Name _____ Date _____ Class _____

LESSON 4-9

Practice B

Multiplying Fractions by Whole Numbers

Multiply. Write your answers in simplest form.

1. $5 \cdot \frac{1}{10}$ _____
2. $6 \cdot \frac{1}{18}$ _____
3. $4 \cdot \frac{1}{14}$ _____
4. $3 \cdot \frac{1}{12}$ _____
5. $2 \cdot \frac{1}{8}$ _____
6. $6 \cdot \frac{1}{10}$ _____
7. $3 \cdot \frac{1}{6}$ _____
8. $3 \cdot \frac{5}{12}$ _____
9. $3 \cdot \frac{2}{7}$ _____
10. $2 \cdot \frac{3}{8}$ _____
11. $10 \cdot \frac{3}{15}$ _____
12. $8 \cdot \frac{2}{14}$ _____
13. $5 \cdot \frac{2}{10}$ _____
14. $4 \cdot \frac{4}{12}$ _____
15. $2 \cdot \frac{13}{20}$ _____

Evaluate $6x$ for each value of x. Write your answers in simplest form.

16. $x = \frac{2}{3}$ _____
17. $x = \frac{2}{8}$ _____
18. $x = \frac{1}{4}$ _____
19. $x = \frac{2}{6}$ _____
20. $x = \frac{2}{7}$ _____
21. $x = \frac{2}{5}$ _____
22. $x = \frac{3}{11}$ _____
23. $x = \frac{5}{12}$ _____

24. Thomas spends 60 minutes exercising. For $\frac{1}{4}$ of that time, he jumps rope. How many minutes does he spend jumping rope?

_____

25. Kylie made a 4-ounce milk shake. Two-thirds of the milk shake was ice cream. How many ounces of ice cream did Kylie use in the shake?

_____

Name _____ Date _____ Class _____

LESSON 5-1

Practice B

Multiplying Fractions

Multiply. Write each answer in simplest form.

1. $\frac{1}{2} \cdot \frac{2}{5}$ _____

2. $\frac{1}{3} \cdot \frac{7}{8}$ _____

3. $\frac{2}{3} \cdot \frac{4}{6}$ _____

4. $\frac{1}{4} \cdot \frac{10}{11}$ _____

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

6. $\frac{8}{9} \cdot \frac{3}{4}$ _____

7. $\frac{3}{8} \cdot \frac{4}{5}$ _____

8. $\frac{2}{7} \cdot \frac{3}{4}$ _____

9. $\frac{1}{6} \cdot \frac{2}{3}$ _____

Evaluate the expression $x \cdot \frac{1}{5}$ for each value of x. Write each answer in simplest form.

10. $x = \frac{3}{7}$ _____

11. $x = \frac{5}{6}$ _____

12. $x = \frac{2}{3}$ _____

13. $x = \frac{10}{11}$ _____

14. $x = \frac{5}{8}$ _____

15. $x = \frac{4}{5}$ _____

16. A cookie recipe calls for $\frac{2}{3}$ cup of brown sugar. Sarah is making $\frac{1}{4}$ of the recipe. How much brown sugar will she need?

_____

17. Nancy spent $\frac{7}{8}$ hour working out at the gym. She spent $\frac{5}{7}$ of that time lifting weights. What fraction of an hour did she spend lifting weights?

_____

Name _____ Date _____ Class _____

LESSON 5-2

Practice B

Multiplying Mixed Numbers

Multiply. Write each answer in simplest form.

1. $1\frac{2}{3} \cdot \frac{4}{5}$ _____

2. $1\frac{7}{8} \cdot \frac{4}{5}$ _____

3. $2\frac{3}{4} \cdot \frac{1}{5}$ _____

4. $2\frac{1}{6} \cdot \frac{2}{3}$ _____

5. $2\frac{2}{5} \cdot \frac{3}{8}$ _____

6. $1\frac{3}{4} \cdot \frac{5}{6}$ _____

7. $1\frac{1}{6} \cdot \frac{3}{5}$ _____

8. $\frac{2}{9} \cdot 2\frac{1}{7}$ _____

9. $2\frac{3}{11} \cdot \frac{7}{10}$ _____

Find each product. Write each answer in simplest form.

