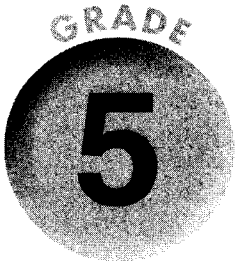
Houghton Mifflin

California Math

Homework and Problem Solving

Student Book

- Homework
- Leveled Problem Solving



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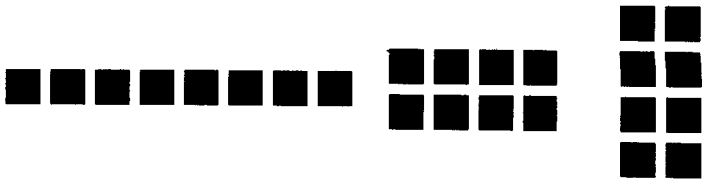
Name _____ Date _____

Hands On: Find Prime Numbers

CA Standard
KEY NS 1.4

Can Jules arrange 8 blocks in one or more rows with an equal number of blocks in each row? To find out, decide whether 8 is prime or not prime.

Prime numbers have exactly two different factors: 1 and itself.	
Is 8 a prime number?	8 has more than two factors (1 and itself), so it is **not** a prime number.
Ask yourself: How many ways could I arrange 8 tiles?	
Jules can arrange the 8 blocks in more than one way, so 8 is not a prime number.	

Decide if the number is prime or not prime. You can draw arrays or use your completed table.

1. 6 _____

2. 11 _____

3. 27 _____

4. 42 _____

5. 19 _____

6. 31 _____

7. 24 _____

8. 37 _____

9. 13 _____

Spiral Review (Grade 4, Chapter 7, Lesson 2) **KEY 4 AF 1.2, 4 AF 1.3**

Simplify.

10. $4 + (5 - 2)$ _____

11. $(42 - 27) \times 2$ _____

12. Forty-five students were on a bus on the way home from school. Twelve students got off the bus at the first stop, how many people are now on the bus including the bus driver? _____

Name _____ Date _____

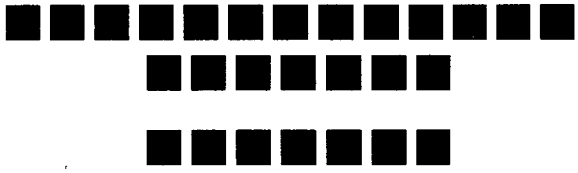
Hands On: Find Prime Numbers

CA Standard KEY NS 1.4

Decide if the number is *prime* or *not prime*. You can draw arrays or use your completed table.

1. Look at the array for the number 5. Is 5 prime or not prime?

2. Look at the arrays for the number 14. Is 14 prime or not prime?

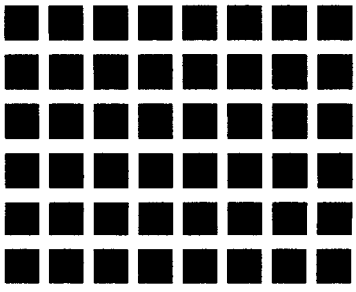


3. Mr. Kelvin wants to arrange 17 tiles into equal rows and columns, but he continues to have an extra tile no matter how he arranges them. Why is Mr. Kelvin having this problem?

4. Jason is arranging his 18 baseball cards into equal rows and columns. Draw arrays to show Jason all the possible ways he could arrange his baseball cards. Is 18 prime or not prime? Explain.

5. In Mrs. Kendall's class the desks are arranged in 6 rows of 6 desks. How many desks are in Mrs. Kendall's class, and is the number prime or not prime? Explain.

6. A rug is covered with 12" × 12" squares as seen below. What is the area of the rug in square feet? Is the area prime?

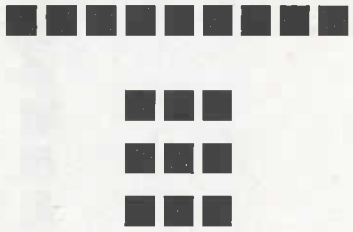


Name _____ Date _____

Find Factors of a Number

CA Standards
KEY NS 1.4, MR 2.4

Can Jules arrange 9 blocks in one or more rows with an equal number of blocks in each row? To find out, decide whether 9 is prime or not prime.

Different Ways to Find Factors of 9	
Way 1 Draw all the ways you can arrange 9 squares in an array. 	**Way 2** Use division Divide by 1. $9 \div 1 = 9$ 1 and 9 are factors of 9. Divide by 3 $9 \div 3 = 3$ 3 is a factor of 9.
Solution: The factors of 9 are 1, 3 and 9. So, 9 is a composite number.	

Draw arrays to find the factors of each number. Write if the number is *prime* or *composite*.

1. 9 _____

2. 16 _____

3. 20 _____

Use division to find the factors of each number. Then write if the number is *prime* or *composite*.

4. 42 _____

5. 45 _____

6. 49 _____

Spiral Review (Grade 4, Chapter 7, Lesson 2) **KEY 4 AF 1.2, 4 AF 1.3**

Simplify.

7. $8 + (4 \times 2)$ _____

8. $25 - (5 + 2)$ _____

9. Calvin buys 7 baseball cards at the Cards Galore store and then gives 1 to his brother. If Calvin already owned 16 baseball cards, how many cards does Calvin now have? _____

Name _____ Date _____

Find Factors of a Number

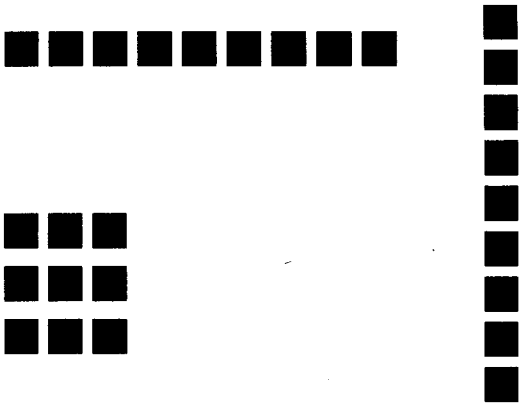
CA Standards
KEY NS 1.4, MR 2.4

Solve problems 1–6.

1. I am a counting number that has more than two different types of factors. Am I a prime number or composite number?

_____

2. Jimmy arranged 9 tiles into three different arrays. What are the factors of the number 9?



_____

3. The sum of my ones and tens digit is 10. My tens digit is greater than my ones digit. I am a prime number. What number am I?

_____

4. Husam has 30 stamps. He wants to arrange them in equal rows. In how many ways can he arrange them?

_____

5. Mr. Jenkin's age is a composite number. The number in the ones place is the product of 2 × 4. The number in the tens place is the difference of half a dozen from one dozen. How old is Mr. Jenkins?

_____

6. The area of a rectangular hallway is 120 square feet. If the length and the width are both composite numbers, what are the possible dimensions of the hallway?

_____

_____

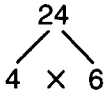
Name _____ Date _____

Prime Factorization

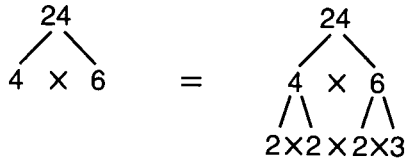
CA Standards
KEY **NS 1.4, MR 2.3**

Write the prime factorization of 24.

Step 1 Write 24 as the product of 2 factors.



Step 2 Write the factors of each composite factor.



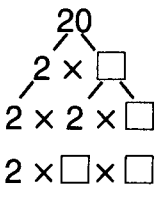
Step 3 Write the prime factors.

$24 = 2 \times 2 \times 2 \times 3$

Solution: The prime factorization of 24 is $2 \times 2 \times 2 \times 3$

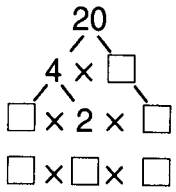
Complete the factor tree. Then write the prime factorization.

1.



_____

2.



_____

Write the prime factorization of each number. If the number is prime, write *prime*.

3. 28 _____

4. 23 _____

5. 30 _____

6. 42 _____

7. 65 _____

8. 56 _____

Spiral Review (Grade 4, Chapter 11, Lesson 4) **4 NS 3.3**

Simplify.

13. 185×32 _____

14. 340×28 _____

15. In the school library, there were 33 science books on each of the 17 shelves located in the science section. How many science books does the library own?

_____

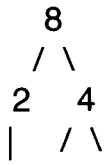
Name _____ Date _____

Prime Factorization

CA Standards
KEY NS 1.4, MR 2.3

Use prime factorization to solve problems 1–6.

1. Complete the factor tree for the number 8.



_____

2. Rita's age is a prime number between 5 and 10. How old is Rita?

_____

3. Which number between 20 and 29 has 2 and 3 in its prime factorization?

_____

4. Which number between 29 and 39 has three different prime factors? What is the prime factorization of this number?

_____

5. Nathan bought a sandwich for $5.25, a soda for $1.50, and a bag of popcorn for $2.25. What is the prime factorization of the total amount he spent for his lunch?

_____

6. The basketball team scored points by making 8 free throws, worth one point each. The team also made 14 baskets, worth 2 points each. How many total points did the team score and what is the prime factorization of the score?

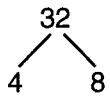
_____

Exponents and Prime Factorization

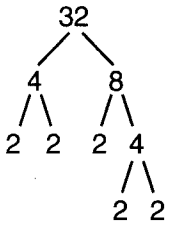
CA Standards KEY NS 1.4, NS 1.3

Use exponents to write the prime factorization of 32.

Step 1 Write 32 as the product of 2 factors.



Step 2 Write the factors of each composite factor.



Step 3 Identify the base or repeated factor. Count how many times the base is repeated to identify the exponent.

base: **2**; repeated 5 times

$2 \times 2 \times 2 \times 2 \times 2 = 32$

Solution: $2^5 = 32$

Write the prime factorization of each number. Use exponents if possible. If the number is prime, write *prime*.

