Name _____ Date _____ Class _____

LESSON 5-1

Practice A

Ratios

Match the ratios.

A farmer has 5 pigs, 13 chickens, and 8 cows.

1.	cows to pigs	13:5
2.	chickens to pigs	5:8
3.	cows to chickens	8:5
4.	pigs to cows	8:13

The school orchestra has 9 cellos, 14 flutes, and 17 violins.

5.	cellos to violins	9 to 14
6.	flutes to cellos	9 to 17
7.	violins to flutes	17 to 14
8.	cellos to flutes	14 to 9

Miguel has 8 pennies, 5 nickels, and 3 quarters.

9.	nickels to pennies	$\frac{3}{8}$
10.	pennies to quarters	$\frac{5}{3}$
11.	nickels to quarters	$\frac{5}{8}$
12.	quarters to pennies	$\frac{8}{3}$

A bowl has 16 grapes, 7 cherries, and 9 strawberries.

13.	grapes to strawberries	7:16
14.	cherries to grapes	7:9
15.	strawberries to cherries	16:9
16.	cherries to strawberries	9:7

A baseball team has 4 pitchers, 10 outfielders, and 12 infielders. Write each ratio in all three forms.

17. pitchers to infielders

_____

18. infielders to outfielders

_____

19. pitchers to outfielders

_____

20. outfielders to entire team

_____

21. Meg used 24 red tiles and 12 yellow tiles to make a design. Write the ratio of red tiles to yellow tiles in simplest form.

_____

22. Tell which club has the greater ratio of girls to boys.

_____

	Movie Club	Art Club
Girls	16	8
Boys	14	4

Name _____ Date _____ Class _____

LESSON 5-1 Problem Solving
Ratios

Write the correct answer.

1. The Rockport Diner has 8 seats at the counter and 32 seats at tables. Of these seats, 16 are taken. Write the ratio of seats taken to empty seats in simplest form three ways.

_____

2. During the 2001 WNBA season, the Los Angeles Sparks had 28 wins and only 4 losses. Write the ratio of wins to games played in simplest form three ways.

_____

3. For every 300 people surveyed in 2002, 186 said their favorite Winter Olympic sport was figure skating. Write this ratio in simplest form three ways.

_____

4. In 2004, George W. Bush received 286 electoral votes, and John Kerry received 251, and 1 elector voted for John Edwards. Write the ratio of Bush's electoral votes to total electoral votes in simplest form three ways.

_____

Choose the letter for the best answer.

5. There are 62 girls in the seventh grade and 58 boys in the eighth grade. Each grade has 120 students. Which statement correctly compares the ratios of boys to girls in each grade?

   A The eighth-grade ratio is greater.

   B The seventh-grade ratio is greater.

   C The eighth-grade ratio is lesser.

   D Both ratios are equal.

6. Matt has 6 video racing games and 8 video sports games. Which ratio is the ratio of racing games to total video games in simplest form?

   F $\frac{3}{4}$ **H** $\frac{4}{3}$

   G $\frac{3}{7}$ **J** $\frac{4}{7}$

7. Which player has the greatest ratio of baskets to total shots?

   A Marisol

   B Nina

   C Joanne

   D Talia

	Baskets	Missed Shots
Marisol	8	8
Nina	7	5
Joanne	2	4
Talia	5	3

Name _____ Date _____ Class _____

LESSON 5-2

Practice B

Rates

1. A part-time job pays $237.50 for 25 hours of work. How much money does the job pay per hour? _____

2. A class trip consists of 84 students and 6 teachers. How many students per teacher are there? _____

3. A factory builds 960 cars in 5 days. What is the average number of cars the factory produces per day? _____

4. The Wireless Cafe charges $5.40 for 45 minutes of Internet access. How much money does The Wireless Cafe charge per minute? _____

5. A bowler scores 3,152 points in 16 games. What is his average score in points per game? _____

6. Melissa drives 238 miles in 5 hours. What is her average rate of speed? _____

7. An ocean liner travels 1,233 miles in 36 hours. What is the ocean liner's average rate of speed? _____

8. A plane is scheduled to complete a 1,792-mile flightin 3.5 hours. In order to complete the trip on time, what should be the plane's average rate of speed? _____