10. $\frac{6}{7} \cdot 1\frac{1}{4}$ _____

11. $\frac{5}{8} \cdot 1\frac{3}{5}$ _____

12. $2\frac{4}{9} \cdot \frac{1}{6}$ _____

13. $1\frac{3}{10} \cdot 1\frac{1}{3}$ _____

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

15. $1\frac{2}{3} \cdot 3\frac{1}{2}$ _____

16. Dominick lives $1\frac{3}{4}$ miles from his school. If his mother drives him half the way, how far will Dominick have to walk to get to school?

_____

17. Katoni bought $2\frac{1}{2}$ dozen donuts to bring to the office. Since there are 12 donuts in a dozen, how many donuts did Katoni buy?

_____

Name _____ Date _____ Class _____

LESSON 5-3

Reteach

Dividing Fractions and Mixed Numbers

Two numbers are reciprocals if their product is 1. $\frac{2}{3}$ and $\frac{3}{2}$ are reciprocals because $\frac{2}{3} \cdot \frac{3}{2} = \frac{6}{6} = 1$.

Dividing by a fraction is the same as multiplying by its reciprocal.

$\frac{1}{4} \div 2 = \frac{1}{8}$ $\qquad$ $\frac{1}{4} \cdot \frac{1}{2} = \frac{1}{8}$

So, you can use reciprocals to divide by fractions.

To find $\frac{2}{3} \div 4$, first rewrite the expression as a multiplication expression using the reciprocal of the divisor, 4.

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

Then use canceling to find the product in simplest form.

$\frac{2}{3} \div 4 = \frac{2}{3} \cdot \frac{1}{4} = \frac{1}{3} \cdot \frac{1}{2} = \frac{1}{6}$

To find $3\frac{1}{4} \div 1\frac{1}{2}$, first rewrite the expression using improper fractions.

$\frac{13}{4} \div \frac{3}{2}$

Next, write the expression as a multiplication expression.

$\frac{13}{4} \cdot \frac{2}{3}$

$3\frac{1}{4} \div 1\frac{1}{2} = \frac{13}{4} \div \frac{3}{2} = \frac{13}{4} \cdot \frac{2}{3} = \frac{13}{2} \cdot \frac{1}{3} = \frac{13}{6} = 2\frac{1}{6}$

Divide. Write each answer in simplest form.

1. $\frac{1}{4} \div 3$

$\frac{1}{4} \div \frac{}{1}$

$\frac{\quad}{\quad} \cdot \frac{\quad}{\quad}$

_____

2. $1\frac{1}{2} \div 1\frac{1}{4}$

$\frac{3}{2} \div \frac{}{4}$

$\frac{\quad}{\quad} \cdot \frac{\quad}{\quad}$

_____

3. $\frac{3}{8} \div 2$

$\frac{3}{8} \div \frac{}{1}$

$\frac{\quad}{\quad} \cdot \frac{\quad}{\quad}$

_____

4. $2\frac{1}{3} \div 1\frac{3}{4}$

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

$\frac{\quad}{\quad} \cdot \frac{\quad}{\quad}$

_____

5. $\frac{1}{5} \div 2$

_____

6. $1\frac{1}{6} \div 2\frac{2}{3}$

_____

7. $\frac{1}{8} \div 4$

_____

8. $3\frac{1}{8} \div \frac{1}{2}$

_____

Name _____ Date _____ Class _____

LESSON 5-3

Practice B

Dividing Fractions and Mixed Numbers

Find the reciprocal.

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

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

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

4. $\frac{1}{10}$ _____

5. $\frac{4}{9}$ _____

6. $\frac{13}{14}$ _____

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

8. $2\frac{4}{5}$ _____

9. $3\frac{1}{6}$ _____

Divide. Write each answer in simplest form.