1. 28 _____

2. 23 _____

3. 64 _____

4. 30 _____

5. 50 _____

6. 56 _____

Write each expression using exponents.

7. $2 \times 2 \times 2$ _____

8. $6 \times 6 \times 6 \times 6$ _____

9. $4 \times 4 \times 4$ _____

Spiral Review

(Grade 4, Chapter 11, Lessons 3–4) **NS 3.2**

Add.

10. $\frac{1}{5} + \frac{2}{5} =$ _____

11. $\frac{2}{4} + \frac{2}{4} =$ _____

12. For breakfast, Madison ate $\frac{1}{3}$ of the granola bar in the cabinet. After school, Madison ate another $\frac{1}{3}$ of the bar. How many granola bars did Madison eat?

_____

Exponents and Prime Factorization

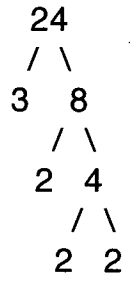
CA Standards
KEY NS 1.4, NS 1.3

Use exponents and prime factorization to solve problems 1–6.

1. Maria bought 4 boxes of muffins with 16 muffins in each box. Write an expression using exponents to find how many muffins she bought.

_____

2. Use different factors to write the prime factorization for 24.



_____

_____

3. Which numbers between 40 and 49 have 2 and 3 in their prime factorization? Use exponents to write the prime factorization of each number.

_____

_____

4. Tony said the prime factorization of 72 is $2^3 \times 3^3$. Explain what Tony's mistake was. Then find the correct answer.

_____

_____

_____

_____

5. Four students bought school supplies. Each student filled their pencil boxes with 5 pencils, 2 erasers, 2 highlighters, and 1 glue stick. Write an expression to find how many supplies were purchased by all four students. Then, use exponents to write the prime factorization of this number.

_____

_____

_____

_____

6. The Davis' backyard measures 40 ft × 90 ft. Find the area of their backyard and show how the area could be written using exponents.

_____

_____

Common Factors and Greatest Common Factors

CA Standards
KEY NS 1.4, MR 2.4

Different Ways to Find the GCF of 15 and 20	
Way 1 Make a list. 15: 1, 3, **5**, 15 20: 1, 2, 4, **5**, 10, 20	**Way 2** Use prime factorization. $15 = 3 \times \mathbf{5}$ $20 = 2^2 \times \mathbf{5}$
Solution: The GCF is 5.	

List the factors of each number. Circle the common factors . Then find the greatest common factor of the numbers.

1. 16 _____

42 _____

_____

2. 24 _____

56 _____

_____

Write the prime factorization using exponents of each number. Then find the greatest common factor (GCF) of the numbers.

3. 24 _____

36 _____

_____

4. 21 _____

56 _____

_____

Spiral Review (Grade 4, Chapter 13, Lesson 1) **4 NS 3.2**

Divide.

5. $172 \div 2 =$ _____

6. $228 \div 4 =$ _____

7. There were 335 packages of candy that were ready to ship to a local candy store. Each box can hold 5 packages of candy. How many packages of candy are in each box?

_____

Common Factors and Greatest Common Factors

CA Standards
KEY NS 1.4, MR 2.4

Use common factors and greatest common factors to solve problems 1–6.

1. Two numbers between 40 and 50 have a greatest common factor of 7. The digits of one number have a sum of 6. The digits of the other number have a sum of 13. What are the two numbers?

_____

2. Gregory has 12 plain bagels and 8 onion bagels that he needs to arrange in rows in a box. The two types of bagels cannot be in the same row. What is the longest possible row of bagels he can make?

_____

3. Ms. Booth is sewing dresses. She has 16 red buttons and 24 blue buttons. Each dress will have the same number of blue and red buttons. Using all the buttons, what is the greatest number of dresses Ms. Booth can sew?

_____

4. In the lunchroom, 36 fifth-graders and 27 fourth-graders are sitting in equal groups. All the students in each group are in the same grade. What is the greatest number of students who could be in each group?

_____

5. Brian's family plans to travel 120 miles before lunch and 222 miles after lunch. They want to stop an equal number of times before lunch and after lunch. How many stops can they take on each part of the trip? How many miles will be between each stop before lunch and how many miles after lunch?

_____

_____

_____

_____

_____

6. All of the fifth grade classes are going on a field trip. There are 108 fifth grade students. There are also 36 parents going on the trip. Each group needs a parent and students. How many students will be in each group with a parent? How many groups will be needed so that all the parents and students are in a group?

_____

_____

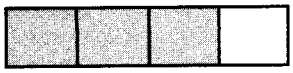
_____

Hands On: Represent Fractions

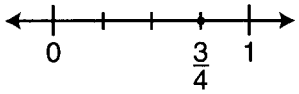
CA Standards
KEY NS 1.5, MR 2.3

Model $\frac{3}{4}$ in three ways.

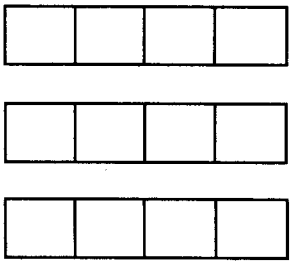
Shaded model



Number line



Division model



$\frac{3}{4} = 3 \div 4$

Draw a shaded model for each fraction.

1. $\frac{2}{3}$ **2.** $\frac{5}{7}$ **3.** $\frac{3}{10}$

Draw a number line and show the position of each fraction.

4. $\frac{2}{5}$ **5.** $\frac{7}{5}$ **6.** $\frac{11}{5}$

Draw a model to show each fraction as a division expression. Write the division expression.

7. $\frac{6}{2}$ **8.** $\frac{5}{3}$

Spiral Review

(Chapter 1, Lesson 4) **NS 1.3, KEY NS 1.4**

Find the prime factorization for each number. Use exponents.

9. 24 _____ **10.** 56 _____ **11.** 48 _____

12. A teacher wants to write 15 problems on the board. How can he write the problems in equal rows?

_____

Hands On: Represent Fractions

CA Standards
KEY NS 1.5, MR 2.3

Solve questions 1–6.

1. Carol rides the school bus on Mondays, Tuesdays, and Fridays. On Wednesdays and Thursdays, her mother drives her to school. Write a fraction and shade the model shown to show how many days a week she rides the bus.

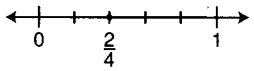
_____

2. Christine has 12 cookies to share with her 6 friends. If she gives each friend an equal number of cookies, how many cookies will each friend get? Write a division sentence to show your answer.

_____

_____

3. Tony drew the number line shown and says it represents the fraction $\frac{2}{4}$. Is Tony correct? Explain why or why not.



_____

_____

_____

4. Andreas baked 2 small loaves of cinnamon raisin bread, each with 10 slices. He used 4 slices from each loaf to make toast. Write a fraction to show how many slices of bread Andreas used. Then make a shaded model.

_____

5. Each day, Paul has 4 hours of free time after school. On Monday and Wednesday, he watches television for one hour. On Tuesday and Thursday, he doesn't watch television. On Friday he watches television for two hours. Write fractions to show how much of Paul's free time each day is used for watching television.

_____

_____

6. The table below shows the amount of time Tiffany spends on different after school activities each week. She spends 8 hours on activities in all. Write a fraction to show how much of her activity time Tiffany spends at her music lessons.

_____

Tiffany's After School Activities		
Day	**Activity**	**Hours**
Monday	music lesson	1
Tuesday	scout meeting	$1\frac{1}{2}$
Wednesday	music lesson	2
Thursday	science club	1
Friday	softball practice	$2\frac{1}{2}$

Fractions and Mixed Numbers

CA Standards
KEY NS 1.5, MR 2.6

Improper fractions and Mixed Numbers

Divide to change an improper fraction to a mixed number.

$$\frac{9}{4} = 4\overline{)9}\ \begin{matrix}2\\ -8\\ \hline 1\end{matrix}$$

So $\frac{9}{4} = 2\frac{1}{4}$

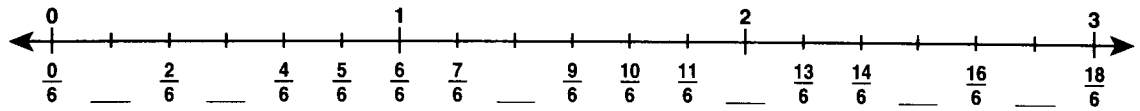
Multiply and add to change a mixed number to an improper fraction.

$$2\frac{1}{4} = \frac{(4 \times 2) + 1}{4} = \frac{9}{4}$$

So $2\frac{1}{4} = \frac{9}{4}$

Study this number line. Write each missing fraction.

1.



_____

Write each improper fraction as a mixed number or a whole number.

2. $\frac{15}{4}$ _____ **3.** $\frac{19}{5}$ _____ **4.** $\frac{21}{7}$ _____ **5.** $\frac{20}{9}$ _____

Write each mixed number as an improper fraction.

6. $1\frac{4}{5}$ _____ **7.** $3\frac{1}{3}$ _____ **8.** $5\frac{5}{6}$ _____ **9.** $2\frac{7}{8}$ _____

Spiral Review

(Chapter 1, Lesson 4) **KEY NS 1.4, MR 2.3**

Find the prime factorization for each number. Use exponents.

10. 72 _____ **11.** 90 _____ **12.** 23 _____

13. Write the prime factorization of 96 in two ways.

_____

Name _____ Date _____

Fractions and Mixed Numbers

CA Standards
KEY NS 1.5, MR 2.6

Solve problems 1–6.

1. Lucinda bought 21 sodas for a class party. The sodas come in 6-packs. Write the number of 6-packs that Lucinda has as a mixed number.

$\frac{21}{6} = 21 \div 6$

_____

2. Ben placed 13 pictures in a photo album. Each page can hold 4 pictures. How many pages can Ben fill in the photo album? Write your answer as an improper fraction.

_____

3. After a party, there were $3\frac{5}{8}$ pizzas left over. Each pizza was cut into 8 slices. Write this number as an improper fraction. How many slices of pizza were left?

