Name _____ Date _____ Class _____

LESSON 4-1

Practice B

Divisibility

Tell whether each number is divisible by 2, 3, 4, 5, 6, 9, and 10.

1. 90 _____

2. 416 _____

3. 308 _____

4. 540 _____

5. 804 _____

6. 225 _____

7. 663 _____

8. 972 _____

9. 836 _____

Tell whether each number is prime or composite.

10. 33 _____

11. 69 _____

12. 41 _____

13. 45 _____

14. 58 _____

15. 87 _____

16. 61 _____

17. 53 _____

18. 99 _____

19. Dan counted all the coins in his bank, and he had 72 quarters. Can he exchange the quarters for an even amount of dollar bills? How do you know?

_____

_____

20. A small town purchased 196 American flags for its Memorial Day parade. Eight locations were selected to display the flags. Can each location have the same number of flags? If no, explain why not. If yes, how many flags will be displayed at each location?

_____

Name _____ Date _____ Class _____

LESSON 4-2

Practice B

Factors and Prime Factorization

List all the factors for each number.

1. 15

_____

_____

2. 24

_____

_____

3. 33

_____

_____

4. 72

_____

_____

5. 48

_____

_____

6. 95

_____

_____

7. 66

_____

_____

8. 87

_____

_____

9. 36

_____

_____

Write the prime factorization of each number.

10. 44

_____

11. 56

_____

12. 42

_____

13. 39

_____

14. 36

_____

15. 125

_____

16. 85

_____

17. 100

_____

18. 32

_____

19. James has an assigned seat for his flight to Denver. The seats on the plane are numbered 1–49. James's seat number is an odd number greater than 10 that is factor of 100. What is his seat number for the flight?

_____

20. Linda writes the prime factorization of 40 as $2 \cdot 2 \cdot 2 \cdot 5$ on the board. Phil writes the prime factorization of 40 as $2^3 \cdot 5$. Who is correct?

_____

Name _____ Date _____ Class _____

LESSON 4-3

Practice B

Greatest Common Factor

Find the GCF of each set of numbers.

1. 12 and 15 _____

2. 18 and 24 _____

3. 15 and 25 _____

4. 16 and 24 _____

5. 36 and 45 _____

6. 24 and 54 _____

7. 48 and 64 _____

8. 27 and 72 _____

9. 55 and 77 _____

10. 16, 28, and 48 _____

11. 15, 35, and 95 _____

12. 20, 30, and 80 _____

13. 18, 36, and 54 _____

14. 27, 36, and 45 _____

15. 21, 49, and 63 _____

16. 25, 35, and 45 _____

17. 28, 42, and 63 _____

18. 25, 75, and 115 _____

19. Mr. Thompson's sixth-grade class is competing in the school field day. There are 16 boys and 12 girls in his class. He divided the class into the greatest number of teams possible with the same number of boys on each team and the same number of girls on each team. How many teams were made if each person was on a team? How many girls were on each team? How many boys?

_____

20. Barbara is making candy bags for her birthday party. She has 24 lollipops, 12 candy bars, and 42 pieces of gum. She wants each bag to have the same number of each kind of candy. What is the greatest number of bags she can make if all the candy is used? How many pieces of each kind of candy will be in each bag?

_____

_____

Name _____ Date _____ Class _____

LESSON 4-3

Problem Solving

Greatest Common Factor

Write the correct answer.

1. Carolyn has 24 bottles of shampoo, 36 tubes of hand lotion, and 60 bars of lavender soap to make gift baskets. She wants to have the same number of each item in every basket. What is the greatest number of baskets she can make without having any of the items left over?

_____

_____

2. There are 40 girls and 32 boys who want to participate in the relay race. If each team must have the same number of girls and boys, what is the greatest number of teams that can race? How many boys and girls will be on each team?

_____

_____

3. Ming has 15 quarters, 30 dimes, and 48 nickels. He wants to group his money so that each group has the same number of each coin. What is the greatest number of groups he can make? How many of each coin will be in each group? How much money will each group be worth?

_____

_____

_____

4. A gardener has 27 tulip bulbs, 45 tomato plants, 108 rose bushes, and 126 herb seedlings to plant in the city garden. He wants each row of the garden to have the same number of each kind of plant. What is the greatest number of rows that the gardener can make if he uses all the plants?

_____

_____

_____

Circle the letter of the correct answer.