10. $\frac{5}{6} \div 5$ _____

11. $2\frac{3}{4} \div 1\frac{4}{7}$ _____

12. $\frac{7}{8} \div \frac{2}{3}$ _____

13. $3\frac{1}{4} \div 2\frac{3}{4}$ _____

14. $\frac{9}{10} \div 3$ _____

15. $\frac{3}{4} \div 9$ _____

16. $2\frac{6}{9} \div \frac{6}{7}$ _____

17. $\frac{5}{6} \div 2\frac{3}{10}$ _____

18. $2\frac{1}{8} \div 3\frac{1}{4}$ _____

19. The rope in the school gymnasium is $10\frac{1}{2}$ feet long. To make it easier to climb, the gym teacher tied a knot in the rope every $\frac{3}{4}$ foot. How many knots are in the rope? _____

20. Mr. Fulton bought $12\frac{1}{2}$ pounds of ground beef for the cookout. He plans on using $\frac{1}{4}$ pound of beef for each hamburger. How many hamburgers can he make? _____

21. Mrs. Marks has $9\frac{1}{4}$ ounces of fertilizer for her plants. She plans on using $\frac{3}{4}$ ounce of fertilizer for each plant. How many plants can she fertilizer? _____

Name _____ Date _____ Class _____

LESSON 4-9

Problem Solving

Multiplying Fractions by Whole Numbers

Write the answers in simplest form.

1. Did you know that some people have more bones than the rest of the population? About $\frac{1}{20}$ of all people have an extra rib bone. In a crowd of 60 people, about how many people are likely have an extra rib bone?

_____

2. The Appalachian National Scenic Trail is the longest marked walking path in the United States. It extends through 14 states for about 2,000 miles. Last year, Carla hiked $\frac{1}{5}$ of the trail. How many miles of the trail did she hike?

_____

3. Human fingernails can grow up to $\frac{1}{10}$ of a millimeter each day. How much can fingernails grow in one week?

_____

4. Most people dream about $\frac{1}{4}$ of the time they sleep. How long will you probably dream tonight if you sleep for 8 hours?

_____

5. Today, the United States flag has 50 stars—one for each state. The first official U.S. flag was approved in 1795. It had $\frac{3}{10}$ as many stars as today's flag. How many stars were on the first official U.S. flag?

_____

6. The Statue of Liberty is about 305 feet tall from the ground to the tip of her torch. The statue's pedestal makes up about $\frac{1}{2}$ of its height. About how tall is the pedestal of the Statue of Liberty?

_____

Circle the letter of the correct answer.

7. The Caldwells own a 60-acre farm. They planted $\frac{3}{5}$ of the land with corn. How many acres of corn did they plant?

   A 12 acres
   B 36 acres
   C 20 acres
   D 18 acres

8. Objects on Uranus weigh about $\frac{4}{5}$ of their weight on Earth. If a dog weighs 40 pounds on Earth, how much would it weigh on Uranus?

   F 32 pounds
   G 10 pounds
   H 8 pounds
   J 30 pounds

Name _____ Date _____ Class _____

LESSON 5-1

Problem Solving

Multiplying Fractions

Use the circle graph to answer the questions. Write each answer in simplest form.

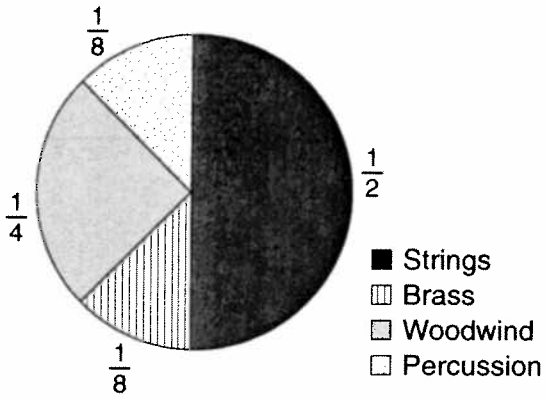
1. Of the students playing stringed instruments, $\frac{3}{4}$ play the violin. What fraction of the whole orchestra is violin players?

_____

2. Of the students playing woodwind instruments, $\frac{1}{2}$ play the clarinet. What fraction of the whole orchestra is clarinet players?

_____

School Orchestra



3. Two-thirds of the students who play a percussion instrument are boys. What fraction of the musicians in the orchestra is boys who play percussion? girls who play percussion?