_____

4. Roberto has had a newspaper route for $3\frac{3}{4}$ years. Write $3\frac{3}{4}$ years as an improper fraction.

_____

5. Dwayne lent his sister $16\frac{4}{5}$ of a dollar. How much money did Dwayne lend his sister?

_____

6. Do $\frac{38}{5}$ and $8\frac{3}{5}$ represent the same fraction? Explain.

_____

_____

_____

Name _____ Date _____

Equivalent Fractions and Simplest Form

CA Standards
KEY NS 2.3, KEY NS 1.5

To find equivalent fractions

Multiply the numerator and denominator by the same number.

$\frac{3}{8} \overset{\times 3}{=} \frac{9}{24}$

Divide the numerator and denominator by a common factor.

$\frac{12}{18} \overset{\div 2}{=} \frac{6}{9}$

Simplest form: Divide numerator and denominator by greatest common factor (GCF).

$\frac{12}{18} \overset{\div 6}{=} \frac{2}{3}$

Complete.

1. $\frac{5}{8} = \frac{10}{\square}$ _____
2. $\frac{12}{15} = \frac{\square}{5}$ _____
3. $\frac{9}{18} = \frac{1}{\square}$ _____
4. $\frac{2}{3} = \frac{\square}{9}$ _____
5. $\frac{7}{10} = \frac{\square}{100}$ _____
6. $\frac{21}{27} = \frac{7}{\square}$ _____
7. $\frac{6}{30} = \frac{3}{\square}$ _____
8. $\frac{10}{25} = \frac{\square}{50}$ _____

Simplify each fraction.

9. $\frac{22}{4}$ _____
10. $\frac{20}{16}$ _____
11. $\frac{22}{32}$ _____
12. $\frac{45}{36}$ _____
13. $\frac{35}{15}$ _____
14. $\frac{42}{48}$ _____
15. $\frac{30}{9}$ _____
16. $\frac{40}{16}$ _____

Spiral Review

(Chapter 1, Lesson 4) **NS 1.3, KEY NS 1.4**

Find the prime factorization for each number. Use exponents if possible.

17. 64 _____
18. 81 _____
19. 94 _____

20. How could you find the number with the prime factorization of $2^2 \times 3^2$?

_____

Equivalent Fractions and Simplest Form

CA Standards
KEY NS 2.3, KEY NS 1.5

Solve problems 1–6.

1. Harold has been given this list of equivalent fractions: $\frac{6}{14}, \frac{12}{28}, \frac{3}{7}$. He is supposed to choose the fraction that *is* in simplest form. Which one should Harold choose?

_____

2. Mary Lou said that $\frac{16}{20}$ in simplest form is $\frac{8}{10}$. What was her mistake? What is the correct answer?

_____

_____

_____

3. The fifth and sixth grades at Oak Street School are having a science fair. There are 50 students total and $\frac{3}{5}$ of the students are fifth grade students. How many fifth grade students are entered in the science fair?

_____

_____

4. A nurse works 2 out of every 3 days. Write fractions to tell how many days she works out of the following total days: 6, 9, 12, 15

$\frac{2}{3}, \frac{\quad}{6}, \frac{\quad}{9}, \frac{\quad}{12}, \frac{\quad}{15}$

5. $\frac{7}{8}$ of the animals at a shelter are cats. If there are 400 animals at the shelter, how many are cats?

_____

6. Trish walks 15 blocks to school. If she walks $\frac{2}{10}$ of the way by herself, how many blocks does she walk by herself? How many blocks does she walk with a friend.

_____

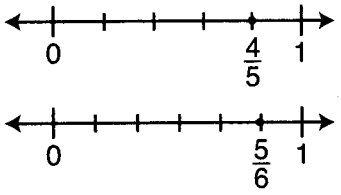
Name _____ Date _____

Compare Fractions

CA Standards
KEY NS 1.5, MR 1.1

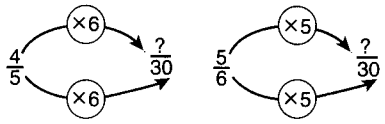
Which is greater, $\frac{4}{5}$, or $\frac{5}{6}$?

Way 1 Use a number line.



Solution: $\frac{4}{5} < \frac{5}{6}$.

Way 2 Find a common denominator.



$4 \times 6 = 24$, so $\frac{4}{5} = \frac{24}{30}$.

$5 \times 5 = 25$, so $\frac{5}{6} = \frac{25}{30}$.

Compare these fractions. Use a number line to help. Write <, >, or = for each ◯.

1. $\frac{3}{10}$ ◯ $\frac{4}{7}$ **2.** $\frac{5}{6}$ ◯ $\frac{6}{7}$ **3.** $\frac{3}{9}$ ◯ $\frac{4}{12}$ **4.** $\frac{4}{5}$ ◯ $\frac{3}{4}$ **5.** $\frac{7}{10}$ ◯ $\frac{6}{9}$

Compare these fractions. Find a common denominator. Write <, >, = for each ◯.

6. $\frac{1}{4}$ ◯ $\frac{5}{20}$ **7.** $\frac{5}{8}$ ◯ $\frac{4}{7}$ **8.** $\frac{6}{10}$ ◯ $\frac{9}{12}$ **9.** $\frac{4}{6}$ ◯ $\frac{3}{4}$ **10.** $\frac{12}{28}$ ◯ $\frac{3}{7}$

11. $\frac{2}{5}$ ◯ $\frac{2}{9}$ **12.** $\frac{11}{25}$ ◯ $\frac{24}{50}$ **13.** $\frac{2}{5}$ ◯ $\frac{5}{12}$ **14.** $\frac{6}{11}$ ◯ $\frac{4}{9}$ **15.** $\frac{3}{15}$ ◯ $\frac{2}{10}$

Spiral Review

(Chapter 1, Lesson 5) **KEY NS 1.4, MR 2.4**

Find the greatest common factor (GCF) of the numbers.

16. 15, 45 _____ **17.** 12, 28 _____ **18.** 30, 40 _____

19. Nancy wants to plant 16 tulip bulbs and 24 daffodil bulbs. She wants to plant rows of tulips and rows of daffodils. She wants the same number of flowers in each row. What are the longest rows of flowers she can plant?

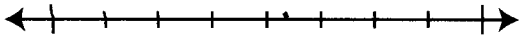
_____

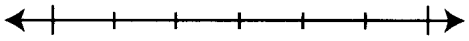
Compare Fractions

CA Standards
KEY NS 1.5, MR 1.1

Solve problems 1–6.

1. Dan and Maisie were practicing their long jumps for a track meet. For their first jump, Dan jumped $\frac{7}{8}$ of a meter and Maisie jumped $\frac{5}{6}$ of a meter. Mark the lengths of their jumps on the number lines. Who jumped further?

Dan 

Maisie 

_____

2. For their second jump, Dan jumped $\frac{8}{10}$ of a meter and Maisie jumped $\frac{6}{7}$ of a meter. Who jumped further? Use equivalent fractions with a common denominator to find out.

$\frac{8}{10} = \frac{\quad}{70}$

$\frac{6}{7} = \frac{\quad}{70}$

_____

3. Sebastian and Ellie each have a bag with the same number of marbles. Sebastian took out $\frac{2}{5}$ of his marbles for a game. Ellie took out $\frac{5}{7}$ of her marbles. Who took out more marbles?

_____

4. Max and Henry were picking tomatoes in their garden. Max picked $\frac{1}{4}$ of the tomatoes and Henry picked $\frac{2}{3}$ of the tomatoes. Who picked the most tomatoes?

_____

5. Victoria, Sean, and Maura were picking apples at a farm. Victoria picked $\frac{3}{5}$ of a basket, Sean picked $\frac{3}{4}$ of a basket, and Maura picked $\frac{1}{5}$ of a basket. Write the names of the people who picked apples in order from the greatest amount picked to the least amount picked.

_____

6. Raul surveyed his class about sports. $\frac{5}{12}$ of the students like baseball, $\frac{7}{10}$ of the students like soccer, and $\frac{7}{8}$ of the students like football. Which sport was liked by the most students? Explain how you know.

_____

_____

_____

Problem Solving: Compare Data Sets

CA Standard
MR 1.2, SDAP 1.3

The table shows the number of peanut and popcorn bags sold at the zoo concession stand in one week. Which snack had a greater fraction sold on Saturday?

Snack	Number of Bags Sold in One Week	Number of Bags Sold on Saturday
peanuts	40	10
popcorn	60	20

10 out of 40 bags of peanuts $\frac{10}{40} = \frac{1}{4}$

20 out of 60 bags of popcorn $\frac{20}{60} = \frac{1}{3}$

Since $\frac{1}{3}$ is greater than $\frac{1}{4}$, the bags of popcorn had a greater fraction sold on Saturday.

Solve. Explain why your answer makes sense.

1. The snack shop sold 50 hamburgers and 75 cheeseburgers last week, 25 of each were sold on Thursday. Which had a greater fraction sold on Thursday?

_____

2. The snack shop sold 40 popsicles on Monday and 25 on Tuesday. On Monday 10 of the popsicles sold were orange and on Tuesday 5 of the popsicles sold were orange. Which day had the greatest fraction of orange popsicles?

_____

Spiral Review

(Chapter 2, Lesson 4) **KEY NS 1.5, MR 1.1**

Compare. Write <, >, or = for each ◯.

3. $\frac{2}{9} \bigcirc \frac{3}{4}$

4. $\frac{4}{12} \bigcirc \frac{2}{6}$

5. Janice asked visitors at the zoo about their favorite animal. One third of the people chose giraffes. Three sixths of the people chose lions. Which animal was chosen by more people?

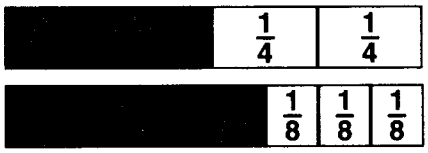
_____

Problem Solving: Compare Data Sets

CA Standard
MR 1.2, SDAP 1.3

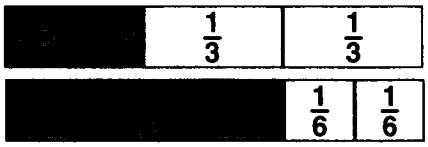
Solve. Explain why your answers make sense.