5. Kim packed 6 boxes with identical supplies. It was the greatest number she could pack and use all the supplies. Which of these is her supply list?

   A 24 pencils, 36 pens, 10 rulers

   B 12 rulers, 30 pencils, 45 pens

   C 42 pencils, 18 rulers, 72 pens

   D 60 pens, 54 pencils, 32 rulers

6. The sum of three numbers is 60. Their greatest common factor is 4. Which of the following lists shows those three numbers?

   F 4, 16, 36

   G 8, 20, 32

   H 14, 16, 30

   J 10, 18, 32

Name _____ Date _____ Class _____

LESSON 4-4

Practice B

Decimals and Fractions

Write each decimal as a fraction or mixed number.

1. 0.23 _____

2. 0.1 _____

3. 3.25 _____

4. $1.\overline{3}$ _____

5. 5.5 _____

6. 3.7 _____

Write each fraction or mixed number as a decimal.

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

8. $\frac{1}{9}$ _____

9. $1\frac{2}{3}$ _____

10. $3\frac{3}{5}$ _____

11. $2\frac{1}{3}$ _____

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

Order the fractions and decimals from least to greatest.

13. $\frac{1}{4}$, 0.7, $\frac{3}{5}$ _____

14. 0.25, $\frac{1}{8}$, 0.3 _____

15. $\frac{9}{10}$, 0.49, $\frac{1}{2}$ _____

Order the fractions and decimals from greatest to least.

16. 0.13, $\frac{1}{10}$, 0.9 _____

17. $\frac{2}{5}$, 0.7, $\frac{2}{3}$ _____

18. 0.65, $\frac{4}{5}$, $\frac{3}{4}$ _____

19. Derrick has a dollar bill and three dimes, Jane has a dollar bill and one quarter, and Kelly has a dollar bill and ten nickels. Who has the most money? the least?

_____

20. It rained three and one half inches in April. In May it rained $3\frac{3}{4}$ inches, and in June it rained 3.6 inches. Write the months in order from the greatest to the least amount of rain.

_____

Name _____ Date _____ Class _____

LESSON 4-4

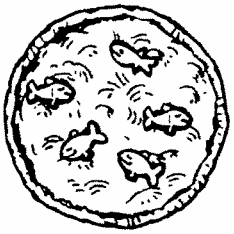
Challenge

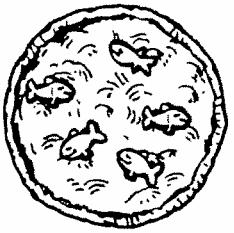
Fractions of Pizza

Write the fractions as decimals. Then slice and shade pieces of each pizza to represent each fraction. Finally, compare the pizzas in each row by writing <, >, or =.

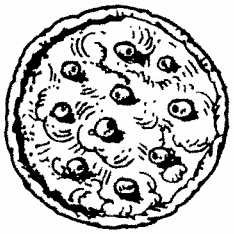
1. $\frac{3}{4}$ _____ $\square$ $\frac{4}{5}$ _____

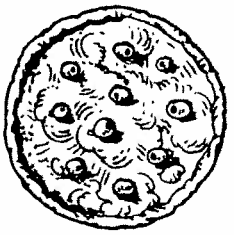
2. $\frac{3}{6}$ _____ $\square$ $\frac{1}{2}$ _____





3. $\frac{2}{3}$ _____ $\square$ $\frac{3}{5}$ _____





4. $\frac{1}{5}$ _____ $\square$ $\frac{1}{3}$ _____

Name _____ Date _____ Class _____

LESSON 4-5

Practice B

Equivalent Fractions

Find two equivalent fractions for the given fraction.

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

2. $\frac{4}{7}$ _____

3. $\frac{11}{13}$ _____

4. $\frac{2}{15}$ _____

5. $\frac{5}{14}$ _____

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

7. $\frac{2}{21}$ _____

8. $\frac{24}{48}$ _____

9. $\frac{25}{100}$ _____

Find the missing numbers that makes the fractions equivalent.

10. $\frac{4}{7} = \frac{?}{28}$ _____

11. $\frac{2}{9} = \frac{?}{54}$ _____

12. $\frac{36}{4} = \frac{?}{1}$ _____

13. $\frac{56}{8} = \frac{?}{2}$ _____

14. $1\frac{3}{5} = \frac{?}{25}$ _____

15. $1\frac{4}{7} = \frac{?}{42}$ _____

Write each fraction in simplest form.

