \text{ flowers}}{5 \text{ vases}}$
14. $\frac{6 \text{ cups}}{3 \text{ servings}}$
15. $\frac{\$120}{10 \text{ admission tickets}}$

16. **Photographs** You can print color photos from your digital camera at a photo printing kiosk. The cost is \$.25 per photo. Write an expression for the total cost if you print p photos. How much does it cost you to print 12 photos?
17. **Bowling** In bowling, scoring is done by frame, with a frame consisting of two attempts to knock down all the pins. A spare occurs when it takes both attempts to knock down all 10 pins. The score for a spare in the current frame is found by adding the number of pins knocked down in the first attempt of the next frame to 10, the number of pins knocked down in the spare in the current frame.

- a. Write an expression for the score of the spare if you knock down p pins in the first attempt of the next frame.
- b. What is your score for a spare if you knock down 7 pins in the first attempt of the next frame?

18. **T-Shirts** You and three friends are making tie-dyed T-shirts. The local craft store sells a tie-dye kit for \$10 and T-shirts for \$3 each.

- a. Use the verbal model below to write an expression that can be used to find the total cost for making the T-shirts.

Cost of one tie-dye kit	+	Number of T-shirts	·	Cost of one T-shirt
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- b. You and your friends make 6 T-shirts. What is the total cost of the T-shirts?

LESSON
1.4
Practice B
For use with pages 21–26
Write an equation or an inequality.

- The difference of a number c and 17 is more than 33.
- The product of 3 and a number x is at most 21.
- The sum of 14 and twice a number y is equal to 78.
- The difference of 22 and the quotient of a number m and 4 is 54.
- The sum of 7 and three times a number b is at least 12.

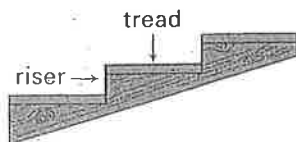
Check whether the given number is a solution of the equation or inequality.

- | | | |
|---------------------------|-----------------------|---------------------------------|
| 6. $6x + 7 = 25$; 3 | 7. $22 - 5c = 8$; 3 | 8. $\frac{b}{4} - 7 = 1$; 36 |
| 9. $7a + 4 \geq 20$; 2.7 | 10. $4y - 3 > 12$; 4 | 11. $\frac{m}{3} + 14 < 33$; 9 |

Solve the equation using mental math.

- | | | |
|------------------------|-------------------|-------------------|
| 12. $x + 9 = 17$ | 13. $y - 5 = 12$ | 14. $8w = 48$ |
| 15. $\frac{m}{4} = 16$ | 16. $2x - 1 = 15$ | 17. $3x + 2 = 20$ |

- Computers** You are buying a new printer and a new scanner for your computer, and you cannot spend over \$150. The printer you want costs \$80. Write an inequality that describes the most that you can spend on the scanner and still stay within your budget. If you buy a scanner that costs \$75, will you remain within your budget?
- Go-Carts** You and three of your friends are going to race go-carts. The last time you went, you had a coupon for \$3 off each admission and paid \$48 for the 4 admissions. What was the total price without the coupon? You pay the regular price this time and share it equally. How much does each person pay?
- Bracelets** You are making beaded bracelets for your friends. You want to use 30 beads for each bracelet and want to use no more than 145 beads. Write an inequality that models this situation. Can you make 4 bracelets?
- Staircase** When building a staircase, you need to be concerned with the height of the riser and the depth of the tread so that people can go up and down the stairs comfortably. One rule of thumb used to determine proper riser height and tread depth is that the sum of the tread depth (in inches) and twice the riser height (in inches) should equal 26 inches. Write an equation that models this situation. The riser height of a set of steps is 5 inches. What should the depth be?



