1-1

Name _____ Date _____

Homework Practice

5NS1.4

Prime Factors

Chapter Resources

Tell whether each number is *prime, composite,* or *neither*. Find the prime factorization for each composite number.

1. 28

_____

_____

2. 36

_____

_____

3. 42

_____

_____

4. 11

_____

_____

5. 34

_____

_____

6. 7

_____

_____

7. 72

_____

_____

8. 23

_____

_____

9. 12

_____

_____

Spiral Review

Create a table to show the possible outcomes for the situation. Then, use the table to describe the probability of the event taking place.

10. Sonja has a bag of canned food. She has two cans of peas, five cans of plum tomatoes, and one can of soup. She grabs a can out of the bag without looking. Describe the probability of Sonja grabbing a can of peas.

_____

1-1

Name _____ Date _____

Problem-Solving Practice

5NS1.4

Prime Factors

1. There are 13 flavors at a local ice cream parlor. Is the number 13 a prime number or a composite number? If it is composite, write the number as the product of prime numbers.

_____

2. Martina ate 27 raisins. Is the number 27 prime or composite? If it is composite, write the number as the product of prime numbers.

_____

3. Sydney used divisibility rules to show that the number 640 is composite. What will she write when she writes the number as the product of prime numbers?

_____

4. Hope used a factor tree to factor the number 240. How many "branches" will be at the bottom of this factor tree? Write the number 240 as the product of prime numbers.

_____

5. Cruz and his friend, Penny, need to determine what numbers are prime and what numbers are composite for a homework assignment. Cruz says that the number 5 is a composite number because it has the factors 2 and 2.5. Explain what is wrong with his reasoning.

_____

_____

6. Jesse drew a factor tree of a composite number and ended up with $4 \times 4 \times 5 \times 5 \times 3$ as the prime factorization. Explain what is wrong with this factorization. What is the correct prime factorization? What is the composite number that was factored?

_____

_____

1–2

Name _____ Date _____

Homework Practice

5NS1.3, 5NS1.4

Powers and Exponents

Complete the table.

	Exponent	Product
1.	6^2	
2.		5×5
3.	4^4	
4.		$2 \times 2 \times 2 \times 2$
5.	3^3	
6.	6^2	
7.		$4 \times 4 \times 4$
8.		3×3
9.	2^3	
10.		$5 \times 5 \times 5$
11.		$7 \times 7 \times 7$
12.	8^3	

Spiral Review

Find the prime factorization of the composite numbers.

13. 75 _____

14. 77 _____

15. 42 _____

Tell whether each number is *prime, composite,* or *neither.*

16. 17 _____

17. 25 _____

18. 44 _____

19. 7 _____

20. 31 _____

21. 0 _____

1-2

Name _____ Date _____

Problem-Solving Practice

5NS1.3, 5NS1.4

Powers and Exponents

1. Lou wrote 3^4 in standard form. What was the number?

_____

2. Heidi's family drove 1,000 mi on vacation. Write this number using a base and an exponent. Use 10 as the base.

_____

3. Halle's family is buying new carpet for her bedroom. The room is 4 yards long and 4 yards wide. Write the area using a base and an exponent. Remember that area is calculated by multiplying the length times the width.

_____

4. Lupe emptied her bank and has 144 pennies and 121 nickels. Write each of these numbers using a base and an exponent. For the pennies use 12 as the base. For the nickels use 11 as the base.

_____

5. For a punch bowl, Carin needs a block of ice with a volume of at least 125 cubic inches. She has a cube of ice that is five inches on each side. Write the volume of the cube using a base and exponents. Then write it in standard form. Is the block of ice big enough? Remember that volume is calculated by multiplying length times width times height.

_____

_____

6. Very large and very small numbers in science are often written using bases and exponents. For example, the sun is approximately 1.5×10^8 km from Earth. Write the distance in standard form.

_____

1–3

Name _____ Date _____

Homework Practice

4AF1.2

Order of Operations

Chapter Resources

Find the value of each expression.