16. $\frac{15}{25}$ _____

17. $\frac{8}{36}$ _____

18. $\frac{12}{18}$ _____

19. $\frac{10}{24}$ _____

20. Billy had 24 trading cards. He gave 7 of his cards to Miko and 9 of his cards to Teri. What fraction of his original 24 cards does Billy have left? Write two equivalent fractions for that amount.

_____

21. Beth and Kristine ride their bikes to school in the morning. Beth has to ride $1\frac{7}{32}$ miles. Kristine has to ride $\frac{39}{32}$ miles. Who rides the farthest to reach school? Explain.

_____

Name _____ Date _____ Class _____

LESSON 4-6

Practice B

Comparing and Ordering Fractions

Compare. Write <, >, or =.

1. $\frac{4}{7} \square \frac{3}{5}$
2. $\frac{1}{8} \square \frac{2}{3}$
3. $\frac{1}{4} \square \frac{2}{5}$
4. $\frac{7}{8} \square \frac{5}{6}$
5. $\frac{18}{24} \square \frac{3}{4}$
6. $\frac{4}{5} \square \frac{8}{12}$

Order the fractions from least to greatest.

7. $\frac{1}{2}, \frac{2}{5}, \frac{1}{3}$ _____
8. $\frac{2}{5}, \frac{3}{4}, \frac{2}{3}$ _____
9. $\frac{3}{7}, \frac{5}{6}, \frac{4}{5}$ _____
10. $\frac{5}{9}, \frac{3}{7}, \frac{2}{3}$ _____
11. $\frac{3}{8}, \frac{2}{7}, \frac{3}{5}$ _____
12. $\frac{2}{7}, \frac{1}{8}, \frac{2}{5}$ _____

Order the fractions from greatest to least.

13. $\frac{1}{6}, \frac{2}{7}, \frac{1}{5}$ _____
14. $\frac{3}{7}, \frac{4}{9}, \frac{2}{3}$ _____
15. $\frac{2}{5}, \frac{3}{10}, \frac{2}{3}$ _____
16. $\frac{4}{5}, \frac{7}{10}, \frac{1}{12}$ _____
17. $\frac{3}{8}, \frac{3}{4}, \frac{4}{9}$ _____
18. $\frac{4}{7}, \frac{3}{5}, \frac{5}{6}$ _____

19. David ran $4\frac{1}{4}$ miles, Shane ran $4\frac{1}{2}$ miles, and Matt ran $4\frac{5}{8}$ miles. Who ran the farthest?

_____

20. Darius and Anita both took the same test. Darius answered $\frac{5}{6}$ of the questions correctly, and Anita answered $\frac{6}{7}$ correctly. Who got the higher score on the test?

_____

Name _____ Date _____ Class _____

LESSON 4-7

Practice B

Mixed Numbers and Improper Fractions

Write each mixed number as an improper fraction.

1. $3\frac{1}{2}$ _____

2. $2\frac{1}{3}$ _____

3. $5\frac{1}{4}$ _____

4. $1\frac{3}{7}$ _____

5. $3\frac{3}{4}$ _____

6. $4\frac{1}{3}$ _____

7. $2\frac{3}{5}$ _____

8. $3\frac{5}{6}$ _____

9. $7\frac{1}{3}$ _____

Write each improper fraction as a mixed number or whole number. Tell whether your answer is a mixed number or whole number.

10. $\frac{17}{3}$ _____

11. $\frac{40}{8}$ _____

12. $\frac{48}{7}$ _____

13. $\frac{33}{10}$ _____

14. $\frac{50}{8}$ _____

15. $\frac{83}{9}$ _____

16. $\frac{104}{8}$ _____

17. $\frac{121}{6}$ _____

18. $\frac{78}{11}$ _____

19. The hotel ordered an extra-long rug for a hallway that is $\frac{123}{2}$ feet long. What is the rug's length in feet and inches? Remember, 1 foot = 12 inches.

_____

20. During this year's football-throwing contest, John threw the ball $49\frac{2}{3}$ feet. Sharon threw the ball 51 feet. Who threw the ball $\frac{153}{3}$ feet?

_____

Name _____ Date _____ Class _____

LESSON 4-1

Problem Solving

Divisibility

Use the table to answer the questions.