1. In the Reptile House, Kendra counted 2 out of 4 lizards that had dark green stripes and 5 out of 8 snakes that had dark green stripes. Which reptile had a greater fraction of dark green stripes?



_____

2. One third of the hippos were in the water in the morning and four sixths of the hippos were in the water in the afternoon. At which time was the greatest fraction of the hippos in the water?



_____

3. A male prairie dog ate 8 out of 12 pounds of food and a female prairie dog ate 4 out of 5 pounds of food. Which prairie dog ate the greatest fractional amount of food?

_____

4. Rita spent $25 at the zoo and Sean spent $20. At the gift shop, Rita spent $15 and Sean spent $10. Who spent the greatest fraction of money at the gift shop?

_____

5. Kate has 90 stickers in her sticker collection. Of those stickers 36 are bird stickers, 9 are mammal stickers, and the rest are reptile stickers. How many reptile stickers are in her collection? What fraction of her collection are reptile stickers?

_____

6. The python snake climbed 10 feet up a 12 foot tree and the boa constrictor snake climbed 16 feet up an 18 foot tree. Write the fraction of the tree each snake climbed. Simplify the fractions and compare the distances.

_____

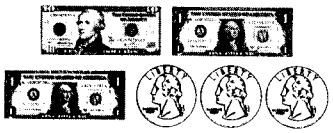
_____

_____

Name _____ Date _____

Hands On: Represent Whole Numbers and Decimals

CA Standard NS 1.1

Decimal Notation	Fraction Notation	Word Form	Model with Bills and Coins	Money Amount
5.6	$5\frac{6}{10}$	five and six tenths		$5.60
12.75	$12\frac{75}{100}$	twelve and seventy-five hundredths		$12.75

Write the word form as a money amount.

1. six and thirty-five hundredths _____

2. seventeen and four tenths _____

3. ten and ninety-nine thousandths _____

Model each number using money. Use the fewest number of bills and coins.

4. 3.05

_____

_____

5. 10.70

_____

_____

6. 16.32

_____

_____

Spiral Review

(Chapter 1, Lesson 4) **KEY NS 1.4**

Write the prime factorization of each number using exponents.

7. 15 _____ **8.** 60 _____ **9.** 28 _____ **10.** 49 _____

11. Ian says that the prime factorization of 12 is 3×4. Is he correct? Explain.

_____

_____

Hands On: Represent Whole Numbers and Decimals

CA Standard
NS 1.1

Solve Problems 1–6.

1. Jessica's lunch cost $4.89. What is the value of the digit in the tenths place?

_____

2. What is the least amount of bills that could be used to make $12? The most?

_____

_____

_____

3. What is the value of the bills and coins using whole numbers and decimals?

_____

4. If Sara gave the cashier ten and thirty-four hundredths, how much money did the cashier receive?

_____

5. Mr. Harris bought a basketball for $18\frac{3}{10}$ dollars. He gave the cashier a $20 bill. How much money did he receive as change?

_____

_____

6. Briana bought a bag of popcorn for two and fifty-five hundredths dollars. Marissa bought a soda for $1\frac{89}{100}$ dollars. Kim spent 2.05 dollars on a box of candy. Who spent the most amount of money? How much did she spend?

_____

Name _____ Date _____

Place Value Through Billions

CA Standards
NS 1.0, NS 1.3

You can write numbers in different ways.
312,501 can be written in:

Standard From	Use digits—312,501
Word Form	Use words–three hundred twelve thousand, five hundred one
Short Word Form	Use digits and words–312 thousand, 501
Expanded Form	Use digits to show the value of each place $300{,}000 + 10{,}000 + 2{,}000 + 500 + 1 = (3 \times 100{,}000) + (1 \times 10{,}000) + (2 \times 1{,}000) + (5 \times 100) + (1 \times 1)$

Write each number in standard form.

1. 415 thousand, 25 _____

2. 800,000 + 4,000 + 60 + 2 _____

3. 100,000 + 900 + 20 + 3 _____

Write each number in expanded form using exponents.

4. 702,946

_____

5. 8,325

_____

6. At times, the earth is two hundred thirty-eight thousand, eight hundred fifty-seven miles from the moon. Write this number is standard form.

_____

Spiral Review

(Chapter 1, Lesson 4) **NS 1.3, KEY NS 1.4**

Write the prime factorization of each number using exponents.

7. 24 _____ **8.** 32 _____ **9.** 45 _____ **10.** 54 _____

11. The area of a square is 7×7 square inches. Write this using an exponent.

_____

Name _____ Date _____

Place Value Through Billions

CA Standards
NS 1.0, NS 1.3

Solve problems 1–6.

1. What is the value of the 5 in the number 285,467?

Thousands				Ones		
hundreds	tens	ones		hundreds	tens	ones
			,			

_____

2. A family bought a new van that costs twenty-two thousand, five hundred thirty-five dollars. How can the number be written in standard form?

_____

3. The table shows the most popular female names. Identify the most popular name and write the number in word form.

Female Names	
Name	**Number of People**
Patricia	153,834
Mary	376,915
Linda	148,386

_____

_____

_____

4. Suppose 100 more females had the name Linda. How many would that be?

_____

5. The toy drive raised $25,460 in toys and the food drive raised $17,350 in food. Write the total amount of money raised in expanded form using exponents.

_____

_____

6. In August, the post office delivers 785,329 pieces of mail to customers. In December, the post office delivers 9,347,089 pieces of mail to customers. Write the difference between the two months in standard form and word form.

_____

_____

_____

_____

Name _____ Date _____

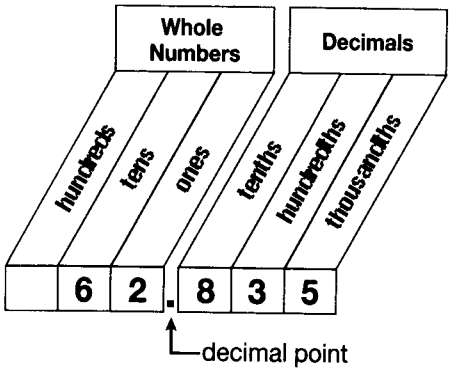
Place Value Through Thousandths

CA Standard NS 1.0

Place Value Chart

62.835

The value of the underlined digit is three hundredths.



Write each decimal in standard form.

1. twelve and fifty-four hundredths _____

2. six and sixteen thousandths _____

3. one hundred sixty-two thousandths _____

4. twenty and five hundredths _____

Write each decimal in word form.

5. 23.6

_____

_____

6. 8.002

_____

_____

7. 10.01

_____

_____

8. 2.112

_____

_____

Spiral Review

(Chapter 3, Lesson 2) **NS 1.0, NS 1.3**

Write each number in standard form.

9. 40,000 + 5,000 + 40 + 2 _____

10. 100,000 + 3,000 + 500 + 70 + 9 _____

11. The water at Yosemite Falls descends 2,425 feet. Write this number in expanded form.

_____

Name _____ Date _____

Place Value Through Thousandths

CA Standard NS 1.0

Solve problems 1–6.

1. A candy bar costs $0.67. How would the cost of the candy bar be read as a decimal in word form?

ones		tenths	hundredths	thousandths
	.			

_____

2. A recipe needs three and two tenths of a cup of milk. Write the amount of milk needed in standard form.

_____

3. Tyrant Flycatchers are among the many songbirds that live in North America. Flycatchers may weigh as little as 4.5 grams. Write this weight in word form.

_____

_____

4. A Sand Martin makes its nest at the end of a 0.75 meter tunnel. Draw and shade a decimal square to represent 0.75.

_____

5. Alex said the decimal 2.340 is read two and thirty four tenths. Marcus said Alex was wrong and the decimal is read two and three hundred forty thousandths. Who is correct? Explain why.

_____

_____

_____

_____

6. Jason ran the 40-yard dash 0.45 seconds faster than Michael. Michael ran the race in 5.75 seconds. Alex ran the race 0.05 seconds slower than Michael. Write each boy's time. Who finished first, second, and third?

_____

_____

_____

_____

_____

Name _____ Date _____

Compare and Order Whole Numbers and Decimals

CA Standards
NS 1.0, MR 2.0

Compare 6,490,232,908 and 6,495,590,028

Step 1 Write the numbers in a vertical list. Line up the numbers by place value.

6,490,232,908
6,495,590,028

Step 2 Start from the left. Compare the digits.

6,490,232,908
6,495,590,028

The millions place is different. 5 is greater than 0.
Solution: 6,495,590,028 > 6,490,232,908

Compare. Write >, <, or = for each ◯.

1. 24,981 ◯ 24,810
2. 734,556 ◯ 734,655
3. 45,813,540 ◯ 48,513,450
4. 2,198,070 ◯ 2,189,007

Order each set of numbers from greatest to least.

5. 9,254; 9,542; 9,515

_____

6. 18,229; 18,209; 18,299

_____

7. A toy company had a profit of $259,304 this year and $254,509 last year. Which profit was greater? Explain.

_____

_____

Spiral Review

(Chapter 2, Lesson 2) **KEY NS 1.5, MR 2.6**

Write each improper fraction as a mixed number or a whole number.

8. $\frac{5}{4}$ _____

9. $\frac{8}{5}$ _____

10. At the bake sale, pies were cut into 8 pieces and sold by the slice. At the end of the sale, there were 11 pieces left. How much pie is left? Write your answer in different ways.

_____

Compare and Order Whole Numbers and Decimals

CA Standards
NS 1.0, MR 2.0

Solve problems 1-6.

1. Tyra ran a race in 8.45 minutes, Heather ran in 8.52 minutes, and Marie ran in 8.50 minutes. Order their times from least to greatest. Who ran the race in the fastest time?