1. $2 \times (4 + 7) - 6$ _____

2. $10 \times (6 - 3) \div 15$ _____

3. $15 \div 3 + 16 \times (9 - 5)$ _____

4. $66 \div 11 + 3$ _____

5. $13 + 5^2 \times (8 - 3)$ _____

6. $18 - 3^2 + (9 - 0)$ _____

7. $27 \div 3^2 + (38 - 15)$ _____

8. $26 + 6^2 \times 4$ _____

9. $8 \div (20 - 16) + 3^2$ _____

10. $7 \times 6 \div 2 + (9 - 4)$ _____

11. $22 \times 4 \div 4 - 4^2$ _____

12. $8 + 32 \times (20 - 10)$ _____

Spiral Review

Write each product using an exponent. (Lesson 1–2)

13. $4 \times 4 \times 4$ _____

14. $5 \times 5 \times 5 \times 5$ _____

15. 8×8 _____

16. $3 \times 3 \times 3$ _____

Write each power as a product of the same factor. Then find the value of the following.

17 7^3 _____

18. 6^2 _____

19. 4^2 _____

20. 2^3 _____

21. 3^5 _____

22. 5^4 _____

1-3

Name _____ Date _____

Problem-Solving Practice

4AF1.2

Order of Operations

1. Ted evaluated the expression $2 + 4 \times 6$. What was his answer?

_____

2. Frank evaluated the expression $8^2 - (2 \times 6 + 3)$. What was his answer?

_____

3. Francisco wrote the number 3×10^2 in standard form. His answer was 900. What mistake did he make in order of operations?

_____

_____

What is the correct answer?

_____

4. Glenn ate 2 apples a day for a week. In addition to the apples, he ate 3 pears during the week. Write the expression that shows how many pieces of fruit he ate during the week.

_____

Evaluate the expression.

_____

5. Create an expression whose value is 12. It should contain four numbers and two different operations.

_____

_____

6. Keiko's class collected coins to buy food for a local family. When Keiko counted the coins, there were 27 quarters, 92 dimes, 140 nickels, and 255 pennies. Her teacher offered to add an amount to the total, equal to what the students collected. What expression did he use to find out how much money they had?

_____

_____

Evaluate the expression. _____

1–4

Name _____ Date _____

Homework Practice

5MR1.1, 4NS3.4

Problem-Solving Investigation

Use the four-step plan to solve each problem.

1. A train left the station at 12:45. It traveled 455 miles in 7 hours. How many miles did it travel in each hour?

_____

2. The Delgados are buying a pool that is 30 feet x 30 feet for $1,188. They plan to pay in 12 equal payments. Find the amount of each payment.

_____

3. After shopping for school supplies, Martin came home with $4. He bought a pack of pens for $6, a calculator for $12, and a notebook for $3. How much money did he start with?

_____

4. Julio increases the laps he runs by three laps each day. If he begins on Monday running 4 laps, how many laps will he run on Wednesday at his current rate?

_____

Spiral Review

Find the value of each expression. (Lesson 1–3)

5. $15 - 2^3 \div 4$

_____

6. $22 - 17 + 8$

_____

7. $23 + 4^2 \div 2$

_____

8. $64 - 12 + 7$

_____

1–5

Name _____ Date _____

Homework Practice

5AF1.2

Algebra: Variables and Expressions

Evaluate each expression if $m = 3$ and $n = 15$.

1. $25 - n$ _____

2. $2m - 4$ _____

3. $3n + m$ _____

4. $n - 3$ _____

5. $60 \div n$ _____

6. $2m + n$ _____

7. $2n - m$ _____

8. $6m + 3$ _____

9. $n - 2m$ _____

10. $3m + n$ _____

11. $4n + m$ _____

12. $20 - n$ _____

Evaluate each expression if $a = 2$, $b = 12$, and $c = 8$.

13. $a^2 + 2b$ _____

14. $2c - 3$ _____

15. $b + 3a$ _____

16. $2b + 6$ _____

17. $8a - b$ _____

18. $8c - b$ _____

Spiral Review

Find the value of each expression. (Lesson 1–4)

19. $6 + 6 \times 3$ _____

20. $40 \div 2 \times 5$ _____

21. $18 + 4 - 8$ _____

22. $18 - 2^3 + 1$ _____

23. $139 - 3^3$ _____

24. $5 + 6 \times 7$ _____

1–5

Name _____ Date _____

Problem-Solving Practice

5AF1.2

Algebra: Variables and Expressions

Solve.