9. The Nuthouse sells macadamia nuts in three sizes. The 12 oz jar sells for $8.65, the 16 oz jar sells for $10.99, and the 24 oz gift tin costs $16.99. Which size is the best buy? _____

10. Nina paid $37.57 for 13 gallons of gas. Fred paid $55.67 for 19 gallons of gas. Eleanor paid $48.62 for 17 gallons of gas. Who got the best buy? _____

Name _____ Date _____ Class _____

LESSON 5-2

Practice A

Rates

1. To make 2 batches of brownies, Ed needs 4 eggs. How many eggs are needed per batch of brownies?

$$\frac{4 \text{ eggs}}{2 \text{ batches}} = \frac{\quad \text{eggs}}{1 \text{ batch}}$$

Ed needs _____ eggs to make 1 batch of brownies.

2. Jenny drives 265 miles in 5 hours. What is her average rate of speed in miles per hour?

$$\frac{265 \text{ miles}}{5 \text{ hours}} = \frac{\quad \text{miles}}{1 \text{ hour}}$$

Jenny's average rate of speed is _____ miles per hour.

3. A job pays $56 for 8 hours of work. How much money does the job pay per hour? _____

4. Ned scores 84 points in 6 games. How many points per game does Ned score? _____

5. A 6-ounce blueberry muffin has 450 calories. How many calories are there per ounce? _____

6. A parking garage charges $21 for 6 hours. How much does the garage charge per hour? _____

7. The Rylands want to drive 360 miles in 8 hours. What should their average speed be in miles per hour?

_____

8. A plane travels 2,395 miles in 5 hours. What is the plane's average speed? _____

9. A 16-ounce bottle of fruit punch costs $2.40. A 24-ounce bottle of fruit punch costs $3.84. Which size is the better buy?

$$\frac{\$2.40}{16 \text{ oz}} = \frac{\$ \quad}{1 \text{ oz}} \qquad \frac{\$3.84}{24 \text{ oz}} = \frac{\$ \quad}{1 \text{ oz}}$$

The _____-ounce bottle costs less per ounce.

So, the _____-ounce bottle is the better buy.

Name _____ Date _____ Class _____

LESSON 5-4

Practice C

Identifying and Writing Proportions

Determine whether the ratios are proportional.

1. $\frac{7}{11}, \frac{42}{60}$ _____

2. $\frac{10}{18}, \frac{38}{72}$ _____

3. $\frac{18}{28}, \frac{27}{42}$ _____

4. $\frac{6}{14}, \frac{15}{35}$ _____

5. $\frac{9}{24}, \frac{16}{40}$ _____

6. $\frac{12}{39}, \frac{20}{65}$ _____

Find a ratio equivalent to each ratio. Then use the ratios to write a proportion.

7. $\frac{7}{31}$ _____

8. $\frac{24}{51}$ _____

9. $\frac{6}{29}$ _____

10. $\frac{14}{23}$ _____

11. $\frac{17}{39}$ _____

12. $\frac{25}{32}$ _____

Complete each table of equivalent ratios.

13. 4 CDs to 10 tapes

CDs	2		10		28
Tapes		10		30	

14. 9 triangles per 6 circles

Triangles		9		30	
Circles	2		8		50

Find two ratios equivilent to each given ratio.

15. 10:21 _____

16. 15:8 _____

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

18. $\frac{24}{11}$ _____

Name _____ Date _____ Class _____

LESSON 5-4

Problem Solving

Identifying and Writing Proportions

Write the correct answer.

1. Jeremy earns $234 for 36 hours of work. Miguel earns $288 for 40 hours of work. Are the pay rates of these two people proportional? Explain.

_____

2. Marnie bought two picture frames. One is 5 inches by 8 inches. The other is 15 inches by 24 inches. Are the ratios of length to width proportional for these frames? Explain.

_____

3. The ratio of adults to children at a picnic is 4 to 5. The total number of people at the picnic is between 20 and 30. Write an equivalent ratio to find how many adults and children are at the picnic.

_____

4. A recipe for fruit punch calls for 2 cups of pineapple juice for every 3 cups of orange juice. Write an equivalent ratio to find how many cups of pineapple juice should be used with 12 cups of orange juice.

_____

Choose the letter for the best answer.