_____

2. The Myers family is going to buy a new house. The first house they look at costs $560,389, and the second house they look at costs $506,392. Compare the prices of the houses using <, >, or =.

_____

3. There are about 4,183,898 people in Michigan that use the Internet. There are about 4,620,671 people in Ohio that use the Internet. Compare the number of people in each state that use the internet using <, >, or =.

_____

4. On Monday night, Jack finished his homework in 30.45 minutes. On Tuesday night, Jack finished his homework in 33.2 minutes. On Wednesday night, Jack finished his homework in 30.4 minutes. Order the times from least to greatest.

_____

5. The amusement park sold 234,560 hot dogs and 219,450 bags of popcorn last year. This year, they sold 244,675 hot dogs and 207,480 bags of popcorn. Compare the total number of hot dogs and bags of popcorn sold each year.

_____

6. Greg's relay team members ran a race in 3.15 minutes, 3.22 minutes, 3.45 minutes, and 3.05 minutes. Ryan's relay team members ran the same race in 3.07 minutes, 3.40 minutes, 3.25 minutes, and 3.29 minutes. What were the total times for each team? Compare to find which team had the fastest time.

_____

_____

_____

_____

_____

Name _____ Date _____

Round Whole Numbers and Decimals

CA Standards
NS 1.1, MR 1.0

Round 0.3̲26 to the place indicated by the underlined digit.

Step 1 Circle the digit to the right of the underlined digit.

0.3(2)6

Step 2 If the circled digit is 5 or greater, increase the rounding place digit by 1. If the digit is less than 5, do not change the rounding place digit. Drop all remaining digits after rounding.

Solution: 0.3̲26 rounds to 0.3.

Round to the place indicated by the underlined digit.

1. 7.1̲56 _____
2. 34.2̲77 _____
3. 0.9̲81 _____
4. 10.9̲1 _____
5. 17.1̲56 _____
6. 0.2̲88 _____
7. 46̲2,969 _____
8. 1,9̲06,230,234 _____
9. 2̲39,796 _____
10. 6.0̲3 _____
11. 28,3̲34 _____
12. 4̲8.290 _____

Spiral Review (Chapter 2, Lesson 3) **KEY NS 2.3, KEY NS 1.5**

Write each fraction in simplest form.

13. $\frac{4}{6}$ _____
14. $\frac{2}{8}$ _____

15. 16 out of 20 students are riding the bus. Write the fraction of students that are riding the bus in simplest form.

_____

Round Whole Numbers and Decimals

CA Standards
NS 1.1, MR 1.0

Solve problems 1–6.

1. A house costs $195,500. Round the amount to the nearest hundred thousand.

$\underline{1}95,500$

_____

2. Karen rounded $14.58 to $14.00. Explain why her answer is incorrect.

_____

_____

_____

_____

3. Use data from the table to solve Problems 3–4.

2006 Middlesex County High Schools Top Five Hitters

Player	Team	Average
Javier Ordonez	Tigers	0.320
Junior Ramirez	Griffons	0.349
Kazuya Suzuki	Eagles	0.321
Mark Sweeney	Mustangs	0.340
Tony Williams	Panthers	0.333

Round Javier Ordonez's average to the nearest tenth.

_____

4. Round all of the averages to the nearest hundredth. Who had the best batting average?

_____

_____

_____

5. Lacey needs to buy two presents for her sister. The first present costs $29.57 and the second present costs $5.19. About how much did Lacey spend on both *presents*?

_____

6. A train traveled 32,190 miles round trip last week and 32,830 miles this week. If you round each distance to the nearest ten thousand, can you determine which week the train traveled the farthest?

_____

Name _____ Date _____

Problem Solving: Estimate or Exact?

CA Standards MR 2.5, NS 1.1

Solve. Explain why you used an estimate or an exact answer.

Example 1: Need an exact answer
How many more people live in San Francisco compared to Long Beach?
Find the difference.

$$\begin{array}{r} 776{,}733 \\ -\ 461{,}522 \\ \hline 315{,}211 \text{ people} \end{array}$$

Example 2: Need an estimate
About how many more people live in San Diego compared to San Jose?
Use rounding rules.

$$\begin{array}{rr} 1{,}223{,}400 & 1{,}200{,}000 \\ 894{,}943 & -\ 900{,}000 \\ & 300{,}000 \text{ people} \end{array}$$

Population of the 5 Largest Cities in California (2000)

City	Population
Los Angeles	3,694,820
San Diego	1,223,400
San Jose	894,943
San Francisco	776,733
Long Beach	461,522

Use the table below to solve.

1. What is the difference in voter turnout from 2000 to 2002?

_____

_____

2. About how many more people voted in 2004 than in 1996?

_____

_____

National Voter Turnout in Federal Elections

Year	Voter Turnout
2004	122,294,978
2002	79,830,119
2000	105,586,274
1998	73,117,022
1996	96,456,345

Spiral Review

(Chapter 2, Lesson 3) **KEY NS 2.3**

Write each fraction in simplest form.

3. $\frac{3}{30}$ _____

4. $\frac{2}{8}$ _____

5. Jenny says that $\frac{5}{10}$ of her stuffed animals are bears. What is $\frac{5}{10}$ in simplest form? _____

Problem Solving: Estimate or Exact?

CA Standards
MR 2.5, NS 1.1

Use the tables to solve. Explain why you used an estimate or an exact answer.

Mountains in the US higher than 14,000 feet

Mountain	Height
Mt. McKinley	20,320
Mt. St. Elias	18,008
Mt. Foraker	17,400
Mt. Bona	16,500
Mt. Blackburn	16,390

Public Higher Education Costs, 2000–2005

Year	Cost
2000–2001	$7,586
2001–2002	$8,022
2002–2003	$8,502
2003–2004	$9,249
2004–2005	$9,877

For 1–4, use the Mountains in the US Higher Than 14,000 Feet table to solve.

1. How much higher is Mt. St. Elias than Mt. Bona?

_____

18,008 − 16,500 = _____

2. Which two mountain peaks have a difference of about 2,000 ft? Round your answer to the nearest thousand.

_____

_____

_____

3. How much shorter is Mt. Blackburn than Mt. McKinley?

_____

_____

_____

4. If you stacked Mt. Foraker, Mt. Bona, and Mt. Blackburn on top of each other, about how tall would they be? Round your answer to the nearest thousand.

_____

For 5–6, use the Public Higher Education Costs table.

5. Jason started college during the 2001-2002 school year and graduated during the 2004–2005 school year. How much money did Jason's education cost?

_____

_____

_____

6. A private college education costs about twice as much as a public college education. About how much would Jason have spent in 2001–2002 if he'd gone to a private college?

_____

_____

Name _____ Date _____

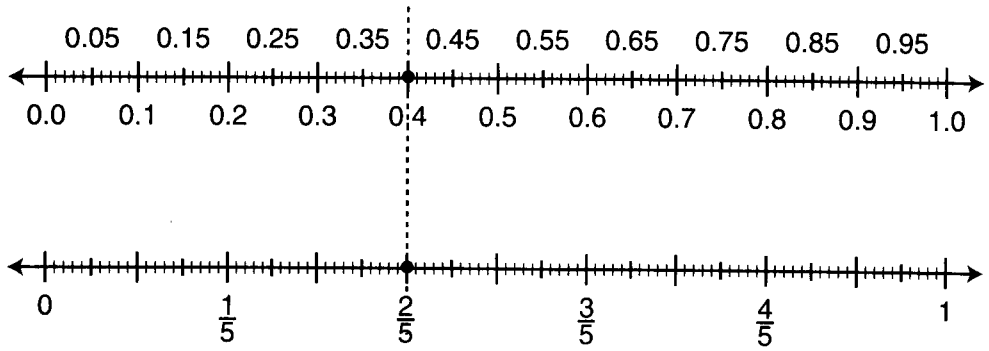
Hands On: Fractions and Decimals

CA Standards KEY NS 1.5, MR 2.3

Use number lines to find the decimal equivalent of a fraction.

What is the decimal equivalent of $\frac{2}{5}$?

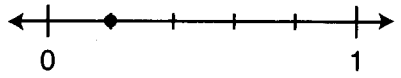
Step 1 Use the decimal number line and the number line marked in fifths.



Step 2 At the point of $\frac{2}{5}$, place a ruler vertically so it crosses the decimal number line and identify 0.4 as the decimal the line goes through.

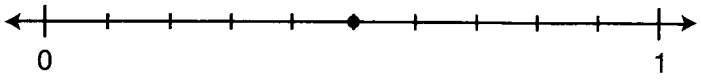
Use the number line. Write each fraction as a decimal.

1. $\frac{1}{5}$



_____

2. $\frac{5}{10}$



_____

Spiral Review (Chapter 3, Lesson 2) **NS 1.0, NS 1.3**

Identify the place value of the underlined number.

3. 12,<u>3</u>47 _____

4. <u>2</u>63,530 _____

5. The paper Sue wrote for English class has a total of <u>2</u>34,879 letters, numbers and other characters. Identify the place value of the underlined number.

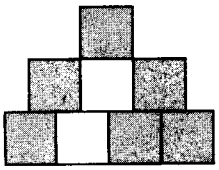
_____

Hands On: Fractions and Decimals

CA Standards KEY NS 1.5, MR 2.3

Solve.

1. Brody built a tower out of blocks. Write a fraction and decimal that represents the number of white blocks.



_____ = _____
Fraction Decimal

2. The fraction $\frac{6}{10}$ is not written in simplest form. Write the fraction in simplest form and the equivalent decimal.

_____ = _____
Fraction Decimal

3. Miles started with 10 brownies each day to sell at a bake sale. He sold $\frac{3}{4}$ of the brownies on Saturday and 0.8 of the brownies on Sunday. On which day did he sell more brownies?