1. Jaynee's friends ate 4 apples more than her family ate. Write an expression for how many apples Jaynee's friends ate.

_____

2. Ian walked 5 blocks home from school. His friend Kim walked x blocks farther. Write an expression for how far Kim walked.

_____

3. Carmen took her newspapers and aluminum cans to the recycling center. She weighed everything and found that she had 24 pounds more newspapers than cans. Write an expression for the weight of the newspapers, using c as a variable. _____

Find the value of the expression if $c = 12$.

_____

4. Hannah's grade on her last math test was 4 points less than Mark's grade. Write an expression for Hannah's grade, using m as a variable.

_____

Find the value of the expression if $m = 92$.

_____

5. Ron made cookies for the fair. His sister made candy. Four cookies were packaged together, and 6 pieces of candy were packaged together. There were 6 more packages of cookies than p packages of candy. Write an expression for the number of packages of cookies. _____

Find the value of the expression if $p = 8$. _____

How many cookies and pieces of candy were taken to the bake sale?

_____ cookies

_____ pieces of candy

6. Michael went to the water park. He spent 2 hours longer on the water slides than he did in the wave pool. If t represents the hours on the water slides, write an expression for the time he spent in the wave pool. _____

Find the value of the expression if $t = 4$. _____

How much time did he spend at the water park? _____ hours

Name _____ Date _____

1–6 Homework Practice

5AF1.2, 5AF1.5

Algebra: Functions

Complete each function table.

1.

Input (x)	Output ($x - 3$)
5	
8	
4	

2.

Input (x)	Output ($3x$)
4	
2	
9	

Find the rule for each function table.

3.

Input (x)	Output
4	8
3	6
12	24

_____

4.

Input (x)	Output
7	2
15	10
25	20

_____

5.

Input (x)	Output
18	6
27	9
33	11

_____

6.

Input (x)	Output
10	50
12	60
35	175

_____

Spiral Review (Lesson 1–5)

7. Evaluate $13 + a$ if a is 7.

_____

8. Evaluate $x - y$ if x is 87 and y is 78.

_____

Evaluate each expression if $a = 6$ and $b = 10$.

9. $b - a$

_____

10. $b \times a$

_____

1–6

Name _____ Date _____

Problem-Solving Practice

5AF1.2, 5AF1.5

Algebra: Functions

1. DRAGONS The Luck Dragons that live in the Enchanted Forest weigh $4x$ pounds when they are x years old. Write a function table that can be used to find the weights of 6-year old, 8-year old, and 10-year old Luck Dragons.

2. ROLLER COASTER Twelve people are able to ride the Serpent of Fire roller coaster at one time. Write a function table that shows the total number of people that have been on the roller coaster after 1, 2, 3, and 4 rides if the roller coaster is full each time.

3. MOVIES At the local movie theater it costs \$10.00 for 2 students to see a movie. It costs \$15.00 for 3 students, and it costs \$20.00 for 4 students. Let the number of students be the input. What is the function rule that relates the number of students to the cost of tickets?

_____

4. HOMEWORK At Elmwood Middle School, sixth graders spend 1 hour every night doing homework. Seventh graders spend 2 hours, and eighth graders spend 3 hours. Let the students' grade be the input. What is the function rule between the students' grade and the amount of time the students spend on homework every night?

_____

5. BEADS A bead shop sells wooden beads for \$3 each and glass beads for \$7 each. Write a function rule to represent the total selling price of wooden (w) and glass (g) beads.

_____

6. Use the function rule in Exercise 5 to find the selling price of 20 wooden beads and 4 glass beads.

_____

1-7

Name _____ Date _____

Homework Practice

5MR2.6, 4NS2.1

Problem-Solving Strategy

Use the guess-and-check strategy to solve.

1. Jamal is thinking of four different numbers from 1 through 9 whose sum is 21. Find the numbers.

_____

2. Mr. Thompson took his 5 children to the amusement park. Tickets for children 12 and older cost $3.50. Tickets for children under 12 cost $2.25. He spends a total of $16.25. How many of his children are 12 and older?

_____

3. A cabin has room for 7 campers and 2 counselors. How many cabins are needed for a total of 49 campers and 14 counselors?

_____

Spiral Review

Solve. (Lesson 1-6)

4. El Capitan, in California, is 3,600 feet high. Mt. Morgan is 13,748 feet, Arrowhead Peak is 4,237 feet, and Hawkins Peak is 10,024 feet. List the mountains by height from greatest to least.