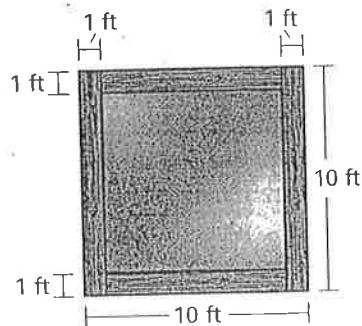
LESSON
1.5
Practice A
For use with pages 28–33

In Exercises 1–3, identify what you know and what you need to find out. You do *not* need to solve the problem.

- In science class, you are comparing the growths of plants subject to different conditions. Plant A has grown 25 inches in the same amount of time plant B has grown 17.5 inches. How many times taller is plant A than plant B?
- Your class is making a mosaic mural out of 1-inch by 1-inch colored tiles. You will make a rectangular mural that is 8 feet long and 4 feet tall. How many tiles will you need to make the mural?
- Your baseball team has raised \$240 for T-shirts and hats. It will cost \$15 for each of the 20 players to have a T-shirt and a hat. How much more money will each player have to pay to cover the cost?

In Exercises 4 and 5, state the formula that is needed to solve the problem. You do *not* need to solve the problem.

- The temperature is 74°C . What is the temperature in degrees Fahrenheit?
- You are traveling 150 miles to your cousin's house. You travel at a rate of 50 miles per hour. When will you get to your cousin's house?
- Stamp Collection** Your stamp collection consists of 120 stamps. Each stamp has either a cancellation mark or no cancellation mark. There are 75 more stamps with cancellation marks than stamps without cancellation marks. Let x be the number of stamps without cancellation marks. Which equation correctly models this situation?
 - $x + 75 = 120$
 - $x + (x + 75) = 120$
 - $x + (x - 75) = 120$
- Picnic** You are responsible for buying the hamburger rolls for an upcoming picnic. Each bag of rolls costs \$1.30 and contains 8 rolls. You need to buy a total of 64 rolls. How much money will it cost for the rolls?
- Temperature** Yesterday's high and low temperatures were 50°F and 41°F , respectively. What are these temperatures in degrees Celsius?
- Sandbox** A civic group is building a sandbox that is enclosed by 1-foot wide railroad ties. The group needs to find the area inside the sandbox to find the amount of sand needed. Use the figure and the formula for area to write an equation that you can use to find the area inside the sandbox.



LESSON
1.5**Practice B**

For use with pages 28–33

In Exercises 1 and 2, identify what you know and what you need to find out. You do *not* need to solve the problem.

1. You are making cookies for a bake sale and need to make enough cookies to fill 24 boxes containing 6 cookies each. How many dozen cookies do you need to make?
2. The cellular phone plan you signed up for gives you 400 minutes a month for \$35 and charges \$.15 for each additional minute over 400 minutes. How long can you talk on the phone each month and stay within a budget of \$45?

In Exercises 3 and 4, state the formula that is needed to solve the problem. You do *not* need to solve the problem.

3. You invest \$200 into a savings account that earns 2% simple interest. How long will it take to earn \$50 in interest?
4. It takes you half an hour to travel 26 miles to work. What is your average speed?
5. **Sticker Collection** Your sticker collection consists of 175 stickers. Each sticker is either an animated cartoon character or an animal. There are 42 less stickers that are animated characters than stickers that are animals. Let x be the number of stickers that are animals. Which equation correctly models this situation?

A. $x - 42 = 175$

B. $x + (x + 42) = 175$

C. $x + (x - 42) = 175$

6. **Bookshelf** You installed a bookshelf on the wall to organize some of your books. The books that you absolutely want on the shelf weigh a total of $6\frac{3}{4}$ pounds. The bookshelf can handle no more than 9 pounds. You plan on filling the rest of the shelf with your paperbacks that each weigh about $\frac{1}{8}$ pound. Assuming you won't run out of room, how many paperback books can you add to the shelf?
7. **Camping** You are responsible for buying supplies for an upcoming camping trip. You can buy packages of stew that just need water added and then are heated. Each package costs \$4.95 and contains enough stew for 2 people. You need to buy enough packages so that you can have stew for 3 days of the trip. There will be 8 people on the trip. How many packages do you need? What is the total cost?
8. **Banking** You are going to open a certificate of deposit (CD) that earns simple interest. One bank offers a CD in which you must deposit \$500 for 3 years with 2% interest. Another bank offers a CD in which you must deposit \$250 for 4 years with 3% interest. Which CD will earn more interest?