_____

4. A recipe called for $\frac{1}{4}$ cup sugar and 0.2 cup of butter. Did the recipe call for more sugar or butter?

_____

5. Maria, Kelsey, and Rita all sold the same number of boxes of cookies. Of the boxes of cookies Maria sold, $\frac{3}{5}$ were chocolate chip. Of the boxes of cookies Rita sold, 0.5 were chocolate chip. Kelsey sold $\frac{2}{10}$ boxes of chocolate chip cookies. Who sold the most chocolate chip cookies? Explain.

_____

_____

_____

_____

_____

6. Karen baked 8 batches of cookies. $\frac{1}{2}$ of the batches were sugar cookies. 0.25 of the batches were chocolate chip. The other batches were oatmeal. How many batches of cookies were oatmeal?

_____

_____

_____

Equivalent Fractions and Decimals

CA Standard MR 2.3

Write fractions and mixed numbers as decimals.

HINT: Make the denominator a multiple of ten.

Fraction: $\frac{4}{5} \overset{\times 2}{=} \frac{8}{10} = 0.8$

Mixed Number: $2\frac{3}{4} \overset{\times 25}{=} 2\frac{75}{100} = 2.75$

Write a decimal as a fraction or mixed number in simplest form.

Decimal less than 1 (fraction):

$$0.4 = \frac{4}{10} \overset{\div 2}{=} \frac{2}{5}$$

Decimal greater than 1 (mixed number):

$$1.6 = 1\frac{6}{10} \overset{\div 2}{=} 1\frac{3}{5}$$

Write each decimal as a fraction or mixed number in simplest form.

1. 0.75 **2.** 1.5 **3.** 2.25 **4.** 1.6

Write each fraction or mixed number as a decimal.

5. $\frac{3}{5}$ **6.** $\frac{2}{8}$ **7.** $\frac{14}{20}$ **8.** $1\frac{3}{10}$

9. $1\frac{4}{8}$ **10.** $2\frac{2}{20}$ **11.** $1\frac{4}{5}$ **12.** $3\frac{1}{4}$

Spiral Review

(Chapter 2, Lesson 2) **KEY NS 1.5, MR 2.6**

Write each improper fraction as a mixed number or a whole number.

13. $\frac{7}{5}$ **14.** $\frac{12}{10}$

15. There are 48 apple slices in the fruit salad that Ben's dad prepared for dinner. The slices were cut from apples that were sliced into 7 pieces each. That means that there were $\frac{48}{7}$ apples used. How many apples were used in the salad? Express the answer as a mixed number.

Equivalent Fractions and Decimals

CA Standard MR 2.3

Solve.

1. Mason lives 4.2 miles from school. He says that is equivalent to $4\frac{1}{5}$ miles. Explain whether Mason is correct.

_____

_____

_____

2. The playground is $2\frac{3}{4}$ miles from Jason's house. The library is 2.25 miles from his house. Is the playground or library closer to Jason's house?

_____

_____

3. Complete the chart below by finding the equivalent distances. Record the mixed numbers in simplest form.

Highest Score			
Distance	**Fraction**	=	**Decimal**
Sack Race		=	9.25 yards
Ballon Toss	$8\frac{3}{4}$ feet	=	
Egg Race		=	5.4 feet

4. Drake's relay team finished the race in $5\frac{3}{4}$ minutes. Kevin's relay team finished in 5.4 minutes. Whose team ran the relay in a faster time?

_____

5. Evan ran 2.5 miles on Saturday and 2.25 miles on Sunday. Alex ran $2\frac{2}{5}$ miles on Saturday and $2\frac{1}{2}$ miles on Sunday. Who ran a total of more miles?

_____

_____

_____

6. Wes and his father rode their bikes three weekends in a row. They rode $5\frac{1}{4}$ miles during the first weekend, $5\frac{1}{2}$ miles during the second weekend, and 5.75 miles during the third weekend. What is the mean number of miles that Wes and his father rode?

_____

Compare and Order Fractions and Decimals

CA Standard
KEY NS 1.5

Different Ways to Compare 2.4, $2\frac{1}{4}$, and 2.04

Way 1: Write the mixed number as a decimal.

$2\frac{1}{4} = 2.25$

Compare the decimals.

$2.04 < 2.25 < 2.4$

Way 2: Write the decimals as mixed numbers.

$2.4 = 2\frac{4}{10}$ $\quad 2.04 = 2\frac{4}{100}$

Rename with a common denominator.

$2\frac{4}{10} = 2\frac{40}{100}$ $\quad 2\frac{1}{4} = 2\frac{25}{100}$

Compare the mixed numbers.

$2\frac{4}{100} < 2\frac{25}{100} < 2\frac{40}{100}$

Compare. Write >, <, or = for each ◯.

1. $0.6 \bigcirc \frac{1}{5}$
2. $9.08 \bigcirc 9\frac{1}{5}$
3. $\frac{4}{5} \bigcirc 0.9$
4. $1\frac{7}{10} \bigcirc 1.07$
5. $2.5 \bigcirc 2\frac{1}{2}$
6. $1\frac{13}{20} \bigcirc 1.8$
7. $3.6 \bigcirc 3\frac{6}{100}$
8. $\frac{9}{25} \bigcirc 0.4$

Order each set of numbers from least to greatest.

9. $\frac{1}{2}$, $\frac{6}{10}$, 0.2, 0.4 _____

10. $\frac{3}{10}$, 0.75, 1.2, $1\frac{1}{10}$ _____

Spiral Review

(Chapter 3, Lesson 2) **NS 1.0**

Write the numbers in standard form.

11. four hundred thirty two thousandths _____

12. twenty five thousandths _____

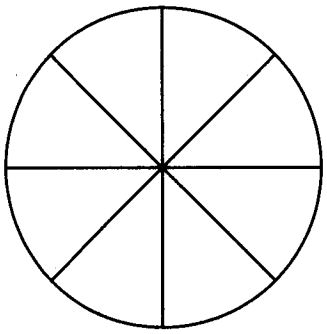
13. Cathy's mother teaches 5th grade math and, as a joke, wrote her friend a note saying, "Congratulations! You're $(4 \times 10^5) + (2 \times 10^4) + (8 \times 10^3) + (5 \times 10^2)$ hours old." How many hours old is the friend in standard form? _____

Compare and Order Fractions and Decimals

CA Standard
KEY NS 1.5

Sovle.

1. Jim ate $\frac{3}{8}$ of a pie and Jung ate 0.25 of the same pie. Shade the amount that Jim and Jung ate. Who ate more pie?

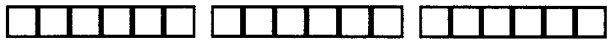


_____

2. Carrie sold $2\frac{3}{5}$ boxes of candy bars. Mollie sold 2.4 boxes of candy bars. Shade the amount that each sold below. Who sold more candy bars?

Carrie

Mollie



_____

3. Marco is 5.5 feet tall, Steve is $5\frac{5}{8}$ feet tall, and Susan is $5\frac{2}{5}$ feet tall. Order the students from shortest to tallest.

_____

4. The students in Mrs. Gumb's class are selling candy bars for a class trip. Each student received the same number to sell. Tina has sold $\frac{2}{3}$ of her candy bars and Chelsea has sold 0.7 of hers. Who has sold more candy bars?

_____

_____

5. Louis caught four fish on his fishing trip. The fish measured $7\frac{1}{4}$ inches, 6.5 inches, $7\frac{1}{2}$ inches, and 7.75 inches. What was the average length of the fish he caught?

_____

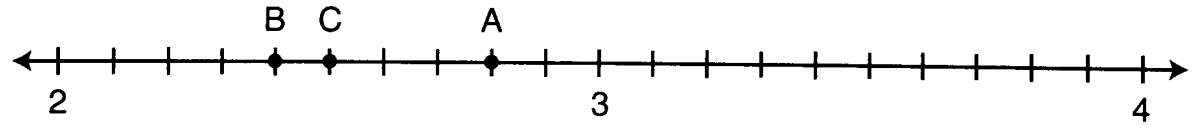
6. The aquarium sells fish tanks that hold $12\frac{3}{4}$ gallons, 10.5 gallons, and $8\frac{1}{4}$ gallons of water. What is the average number of gallons that the fish tanks hold?

_____

Mental Math: Fraction and Decimal Equivalents

CA Standards
KEY NS 1.5, MR 3.3

Visualizing a number line can help to compare and order decimals and fractions.

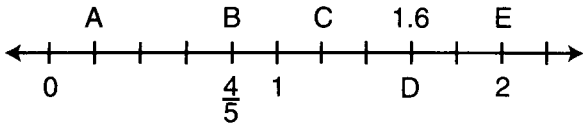


Plot the points on the number line.	Compare the fractions using >, < or =.	Order the fractions from least to greatest.
A $2\frac{8}{10}$ **B** $2\frac{2}{5}$ **C** $2\frac{1}{2}$	$2\frac{8}{10} > 2\frac{1}{2} > 2\frac{2}{5}$	$2\frac{2}{5}, 2\frac{1}{2}, 2\frac{8}{10}$

Dan has to compare fractional and decimal numbers that are in different forms. Compare each pair of numbers and write >, <, or = for each ◯. Use mental math.

1. $\frac{2}{5}$ ◯ 0.3 **2.** $1\frac{1}{4}$ ◯ 1.3 **3.** $4\frac{4}{8}$ ◯ 4.75 **4.** $4\frac{1}{5}$ ◯ 4.25

Use the number line to solve.



5. Write the fraction and the decimal represented by point *A*.

6. Write the decimal represented by point B.

Spiral Review

(Chapter 3, Lesson 4) **NS 1.0, MR 2.0**

Compare. Write >, <, or = for each ◯.

7. 38 ◯ 37.613 **8.** 7.319 ◯ 7.367

9. Beth's parents measured her height every six months and marked it in pencil on the wall in her bedroom closet. The last 3 measurements are 58.35 inches, $58\frac{1}{4}$ inches and $58\frac{9}{20}$ inches. Order the numbers from least to greatest.