_____

5. A department store is deducting $10 off the total purchase for shoppers from 6 A.M. to 7 A.M. Define a variable. Write a function rule that relates the final cost to the total purchase amount.

_____

6. Sonia is buying peanuts for a party. She can buy them in bulk for $4 a pound. Define a variable. Write a function rule that relates the total cost of the peanuts to the amount she buys.

_____

1–8

Name _____ Date _____

Homework Practice

5AF1.1, 5AF1.2

Algebra: Equations

Chapter Resources

Solve each equation mentally.

1. $4 + x = 12$ _____
2. $16 - p = 3$ _____
3. $15 \div b = 3$ _____
4. $8 = 4f$ _____
5. $10k = 50$ _____
6. $64 \div g = 8$ _____
7. $j - 14 = 6$ _____
8. $4s = 24$ _____
9. $18 \div t = 3$ _____

Spiral Review

Copy and complete each function table. (Lesson 1–7)

10.

Input (x)	Output ($x + 2$)
7	
9	
11	

11.

Input (x)	Output ($x - 4$)
4	
7	
10	

Find the rule for each function table.

12.

Input (x)	Output
4	7
6	9
9	12

_____

13.

Input (x)	Output
25	13
20	8
13	1

_____

1–8

Name _____ Date _____

Problem-Solving Practice

5AF1.1, 5AF1.2

Algebra: Equations

For Exercises 1–3, use the table that gives the average lengths of several unusual insects in centimeters.

Insect	Length (cm)	Insect	Length (cm)
Walking stick	15	Giant water bug	6
Goliath beetle	15	Katydid	5
Giant weta	10	Silkworm moth	4
Harlequin beetle	7	Flower mantis	3

1. The equation $15 - x = 12$ gives the difference in length between a walking stick and one other insect. If x is the other insect, which insect is it?

_____

2. The equation $7 + y = 13$ gives the length of a Harlequin beetle and one other insect. If y is the other insect, which insect makes the equation a true sentence?

_____

3. Bradley found a silkworm moth that was 2 centimeters longer than average. The equation $m - 4 = 2$ represents this situation. Find the length of the silkworm moth that Bradley found.

_____

4. A Monarch butterfly flies about 80 miles per day. So far it has flown 60 miles. In the equation $80 - m = 60$, m represents the number of miles it has yet to fly that day. Find the solution to the equation.

_____

5. The nymphs of some cicadas can live among tree roots for 17 years before they develop into adults. One nymph developed into an adult after only 13 years. The equation $17 - x = 13$ describes the number of years less than 17 that it lived as a nymph. Find the value of x in the equation to tell how many years less than 17 years it lived as a nymph.

_____

6. A harlequin beetle lays eggs in trees. She can lay up to 20 eggs over 3 days. After the first day, the beetle has laid 9 eggs. If she lays 20 eggs in all, how many eggs will she lay during the second and third days?

_____

1–9

Name _____ Date _____

Homework Practice

5AF1.2, 5MG1.4

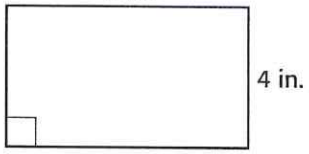
Algebra: Area Formulas

Solve.

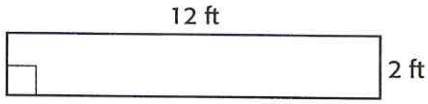
1. Find the area of a square with a side length of 14 inches.

_____

Find the area of each rectangle.

2. 

_____

3. 

_____

Find the area of the following squares and rectangles.