LESSON
1.6

Practice A
For use with pages 35–41

Complete the sentence.

- The collection of all output values is called the ? of a function.
- The collection of all input values is called the ? of a function.

Identify the domain and range of the function.

3.

Input	Output
1	8
3	7
5	6
7	5

4.

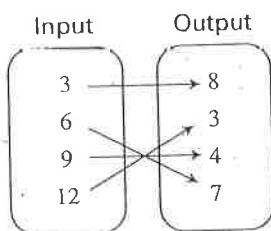
Input	Output
7	4
2	2
5	1
3	5

5.

Input	Output
0.4	15
0.5	13
0.6	11
0.7	9

Tell whether the pairing is a function.

6.



7.

Input	Output
6	3
3	1
0	2
3	4

8.

Input	Output
10	9
11	3
12	6
13	9

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

9. $y = 4x$

Domain: 0, 1, 2, 3

10. $y = x + 2$

Domain: 11, 15, 22, 27

11. $y = x - 3$

Domain: 5, 9, 14, 19

12. **Flower Garden** You have a flat of 12 plants that you are planting in a garden.

- Copy and complete: Each time you put one plant in the garden, you have one less plant in the flat, so ? is a function of ?.
- Write a rule for the number of plants y you have left in the flat as a function of the number of plants x you have put in the garden so far.
- Make a table and identify the range of the function.

13. **Centerpieces** A florist is making centerpieces for a charity event. She is using 9 flowers in each centerpiece. Write a rule for the total number of flowers used as a function of the number of centerpieces created.

14. **Kickboxing** You join a kickboxing class at a local gym. The cost is \$5 per class plus \$25 for the initial membership fee. Write a rule for the total cost of the class in dollars as a function of the number of classes you attend. How much will it cost if you go to 8 classes?

LESSON 1.7 Practice A
For use with pages 42–48

Complete the statement.

- The ? axis of the graph of a function is labeled with the input variable.
- The ? axis of the graph of a function is labeled with the output variable.

Write the ordered pairs that can be formed from the table.

3.

Input	Output
0	2
1	4
2	6
3	8

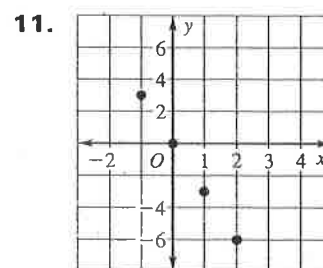
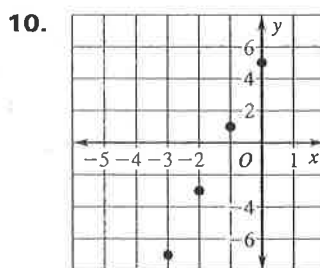
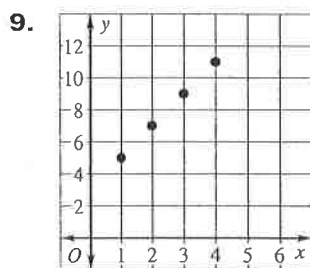
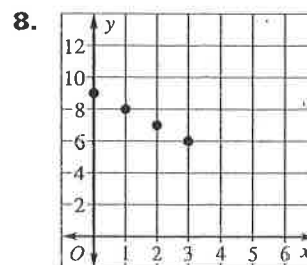
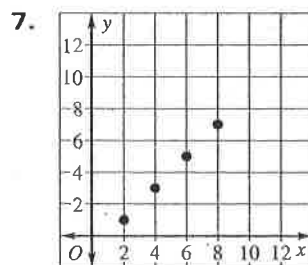
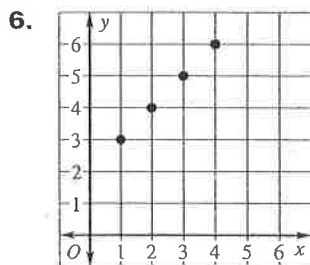
4.