Subways Around the World

City, Country	Length (mi)
New York, U.S.	247
Mexico City, Mexico	111
Paris, France	125
Moscow, Russia	152
Seoul, South Korea	83
Tokyo, Japan	105

1. Which city's subway has a length that is a prime number of miles?

_____

2. Which subway could be evenly broken into sections of 2 miles each?

_____

3. Which subways could be evenly broken into sections of 5 miles each?

_____

_____

4. Which subways could be evenly divided into sections of track that are each 3 miles long?

_____

_____

5. Which subway's length is not a prime number, but is also not divisible by 2, 3, 4, 5, 6, or 9?

_____

_____

6. Which subway's length is divisible by 4 miles?

_____

7. Which subway's length is divisible by 7 miles?

_____

Circle the letter of the correct answer.

8. The subway in Hong Kong, China, has a length that is a prime number of miles. Which of the following is its length?

   A 260 miles

   B 268 miles

   C 269 miles

   D 265 miles

9. The subway in St. Petersburg, Russia, has a length that is divisible by 3 miles. Which of the following is its length?

   F 57 miles

   G 56 miles

   H 55 miles

   J 58 miles

Name _____ Date _____ Class _____

LESSON 4-2

Problem Solving

Factors and Prime Factorization

Write the correct answer.

1. The area of a rectangle is the product of its length and width. If a rectangular board has an area of 30 square feet, what are the possible measurements of its length and width?

_____

_____

2. The first-floor apartments in Jenna's building are numbered 100 to 110. How many apartments on that floor are a prime number? What are those apartment numbers?

_____

_____

3. If a composite number has the first five prime numbers as factors, what is the smallest number it could be? Write that number's prime factorization.

_____

4. Tim's younger brother, Bryant, just had a birthday. Bryant's age only has one factor, and is not a prime number. How old is Bryant?

_____

5. A Russian mathematician named Christian Goldbach came up with a theory that every even number greater than 4 can be written as the sum of two odd primes. Test Goldbach's theory with the numbers 6 and 50.

_____

_____

6. Mr. Samuels has 24 students in his math class. He wants to divide the students into equal groups, and he wants the number of students in each group to be prime. What are his choices for group sizes? How many groups can he make?

_____

_____

Circle the letter of the correct answer.

7. Why is 2 the only even prime number?
   - **A** It is the smallest prime number.
   - **B** All other even numbers are divisible by 2.
   - **C** It only has 1 and 2 as factors.
   - **D** All odd numbers are prime.

8. What prime numbers are factors of both 60 and 105?
   - **F** 2 and 3
   - **G** 2 and 5
   - **H** 3 and 5
   - **J** 5 and 7

Name _____ Date _____ Class _____

LESSON 4-4

Reteach

Decimals and Fractions

You can write decimals as fractions or mixed numbers. A place value chart will help you read the decimal. Remember the decimal point is read as the word "and."

To write 0.47 as a fraction, first think about the decimal in words.

Ones	Tenths	Hundredths	Thousandths	Ten Thousandths
0 .	4	7		

0.47 is read "forty-seven hundredths." The place value of the decimal tells you the denominator is 100.

$$0.47 = \frac{47}{100}$$

To write 8.3 as a mixed number, first think about the decimal in words.

Ones	Tenths	Hundredths	Thousandths	Ten Thousandths
8 .	3			

8.3 is read "eight and three tenths." The place value of the decimal tells you the denominator is 10. The decimal point is read as the word "and."

$$8.3 = 8\frac{3}{10}$$

Write each decimal as a fraction or mixed number.

1. 0.61 _____

2. 3.43 _____

3. 0.009 _____

4. 4.7 _____

5. 1.5 _____

6. 0.13 _____

7. 5.002 _____

8. 0.021 _____

Name _____ Date _____ Class _____

LESSON 4-4

Reteach

Decimals and Fractions (continued)

Fractions and mixed numbers can be written as decimals.

To write $\frac{1}{4}$ as a decimal, first think about the expression in words.

$\frac{1}{4}$ means "1 divided by 4."

Then do the division.

$$\begin{array}{r} 0.25 \\ 4\overline{)1.00} \\ -8 \\ \hline 20 \\ -20 \\ \hline 0 \end{array}$$

0.25 is a terminating decimal because it has an end.