4. a square with sides of 5 ft _____
5. a rectangle with a length of 13 inches and a width of 3 inches _____
6. a square with sides of 8 ft _____
7. a rectangle with a length of 14 inches and a width of 4 inches _____
8. a square with sides measuring 9 ft _____

Spiral Review

Solve each equation. (Lesson 1–8)

9. $m + 15 = 27$ _____
10. $n + 35 = 42$ _____
11. $7b = 35$ _____
12. $g \div 3 = 4$ _____
13. $4p = 16$ _____
14. $12 \div c = 6$ _____
15. $y - 5 = 24$ _____
16. $r - 7 = 2$ _____

1–9

Name _____ Date _____

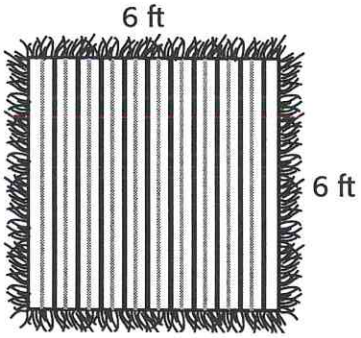
Problem-Solving Practice

5AF1.2, 5MG1.4

Algebra: Area Formulas

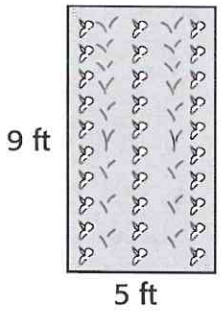
Solve.

1. Felicia wants to clean the rug in her room. She buys carpet cleaner that will clean 40 ft^2. Find the area of her rug. Will she have enough carpet cleaner?



_____

2. Lori wants to buy a flower mat that has seeds and fertilizer in it for her garden. She made a diagram of her garden. What is the area of the flower mat that she needs?



_____

3. The playing area of a college's football field measures 100 yd by 53 yd. How much area does the football team have to play on?

_____

4. Mr. and Mrs. Wilkes want to make a patio in their yard. The patio will be 15 ft long and 10 ft wide. Each patio tile covers 1 square ft and costs $2. How much will they spend on patio tiles?

_____

5. You have 100 ft of fencing to make a pen for your dog. You want your dog to have the biggest play area possible. What shape would you make the pen?

_____

6. The Carsons are putting a rectangular swimming pool in their backyard. The pool will measure 20 ft by 12 ft. They plan to have a cement walkway around the pool, which should measure 4 ft wide. What is the area of the walkway?

_____

1-10

Name _____ Date _____

Homework Practice

5AF1.3

Algebra: The Distributive Property

Find each product mentally. Use the Distributive Property.

1. 10×41 _____ **2.** 5×32 _____ **3.** 3×57 _____

4. 18×3 _____ **5.** 14×5 _____ **6.** 2×26 _____

Rewrite each expression using the Distributive Property.

7. $5 \times (14 - 3)$ _____ **8.** $6 \times (9 + 2)$ _____

9. $7 \times (2 - 1)$ _____ **10.** $9 \times (3 + 4)$ _____

Rewrite each expression using the Distributive Property. Then evaluate.

11. $4 \times (8 + 2)$ _____ **12.** $8 \times (9 + 3)$ _____

13. $3 \times (12 + 4)$ _____

Spiral Review

14. Find the area of a square whose sides are 19 inches long. _____

Solve each equation mentally.

15. $a + 13 = 18$ _____ **16.** $43 - b = 24$ _____

17. $49 = 7x$ _____ **18.** $39 - k = 12$ _____

1–10

Name _____ Date _____

Problem-Solving Practice

5AF1.3

Algebra: The Distributive Property

Solve.

1. Ray needs to multiply 5×26 to find the area of a rectangle. Fill in the blanks using the Distributive Property.

$5 \times 26 = 5 \times (\_\_\_\_ + 6)$

$= (5 \times \_\_\_\_) + (5 \times 6)$

$= \_\_\_\_ + 30$

$= \_\_\_\_$

_____

2. To multiply 8×14, Jana used the distributive property. Fill in the blanks to show what she did:

$8 \times 14 = 8 \times (10 + \_\_\_\_)$

$= (8 \times \_\_\_\_) + (8 \times 4)$

$= \_\_\_\_ + 32$

$= \_\_\_\_$

_____

3. Four friends went out to dinner. To cover dinner, tax, and tip, each person paid $18. How much did they pay all together?

_____

4. The fifth-grade classes at Wilcox Elementary School are reading books during the summer. There are 76 students, and each is supposed to read 4 books. How many books will the students read in all?

_____

5. The four Boy Scout troops in Carver City sold 1,238 buckets of popcorn to raise money. If each bucket costs $4, how much money did the troops raise?

_____

6. James builds and sells furniture. Last month he sold 9 bookcases and 6 coffee tables. If each bookcase costs $310, and each coffee table costs $275, how much did James make?

_____