Input	Output
3	2
6	2
9	2
12	2

5.

Input	Output
10	4
9	8
8	12
7	16

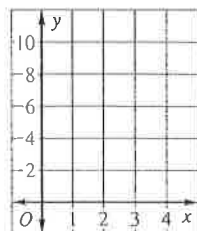
Identify the ordered pairs in the graph. Then identify the domain and range.



Graph the function.

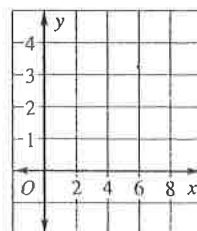
12. $y = x + 5$

Domain: 0, 1, 2, 3



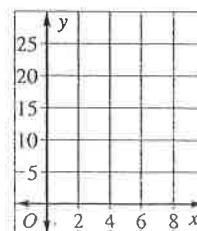
13. $y = x - 3$

Domain: 6, 5, 4, 3



14. $y = 3x$

Domain: 1, 3, 5, 7



LESSON
1.7

Practice A *continued*
For use with pages 42–48

Match the rule for the function with its graph.

15. $y = 6x$

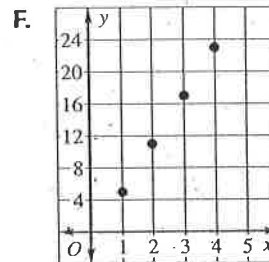
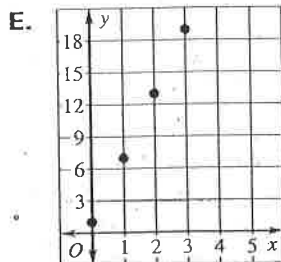
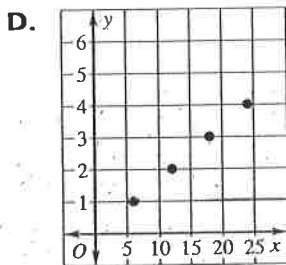
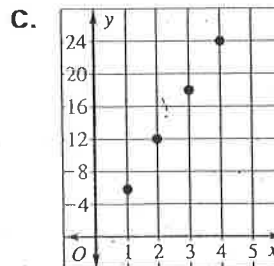
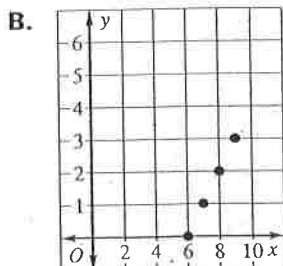
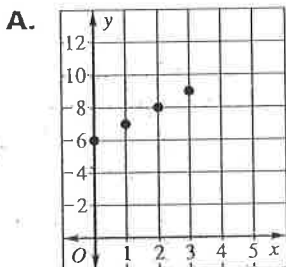
16. $y = 6x - 1$

17. $y = x + 6$

18. $y = \frac{1}{6}x$

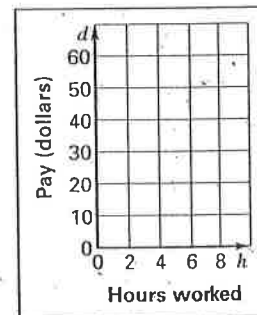
19. $y = x - 6$

20. $y = 6x + 1$

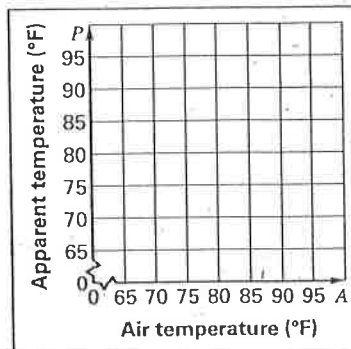


21. **Hourly Pay** The table shows the pay d (in dollars) as a function of the number of hours worked h . Graph the function.