_____

_____

4. The brass section is evenly divided into horns, trumpets, trombones, and tubas. What fraction of the whole orchestra do players of each of those brass instruments make up?

_____

Circle the letter of the correct answer.

5. There are 40 students in the orchestra. How many students play either percussion or brass instruments?

A 5 students

B 10 students

C 8 students

D 16 students

6. If 2 more violinists join the orchestra, what fraction of all the musicians would play a stringed instrument?

F $\frac{11}{21}$

G $\frac{11}{20}$

H $\frac{1}{20}$

J $\frac{1}{26}$

Name _____ Date _____ Class _____

LESSON 5-2

Problem Solving

Multiplying Mixed Numbers

Use the recipe to answer the questions.

CHOCOLATE CHIP COOKIES Servings: 1 batch
$1\frac{2}{3}$ cups flour
$\frac{3}{4}$ teaspoon baking soda
$\frac{1}{2}$ cup white sugar
$2\frac{1}{3}$ cups semisweet chocolate chips
$\frac{1}{2}$ cup brown sugar
$\frac{3}{4}$ cup butter
1 egg
$1\frac{1}{4}$ teaspoons vanilla

1. If you want to make $2\frac{1}{2}$ batches, how much flour would you need?

_____

2. If you want to make only a $1\frac{1}{2}$ batches, how much chocolate chips would you need?

_____

3. You want to bake $3\frac{1}{4}$ batches. How much vanilla do you need in all?

_____

4. If you make $1\frac{1}{4}$ batches, how much baking soda would you need?

_____

5. How many cups of white sugar do you need to make $3\frac{1}{2}$ batches of cookies?

_____

Choose the letter for the best answer.

6. Dan used $2\frac{1}{4}$ cups of butter to make chocolate chip cookies using the above recipe. How many batches of cookies did he make?

A 3 batches

B 4 batches

C 5 batches

D 6 batches

7. One bag of chocolate chips holds 2 cups. If you buy five bags, how many cups of chips will you have left over after baking $2\frac{1}{2}$ batches of cookies?

F $4\frac{1}{6}$ cups

G $5\frac{5}{6}$ cups

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

J $\frac{1}{3}$ cup

Name _____ Date _____ Class _____

LESSON 5-3

Problem Solving

Dividing Fractions and Mixed Numbers

Write the correct answer in simplest form.

1. Horses are measured in units called *hands*. One inch equals $\frac{1}{4}$ hand. The average Clydesdale horse is $17\frac{1}{5}$ hands high. What is the horse's height in inches? in feet?

_____

2. Cloth manufacturers use a unit of measurement called a *finger*. One finger is equal to $4\frac{1}{2}$ inches. If 25 inches are cut off a bolt of cloth, how many fingers of cloth were cut?

_____

3. People in England measure weights in units called *stones*. One pound equals $\frac{1}{14}$ of a stone. If a cat weighs $\frac{3}{4}$ stone, how many pounds does it weigh?

_____

4. The hiking trail is $\frac{9}{10}$ mile long. There are 6 markers evenly posted along the trail to direct hikers. How far apart are the markers placed?

_____

5. Phyllis bought 14 yards of material to make chair cushions. She cut the material into pieces $1\frac{3}{4}$ yards long to make each cushion. How many cushions did Phyllis make?

_____

6. Dry goods are sold in units called *pecks* and *bushels*. One peck equals $\frac{1}{4}$ bushel. If Peter picks $5\frac{1}{2}$ bushels of peppers, how many pecks of peppers did Peter pick?

_____

Choose the letter for the best answer.

7. A cake recipe calls for $1\frac{1}{2}$ cups of butter. One tablespoon equals $\frac{1}{16}$ cup. How many tablespoons of butter do you need to make the cake?

   A 24 tablespoons

   B 8 tablespoons

   C $\frac{3}{32}$ tablespoon

   D 9 tablespoons

8. Printed letters are measured in units called *points*. One point equals $\frac{1}{72}$ inch. If you want the title of a paper you are typing on a computer to be $\frac{1}{2}$ inch tall, what type point size should you use?

   F 144 point

   G 36 point

   H $\frac{1}{36}$ point

   J $\frac{1}{144}$ point