5. A clothing store stocks 5 blouses for every 3 pairs of pants. Which ratio is proportional for the number of pairs of pants to blouses?

   A 15:9 **C** 12:20

   B 3:8 **D** 18:25

6. To make lemonade, you can mix 4 teaspoons of lemonade powder with 16 ounces of water. What is the ratio of powder to water?

   F 4:32 **H** 24:64

   G 32:8 **J** 32:128

7. The town library is open 4 days per week. Suppose you use the ratio of days open to days in a week to find the number of days open in 5 weeks. What proportion could you write?

   A $\frac{4}{7} = \frac{20}{25}$ **C** $\frac{4}{7} = \frac{20}{28}$

   B $\frac{7}{4} = \frac{21}{12}$ **D** $\frac{4}{7} = \frac{20}{35}$

8. At a factory, the ratio of defective parts to total number of parts is 3:200. Which is an equivalent ratio?

   F 6:1000 **H** 30:1000

   G 150:10,000 **J** 1,000:10,000

Name _____ Date _____ Class _____

LESSON 5-5

Practice A

Solving Proportions

Find the cross products.

1. $\frac{1}{2} = \frac{x}{8}$ _____

2. $\frac{a}{6} = \frac{7}{9}$ _____

3. $\frac{5}{b} = \frac{8}{10}$ _____

Use cross products to solve each proportion.

4. $\frac{2}{5} = \frac{x}{10}$ _____

5. $\frac{1}{3} = \frac{z}{15}$ _____

6. $\frac{3}{8} = \frac{s}{16}$ _____

7. $\frac{4}{r} = \frac{1}{4}$ _____

8. $\frac{10}{h} = \frac{5}{6}$ _____

9. $\frac{1}{d} = \frac{4}{12}$ _____

10. $\frac{w}{9} = \frac{6}{18}$ _____

11. $\frac{t}{8} = \frac{3}{4}$ _____

12. $\frac{k}{5} = \frac{9}{15}$ _____

13. $\frac{3}{6} = \frac{1}{f}$ _____

14. $\frac{2}{7} = \frac{6}{d}$ _____

15. $\frac{2}{9} = \frac{4}{c}$ _____

16. $\frac{a}{20} = \frac{15}{10}$ _____

17. $\frac{21}{k} = \frac{7}{4}$ _____

18. $\frac{3}{8} = \frac{n}{40}$ _____

19. Yolanda drove 50 miles in 2 hours at a constant speed. Use a proportion to find how long it would take her to drive 150 miles at the same speed.

_____

Name _____ Date _____ Class _____

LESSON 5-5

Practice B

Solving Proportions

Use cross products to solve each proportion.

1. $\frac{2}{5} = \frac{x}{35}$ _____

2. $\frac{7}{r} = \frac{1}{4}$ _____

3. $\frac{k}{75} = \frac{9}{15}$ _____

4. $\frac{1}{3} = \frac{z}{27}$ _____

5. $\frac{2}{11} = \frac{12}{d}$ _____

6. $\frac{24}{s} = \frac{4}{12}$ _____

7. $\frac{w}{42} = \frac{6}{7}$ _____

8. $\frac{t}{54} = \frac{2}{9}$ _____

9. $\frac{3}{8} = \frac{a}{64}$ _____

10. $\frac{17}{34} = \frac{7}{f}$ _____

11. $\frac{15}{h} = \frac{5}{6}$ _____

12. $\frac{4}{15} = \frac{36}{c}$ _____

13. $\frac{z}{25} = \frac{12}{5}$ _____

14. $\frac{36}{k} = \frac{9}{4}$ _____

15. $\frac{5}{14} = \frac{n}{42}$ _____

16. $\frac{8}{9} = \frac{40}{m}$ _____

17. $\frac{7}{c} = \frac{63}{54}$ _____

18. $\frac{24}{21} = \frac{s}{35}$ _____

19. $\frac{e}{22} = \frac{6}{15}$ _____

20. $\frac{3}{v} = \frac{12}{17}$ _____

21. $\frac{5}{14} = \frac{4}{a}$ _____

22. Eight oranges cost $1.00. How much will 5 dozen oranges cost?

_____

23. A recipe calls for 2 eggs to make 10 pancakes. How many eggs will you need to make 35 pancakes?

_____