Hours worked, h	1	2	3	5	8
Pay (dollars), d	6.75	13.50	20.25	33.75	54



22. **Heat Index** The table shows the apparent temperature P (in degrees Fahrenheit), or the temperature as it feels to your body, as a function of the air temperature A (in degrees Fahrenheit) when there is 10% humidity. Graph the function. Then use your graph to predict the apparent temperature when the air temperature is 105°F and the humidity is 10%.



Air temperature (°F), A	70	75	80	85	90	95
Apparent temperature (°F), P	65	70	75	80	85	90

CHAPTER

1

Cumulative Review*For use after Chapter 1***Evaluate the expression.** (*Lesson 1.1*)

- $12x$ when $x = 6$
- $5.1 - w$ when $w = 3.8$
- $\frac{t}{8}$ when $t = 56$
- m^2 when $m = 4$
- 2^n when $n = 5$
- $\frac{1}{2}k$ when $k = \frac{3}{4}$

Evaluate the expression. (*Lesson 1.2*)

- $27 - 11 + 9$
- $8 + 4 \cdot 3$
- $7 + 8^2 \div 4$
- $14 \div (3 + 2^2)$

Translate the verbal phrase into an expression. (*Lesson 1.3*)

- The product of 9 and a number x
- 15 more than a number y
- The difference of a number z squared and 6
- 11 less than three times a number w

Write an equation or an inequality. (*Lesson 1.4*)

- The product of 7 and a number x is 42.
- The sum of a number y and 17 is at most 36.
- The product of 5 and the sum of a number z and 3 is less than 45.

Check whether the given number is a solution of the equation or inequality. (*Lesson 1.4*)

- $13 + m = 19$; 6
- $3p - 8 = 12$; 7
- $n - 1.2 \leq 3.7$; 5.1
- $r^2 + 8 > 21$; 4

State the formula that is needed to solve the problem. Then solve the problem. (*Lesson 1.5*)

- What is the interest earned on \$500 invested for 7 years in an account that earns simple interest at a rate of 4% per year?
- A bus travels at an average speed of 65 miles per hour. How many miles does the bus travel in 4.5 hours?

Post-Course Test

For use after Chapter 13

Evaluate the expression for the given value(s) of the variables(s).

1. $m - 8$ when $m = 12$
2. $11y$ when $y = 5$
3. $a \div (b - 4)$ when $a = 24$ and $b = 7$
4. Describe the pattern. Then find the next three numbers.
3, 9, 27, 81, ? , ? , ?
5. Find the perimeter and the area of a rectangle that has a length of 7 feet and a width of 4 feet.

Evaluate the expression.

6. $23 - (9 - 5)^2$
7. $\frac{17 - 8}{6 + 12}$
8. $52 \div (13 \times 2)$

Find the sum, difference, product, or quotient.

9. $3.24 + 5.48$
10. $21.73 - 14.87$
11. 2.4×0.125
12. $15.3 \div 0.09$

Write the number in scientific notation.

13. 61,500
14. 17,540,000

Copy and complete the statement using $<$, $>$, or $=$.

15. 17.1 g ? 1.71 mg
16. 6.3 cm ? 63 mm
17. 1250 mL ? 12.5 kL

Find the mean, median, mode(s), and range of the data.

18. 23, 19, 32, 28, 17, 21, 28
19. 2.4, 1.7, 2.1, 1.5, 2.3, 2.1, 1.9, 1.2
20. In a survey that asked students how they used their free time, 32 said watching TV, 41 said talking on the phone, 24 said playing video games, and 15 said reading. Use this information to make a bar graph.
21. Make a stem-and-leaf plot and a box-and-whisker plot of the data: 12, 15, 9, 18, 21, 17, 10, 8, 13, 15, 14, 11, 22, 9.

Answers

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____

Post-Course Test

For use after Chapter 13

Tell whether the number is *prime* or *composite*. Then write all the factors of the number.

22. 47

23. 81

Use a factor tree to write the prime factorization of the numbers. Then find the GCF and the LCM of the numbers.