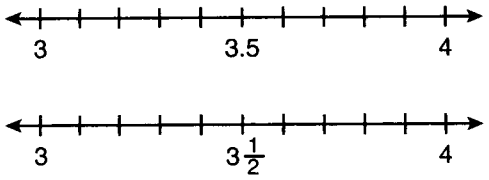
Name _____ Date _____

Mental Math: Fraction and Decimal Equivalents

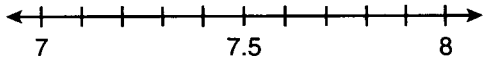
CA Standards
KEY NS 1.5, MR 3.3

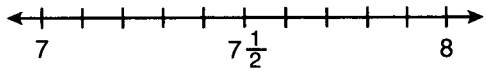
Sovle problems 1–6.

1. Samantha's plant grew $3\frac{1}{4}$ inches during the month of April and 3.75 inches during the month of May. Which month did the plant grow more?



2. Nathan grew two cucumbers. One measured $7\frac{3}{4}$ inches and the other cucumber measured 7.6 inches. What is the greater measurement?





3. Jess bought $1\frac{1}{4}$ pounds of potatoes and 1.3 pounds of onions. Did Jess buy more potatoes or onions?

4. Anita's garden measured 6.4 feet long and $6\frac{2}{5}$ feet wide. What was the shape of her garden? Explain.

5. Frank bought $4\frac{3}{10}$ pounds of apples and 3.5 pounds of tomatoes at a Farmer's Market. His brother bought 2.75 pounds of strawberries and one $5\frac{2}{5}$ pound squash. Who bought more at the Farmer's Market? How many pounds more?

6. The fence around Cameron's yard measures 10.2 feet in length and $5\frac{3}{5}$ feet in width. What is the perimeter of the fence? Draw a picture of the fence and label the length and width. Explain how you found the answer.

Name _____ Date _____

Hands On: Algebra and Patterns

CA Standards
KEY AF 1.2, MR 1.1

Jonas made the pattern below using blocks. If the same pattern continues, how many squares would be in Figure 5?

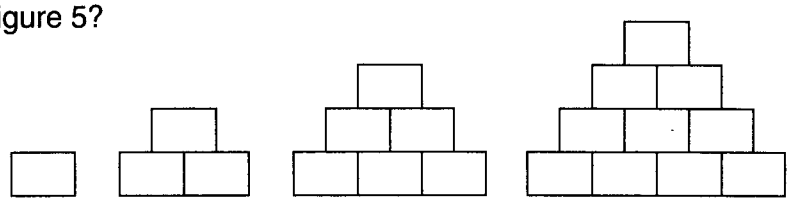


Figure 1 Figure 2 Figure 3 Figure 4

Step 1 Look at how the figure changes each time. Make a table.

Input	**Figure Number**	1	2	3	4	5
Output	**Number of Blocks**	1	3	6	10	15

Step 2 Draw and label Figure 5.

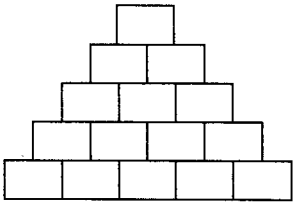


Figure 5

Solution: There will be 15 blocks in Figure 5.

Draw the next figure in the pattern. Describe the rule. Then complete the table.

1. **Figure 1** **Figure 2** **Figure 3**

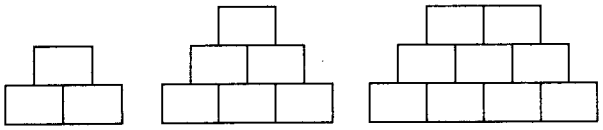


Figure Number	1	2	3	4
Number of Rectangles	3	6	9	

Rule: _____

2. **Figure 1**

Figure 2

Figure 3

Figure Number	1	2	3	4
Number of Rectangles	8	6	4	

Rule: _____

Spiral Review

(Chapter 2, Lesson 3) **KEY NS 2.3**

Write each fraction in simplest form.

3. $\frac{6}{8}$ _____

4. $\frac{12}{16}$ _____

5. Erin says that $\frac{10}{15}$ of her sweatshirts have cats on them. What is $\frac{10}{15}$ in simplest form? _____

Hands On: Algebra and Patterns

CA Standards
KEY AF 1.2, MR 1.1

Solve problems 1–6.

1. In a football game, the home team scored 1 touchdown and one extra point during every quarter. How many points did the home team have at the end of the game?

_____

2. During halftime at the football game, the cheerleaders built pyramids. Complete the function table to show how many cheerleaders it took to build 5 pyramids.

Number of pyramids	1	2	3	4	5
Number of cheerleaders	3				

_____

_____

3. The coach of the soccer team brought 18 oranges to each game for the players to eat at halftime. Complete the function table to show how many oranges he bought by the end of the season. Then describe the rule.

Rule: _____

Game	1	2	3	4
Number of oranges	18			

4. The number of people attending the school basketball games increased by 15 every game. Complete the table to show the number of people who attended the 5th basketball game. Then describe the rule.

Rule: _____

Game	1	2	3	4	5
Number of people	15				

5. The members of the cross-country team run 5.75 miles every day. Create a function table to show how many miles the members of the cross-country team run in 1 day, 3 days, 7 days, and 10 days. Then describe the rule.

Rule: _____

Days	1	3	7	10
Miles				

6. A student ticket to the football game costs $6.50. Make a function table to show the cost of the tickets if a group buys 3, 5, 7, and 9 student tickets. Then describe the rule.

Rule: _____

Tickets	3	5	7	9
Cost				

Simplify Expressions

CA Standards
KEY AF 1.2, NS 1.3

Simplify this expression using the order of operations.

$2^3 + 3 \times 4$

Step 1	**Step 2**	**Step 3**
Simplify the numbers with **exponents.**	**Multiply** from left to right.	**Add** from left to right.
$2^3 + 3 \times 4$ $2 \times 2 \times 2 = 8$	$8 + 3 \times 4$ $8 + 12$	$8 + 12$ 20

Solution: $2^3 + 3 \times 4 = 20$

Simplify.

1. $5 \times (18 - 9)$ ____

2. $(21 - 14) \times (3 + 4)$ ____

3. $(27 - 3^2) - 12$ ____

4. $8 + (52 - 44) - 6$ ____

5. $1 \times (6 + 8) - 2$ ____

6. $(35 - 15) \times (2 + 1)$ ____

7. $(18 - 2^2) + 6$ ____

8. $12 + (13 - 4) + 5$ ____

Spiral Review

(Chapter 2, Lesson 3) **KEY NS 2.3**

Write each fraction in simplest form.

9. $\frac{6}{10}$ ____

10. $\frac{15}{20}$ ____

11. Mrs. Jones surveyed the students in her science class about their favorite food. Out of 30 students, 12 voted for Italian food. What is $\frac{12}{30}$ in simplest form? ____

Name _____ Date _____

Simplify Expressions

CA Standards KEY AF 1.2, NS 1.3

Simplify.

1. Which operation should be performed first? Use the order of operations to simplify this expression.

$$3 \times (5 + 4)$$

2. Cole earned $5 an hour for cleaning his room. It took him two hours to clean his room. If his mother paid him for cleaning his room, and gave him an additional $8, how much money does Cole have now?

$$(\$5 \times 2) + \$8$$

3. During basketball practice, one student made 4 baskets. Five other students made 3 baskets each. Another student made 5 baskets. The coach calculated the total number of points made by all of the students. Write an equation to find how many baskets were made in all.

4. Gregory earned $8 each of the 3 times he mowed his neighbors grass, $10 for walking their dog, and $3 each time he watered their plants for 3 days in a row. How much money did Gregory make in all? Write an equation and solve.

5. Mr. Jenkins incorrectly solved this expression. Tell what he did wrong and give the correct answer. Show your work.

$$8 + 2^2 \times 3 - 10$$
$$8 + 4 = 12$$
$$12 \times 3 = 36$$
$$36 - 10 = 26$$

6. Bradley found the value of this expression. Is his answer correct? If not, tell what he did wrong and give the correct answer.

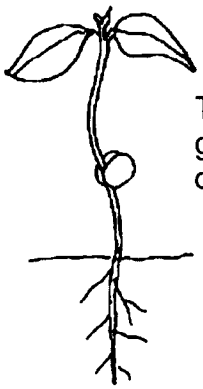
$$36 - 3^2 \times (2 + 1)$$
$$36 - 9 = 25$$
$$25 \times 3 = 75$$

Name _____ Date _____

Write and Evaluate Expressions

CA Standards KEY AF 1.2, AF 1.0

Derek performed an experiment for his science fair project by drawing the conclusion that for every 1 tablespoon of fertilizer used, the bean plant grew an additional 5 inches. How many inches did the plant grow that was given 6 tablespoons of fertilizer?



This plant was given **6 tbsp.** of fertilizer.

The bean plant grew **30 inches.**

Step 1	Let f stand for the number of tablespoons of fertilizer.	Choose any letter or symbol for the variable.
Step 2	Then express the number of inches as $5 \times f$ or $5 \cdot f$ or $5f$	You read all these expressions as "5 times f".
Step 3	$5f$ 5×6 30	Simplify the expression.

Solution: The bean plant that was given 6 tablespoons of fertilizer grew 30 inches.

Write an algebraic expression for each word phrase.
Use the variable *n* to represent the unknown number.

1. Four times a number plus eight. _____

2. Five less than a number squared. _____

3. Nine times a number divided by three. _____

4. Eight times a number plus seven _____

Evaluate each expression when $x = 7$ and $d = 9$.

5. $2x + 14$ _____

6. $(5 \times 3) + 5x$ _____

7. $d^2 + 11$ _____

8. $7x - 12$ _____

Spiral Review (Chapter 3, Lesson 5) NS 1.1

Round each number to the nearest hundred.

9. 3,678 _____

10. 308,425 _____

11. 47,830.45 _____

12. 104,370.30 _____

Name _____ Date _____

Write and Evaluate Expressions

CA Standards
KEY AF 1.2, AF 1.0

Solve problems 1–6.