$\frac{1}{4} = 0.25$

A number that contains a whole number and a fraction is called a mixed number. $2\frac{1}{3}$ is an example of a mixed number. To write $2\frac{1}{3}$ as a decimal, first think about the expression in words. $2\frac{1}{3}$ means "2 and 1 divided by 3." Keep 2 as the whole number.

Then do the division.

$$\begin{array}{r} 0.33 \\ 3\overline{)1.00} \\ -9 \\ \hline 10 \\ -09 \\ \hline 1 \end{array}$$

$1 \div 3 = 0.33\ldots$, or $0.\overline{3}$.

$0.\overline{3}$ is a repeating decimal because it does not end.

So, $2\frac{1}{3} = 2.\overline{3}$.

Write each fraction or mixed number as a decimal.

9. $\frac{3}{5}$ _____

10. $3\frac{3}{4}$ _____

11. $\frac{2}{3}$ _____

12. $1\frac{2}{9}$ _____

13. $\frac{1}{6}$ _____

14. $2\frac{1}{8}$ _____

15. $\frac{5}{6}$ _____

16. $8\frac{1}{9}$ _____

Name _____ Date _____ Class _____

LESSON 4-4

Problem Solving

Decimals and Fractions

Electricity is measured in amperes, or the rate electrical currents flow. A high ampere measurement means that a lot of electricity is being used. The table below shows the average amount of electricity some household appliances use per hour. Use the table to answer the questions.

Electricity Use in the Home

Appliance	Amps per Hour
Blender	$2\frac{1}{2}$
Coffeemaker	$6\frac{2}{3}$
Computer and printer	$1\frac{5}{6}$
Microwave oven	$12\frac{1}{2}$
Popcorn popper	$2\frac{1}{12}$
25-inch television	$1\frac{1}{4}$
VCR	$\frac{1}{3}$

1. How much electricity does an average 25-inch television use each hour? Write your answer as a decimal.

_____

2. Which appliance uses an average of 2.5 amps per hour?

_____

3. Which appliance uses the most electricity per hour? Write its ampere measurement as a decimal.

_____

_____

4. How much electricity do most computers and printers use in an hour? Write that measurement as a decimal.

_____

_____

5. Which appliances have hourly ampere measurements that are repeating decimals?

_____

_____

Circle the letter of the correct answer.

6. In most years, 39.7 percent of the world's energy comes from burning oil. What is this percent written as a fraction?

A $\frac{39}{7}$ percent

B $39\frac{1}{7}$ percent

C $3\frac{9}{7}$ percent

D $39\frac{7}{10}$ percent

7. The United States produces about 13.2 percent of the world's hydroelectric power. What fraction of hydroelectric power does the United States produce?

F $13\frac{1}{5}$ percent

G $\frac{13}{2}$ percent

H $1\frac{3}{2}$ percent

J $13\frac{1}{2}$ percent

Name _____ Date _____ Class _____

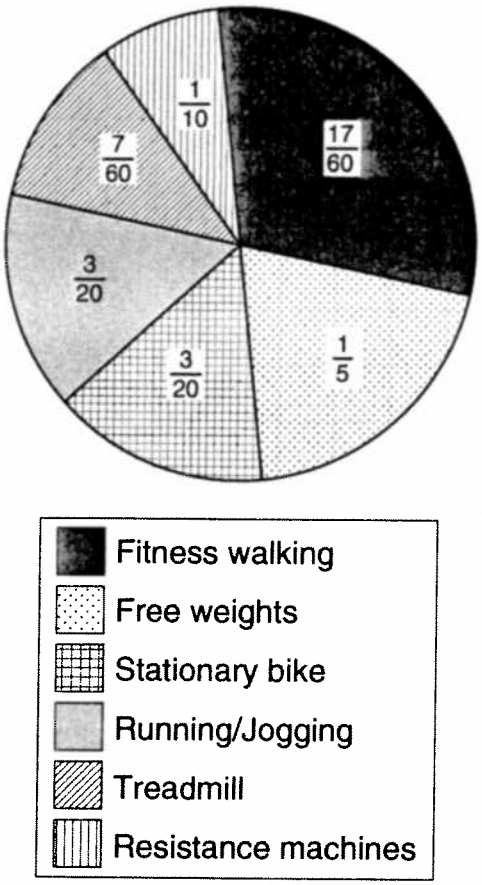
LESSON 4-5

Problem Solving

Equivalent Fractions

About 60 million Americans exercise 100 times or more each year. Their top activities and the fraction of those 60 million people who did them are shown on the circle graph. Use the graph to answer the questions.