24. 45, 150

25. 68, 102

Copy and complete the statement using $<$, $>$, or $=$.

26. $\frac{7}{12} \text{ --- } ? \text{ --- } \frac{2}{3}$

27. $\frac{7}{10} \text{ --- } ? \text{ --- } \frac{11}{15}$

Write the decimal as a fraction or mixed number.

28. 0.04

29. 2.35

Find the sum, difference, product, or quotient.

30. $\frac{11}{16} + \frac{3}{4}$

31. $7\frac{2}{5} - 4\frac{7}{10}$

32. $2\frac{1}{3} \cdot 3\frac{3}{4}$

33. $\frac{7}{12} \div \frac{14}{15}$

Copy and complete the statement.

34. 8 pt = ? c

35. 23 qt = ? gal ? qt

Find the sum or difference.

36. $\begin{array}{r} 8 \text{ ft } 5 \text{ in.} \\ + 4 \text{ ft } 9 \text{ in.} \\ \hline \end{array}$

37. $\begin{array}{r} 6 \text{ c } 4 \text{ fl oz} \\ - 3 \text{ c } 5 \text{ fl oz} \\ \hline \end{array}$

Order the integers from least to greatest.

38. -6, 3, -4, 0, -11, 9

39. 42, -36, 17, -28, 21, -16

40. Write the integer that represents a loss of 52 pounds. Then write the opposite of that integer.

Find the sum, difference, product, or quotient.

41. $-11 + (-17)$

42. $21 - 32$

43. $10(-3)$

44. $-54 \div (-6)$

Evaluate the expression.

45. $-5 \cdot 8 \cdot \left(\frac{1}{5}\right)$

46. $\frac{1}{3}(1.3) + \frac{1}{3}(1.7)$

Answers

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____

31. _____

32. _____

33. _____

34. _____

35. _____

36. _____

37. _____

38. _____

39. _____

40. _____

41. _____

42. _____

43. _____

44. _____

45. _____

46. _____

Post-Course Test

For use after Chapter 13

47. Find the length, width, and area of the rectangle formed by the points $R(-2, 3)$, $S(4, 3)$, $T(4, -1)$, and $U(-2, -1)$.

Write the verbal sentence as an equation. Let x represent the number.

48. 7 less than a number is 15.
49. 3 times the sum of a number and 2 is 12.

Simplify the expression.

50. $4x - 8 - 7x - 3$ 51. $17t + 3(4t - 5)$
52. $5(3m + 1) - 8(2m + 3)$

Solve the equation. Check your solution.

53. $w - 4 = -2$ 54. $\frac{2}{3}x = -10$
55. $4y - 2 = 7$ 56. $-9 = -9(2z - 3)$

Solve the inequality.

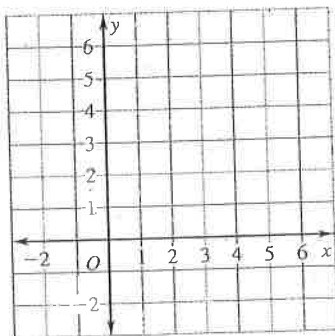
57. $15 > m + 8$ 58. $-7x \leq 21$

59. Write a function rule for the input-output table.

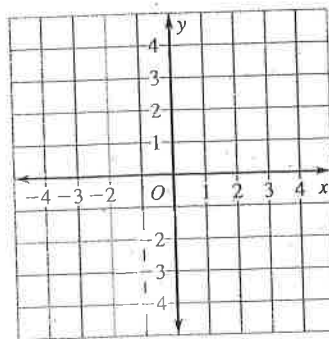
Input, x	-2	-1	0	1
Output, y	7	5	3	1

Graph the function.

60. $y = \frac{3}{5}x$



61. $y = -3x + 1$



Answers

47. _____

48. _____
49. _____
50. _____
51. _____
52. _____
53. _____
54. _____
55. _____
56. _____
57. _____
58. _____
59. _____
60. See left.
61. See left.