1. Chad did his homework in 10 minutes on Monday. On Tuesday it took him twice as long to do his homework as it did on Monday. Write an expression to show how long it took Chad to do his homework both nights.

2. Frank is 3 years less than twice as old as Brad. If Brad is 5, write an expression to show Frank's age.

3. Amanda checked out 7 fiction books from the library. She also checked out three times as many non-fiction books. The next day, Amanda returned 5 books to the library. How many books does she have now? Write an expression to explain your answer.

4. Nicole jumped rope for 5 minutes on Monday. On Tuesday she jumped twice as long as she did on Monday. On Wednesday, she jumped 8 minutes longer than she did on Monday. How many minutes did Nicole spend jumping rope all together? Write an expression to explain your answer.

5. Heather is twice as old as Natalie. Abby is 3 years younger than Heather. If Natalie is x years old, how old is Abby? Find Abby's age and Heather's age when $x = 9$. Write expressions to solve. Write the girls' names in order from the oldest to the youngest.

6. Travis wrote the following expression to show that his sister's age is 5 years less than twice his age. Explain what he did wrong. Give the correct expression.

Let a stand for my age.

My sister's age: $a \div 2 - 5$

Name _____ Date _____

Write and Solve Equations

CA Standards
KEY AF 1.2, MR 1.1

Use inverse operations to solve equations.

Example 1:	**Example 2:**
Subtraction is the inverse of addition.	**Division is the inverse of multiplication.**
$x + 12 = 25$	$4x = 36$
$x + 12 - 12 = 25 - 12$	$4x \div 4 = 36 \div 4$
$x + 0 = 13$	$1 \times x = 9$
Solution: $x = 13$	**Solution:** $x = 9$

Solve and check.

1. $r - 45 = 17$ _____

2. $44 = 4f$ _____

3. $k + 16 = 30$ _____

4. $a - 12 = 8$ _____

5. $7y = 42$ _____

6. $c - 30 = 27$ _____

7. $81 = 9v$ _____

8. $b + 15 = 75$ _____

Choose the equation that represents the situation. Then use the equation to solve the problem.

9. Jenni and her friend were having lunch. The bill came to $17. She gave the waiter $21 including tip. How much was the tip?

A $\$17 + n = \$21$ **B** $\$21 + n = \$17$

_____

Spiral Review (Chapter 4, Lesson 1) **KEY** NS 1.5

Write each decimal as a fraction. Simplify your answers.

10. 0.25 _____

11. 0.6 _____

12. Rebecca's scout troop went camping. Some of the scouts went canoeing and 0.4 of the scouts went horseback riding. Write 0.4 as a fraction. Simplify.

_____

Write and Solve Equations

CA Standards
KEY AF 1.2, MR 1.1

Solve problems 1–6.

1. Sam spent $14 at the concession stand. His drink cost $3. How much did he spend on other items? Choose the equation that represents the situation. Then use the equation to solve the problem.

A $\$14 - \$3 = \$11$

B $\$14 + \$3 = \$17$

2. Karen skated around the ice skating rink a total of 10 times. Every two laps took her 1 minute. How many minutes did she skate? Choose the equation that represents the situation. Then use the equation to solve the problem.

A $10 + 2 = 12$ minutes

B $10 \div 2 = 5$ minutes

3. Rosie had $20 before she went to the movies. After the movies she had $7. How much money did she spend at the movies? Write an equation and solve.

4. Lianna treated 3 of her friends and herself to ice cream sundaes. The bill for the sundaes was $16. Each sundae cost the same amount. How much did Lianna pay for each sundae? Write an equation and solve.

5. Explain how to find the value of y in the expressions below.

$5 + y \times 6 = 29$

$2y + 12 = 20$

6. Jess says the square of the sum of 17 plus some number will equal his mother's age squared. If Jess' mother's age squared is 2209, what number must be used to make the equation true?

$$(17 + a)^2 = 2{,}209$$

Variables and Functions

CA Standards
KEY AF 1.5, AF 1.0

Joe made the pattern below out of counters. Look at the pattern. Write the rule. How many squares will there be in Figure 8?

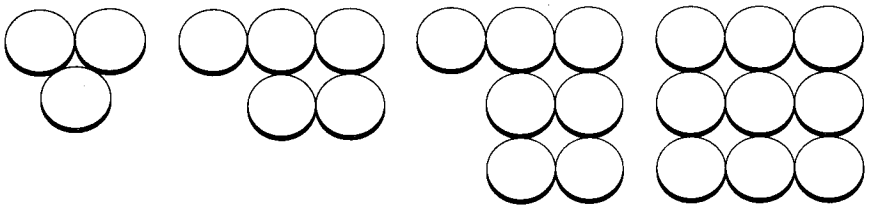


Figure 1 **Figure 2** **Figure 3** **Figure 4**

Way 1 Use words.

The number of counters is 2 times the figure number plus one.

Way 2 Use one variable.

x is the input or the figure number.
$2x + 1$ is the output or the number of counters.

Rule: Output $= 2x + 1$

Way 3 Use an equation with two variables.

$y = 2x + 1$
$y = (2 \times 8) + 1$
$y = 16 + 1$
$y = 17$

Solution: Figure 8 will have $(2 \times 8) + 1$, or 17 squares.

Use the function table. Read the equation. Then, find the value of *y* for the given value of *x*.

1. $y = 14 - x$

x	0	1	2	3
y	____	____	____	____

2. $y = 7x$

x	0	1	2	3
y	____	____	____	____

Spiral Review

(Chapter 4, Lesson 3) **KEY NS 1.5**

Compare. Write >, <, or = for each ◯.

3. $\frac{1}{4}$ ◯ 0.5

4. $\frac{2}{3}$ ◯ 0.25

5. Hilda has 1.05 bags of candy. Is 1.05 greater than, less than, or equal to $\frac{1}{2}$? _____

Variables and Functions

CA Standards
KEY AF 1.5, AF 1.0

Solve problems 1–6.

1. Tyler collects coins. If each hour at the coin show he buys 5 new coins, how many coins will he have after 4 hours? Complete and use the function table to find the answer.

x	1	2	3	4
y	5	10		

2. Jessica ran 4 miles each day to train for her upcoming track meet. Complete and use the function table to find the number of miles she ran after 7 days.

x	1	2	3	4	5	6	7
y	4						

3. Tracy's pay is described by the rule $y = 8x$, where y represents the amount of pay in dollars and x represents the number of hours she worked. How much money does Tracey earn if she works 6 hours? Complete and use the function table to find the answer.

Number of hours worked	1	2	4	6
Pay per hour				

4. Use the function table from Problem 3. If Tracy earned $72, how many hours did she work? Write an equation to prove your answer.

5. A family traveled 175 miles each day of their 5 day vacation. How many more days would they need to travel to have driven over 2,000 miles? How many days would they have to travel in all?

6. Travis earned $214 for each week of work. At the end of the year, Travis's total income was $10,700. How many weeks out of the year, did Travis work? Write an equation to show your answer.

Problem Solving: Write an Expression

CA Standards
KEY AF 1.2, MR 2.4

Write an expression to solve each problem. Simplify.

Fragrant Flowers sells fresh flowers wrapped in bouquets. Each bouquet is $7. If a customer buys 3 bouquets, the owner of the store will discount the total price by $5. How much does it cost to buy 3 bouquets?

Step 1 What operation will I use to solve this problem?

- "Buys 3 bouquets" indicates multiplication
- "Discount the total price" indicates subtraction

Step 2 What will my variable represent?

p for price

Step 3 Should I use parentheses in my expression?

Hint: You can write the expression 2 ways.

- $(3 \times p) - 5$
- $3p - 5$

Solution:

$(3 \times p) - 5$
$(3 \times \$7) - 5$
$\$21 - 5$
$\$16$

Write an expression to solve each problem. Simplify.

1. Yu Min made brownies for school. After cutting the brownies into equal pieces, Yu Min gave 4 to her brother, and she split the remaining brownies with her mathematics teacher and her art teacher. If she had 24 brownies, how many brownies did each of the two teachers receive?

_____

2. The force of gravity on the moon is $\frac{1}{6}$ of the earth's gravity. Therefore, an item on the moon will weigh $\frac{1}{6}$ of what that item weighs on earth. If a tool weights 72 pounds on earth, how much does it weigh on the moon?

_____

Spiral Review (Chapter 4, Lesson 3) **KEY NS 1.5**

Compare. Write >, <, or = for each ◯.

3. $\frac{3}{7}$ ◯ 0.7

4. $\frac{4}{15}$ ◯ 0.12

5. Jamie had $\frac{5}{6}$ of her mathematics quiz correct. On her science quiz she had 0.7 of the questions correct. On which quiz did Jamie receive a better score? _____

Problem Solving: Write an Expression

CA Standards
KEY AF 1.2, MR 2.4

Write an expression to solve each problem.

1. At the Cupcake Factory, Ramon buys one large chocolate cupcake for $2.50 and spends 6 times as much on lemon cupcakes. How much does Ramon spend on cupcakes?

_____

2. To make a pillow, Kira needs 56 inches of fabric and 4 times that amount of trim. How much trim does Kira need?

_____

3. John spent 5 more hours working on his science fair project than Hannah. Abigail spent twice as long as John. If Hannah spent 19 hours on her project, how long did it take Abigail to complete her project?

_____

4. Kevin has a collection of football cards. He has 3 times as many American Conference cards as National Conference cards. He decides to give 32 American Conference cards to his cousin. If he had 46 National Conference cards, how many American Conference cards does he now have?

_____

5. Noreen makes clay pottery. On Saturday, she had 15 pottery vases. On Sunday, she made 5 more, and on Monday, she sold half of the total number of vases. By Wednesday, she had sold 3 more vases, and had made 5 more. How many vases did she have by the end of the day on Wednesday?

_____

6. Make a story problem for the expression below. Then solve the problem.
$(n + 15) \div 5$

_____

_____

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