Exercise in the U.S.



1. Which two activities on the graph did the same number of people use to keep in shape?

_____

_____

2. Which activity did $\frac{3}{15}$ of the people use to exercise?

_____

3. Which activity had the most participants? Write an equivalent fraction for that activity's participants.

_____

_____

4. Which activity had the fewest participants? Write two equivalent fractions for that activity's participants.

_____

_____

5. Which fitness activity did $\frac{35}{300}$ of the regular exercisers in the United States use to stay healthy?

_____

Circle the letter of the correct answer.

6. An average-sized person can burn about $6\frac{1}{2}$ calories a minute while riding a bike. Which of the following is equivalent to that amount?

   A $1\frac{2}{2}$ **C** $6\frac{2}{4}$

   B $5\frac{6}{2}$ **D** $6\frac{2}{6}$

7. An average-sized person can burn about 11.25 calories a minute while jogging. Which of the following is not equivalent to that amount?

   F $11\frac{1}{4}$ **H** $11\frac{2}{8}$

   G $11\frac{1}{2}$ **J** $11\frac{3}{12}$

Name _____ Date _____ Class _____

LESSON 4-6

Problem Solving

Comparing and Ordering Fractions

The table shows what fraction of Earth's total land area each of the continents makes up. Use the table to answer the questions.

Earth's Land

Continent	Fraction of Earth's Land
Africa	$\frac{1}{5}$
Antarctica	$\frac{1}{10}$
Asia	$\frac{3}{10}$
Australia	$\frac{1}{20}$
Europe	$\frac{7}{100}$
North America	$\frac{4}{25}$
South America	$\frac{6}{50}$

1. Which continent makes up most of Earth's land?

_____

2. Which continent makes up the least part of Earth's land?

_____

3. Explain how you would compare the part of Earth's total land area that Australia and Europe make up.

_____

_____

4. Which continent covers a larger part of Earth's total land area, North America or South America?

_____

5. Which continent covers a smaller part of Earth's total land area, Africa or Antarctica?

_____

Circle the letter of the correct answer.

6. Which of the following lists shows the continents written in order from the greatest part of Earth's total land they cover to the least part?

   A Asia, Africa, North America

   B Africa, Asia, North America

   C Asia, South America, North America

   D North America, Asia, South America

7. Which of the following lists shows the continents written in order from the least part of Earth's total land they cover to the greatest part?

   F Antarctica, Europe, South America

   G South America, Antarctica, Europe

   H Australia, Europe, Antarctica

   J Antarctica, Europe, Australia

Name _____ Date _____ Class _____

LESSON 4-7 Problem Solving

Mixed Numbers and Improper Fractions

Write the correct answer.

1. If stretched end-to-end, the total length of the blood vessels inside your body could wrap around Earth's equator $\frac{5}{2}$ times! Write this fact as a mixed number.

_____

2. In 2000, the average 12-year-old child in the United States earned an allowance of 9 dollars and $\frac{7}{25}$ cents a week. Write this amount as an improper fraction and a decimal.

_____

3. The normal body temperature for a rattlesnake is between $53\frac{3}{5}$°F and $64\frac{2}{5}$°F. Write this range as improper fractions.

_____

4. An astronaut who weighs 250 pounds on Earth would weigh $41\frac{1}{2}$ pounds on the moon. Write the astronaut's moon weight as an improper fraction.

_____

5. Adult bees only eat nectar, the substance in flowers used to make honey. A bee could fly 4 million miles on the energy it would get from eating $\frac{9}{2}$ liters of nectar. Write this amount of nectar as a mixed number.

_____

6. A professional baseball can weigh no less than $\frac{45}{9}$ ounces and no more than $\frac{21}{4}$ ounces. Write this range as mixed numbers.

_____

Circle the letter of the correct answer.

7. Betty needs a piece of lumber that is $\frac{14}{3}$ feet long. Which size should she look for at the hardware store?

   A $3\frac{1}{3}$ feet

   B $3\frac{1}{4}$ feet

   C $4\frac{2}{3}$ feet

   D $4\frac{1}{4}$ feet

8. What operations are used to change a mixed number to an improper fraction?

   F multiplication and addition

   G division and subtraction

   H division and addition

   J multiplication and subtraction