Name _____ Date _____ Class _____

Additional Practice

1. Among American physicians, more are male than female. However, the ratio varies in different age groups. Use the table to answer parts (a)–(d).

American Physicians, Beginning of 1998

	< 35	35–44	45–54	55–64
Male	84,445	152,210	142,314	92,260
Female	49,395	61,192	33,180	12,022

Source: AMA cited in *The World Almanac and Book of Facts, 1999,* page 881.

Approximate each of the following ratios in three equivalent forms. Begin by rounding the given data to the nearest 5,000 to form the first ratios.

The ratio of male to female doctors in the

a. under 35 age group;   **b.** 35–44 age group;

c. 45–54 age group;   **d.** 55–64 age group.

2. Use the approximate ratio data on male and female physicians in example 1 to answer these questions. Express each answer in two equivalent forms—one a fraction and one a percent.

What fraction of physicians are females in the

a. under 35 years age group?   **b.** 35–44 age group?

c. 45–54 age group?   **d.** 55–64 age group?

3. Josh jogs an average of 8 miles per week for three weeks.

a. At this rate, how many miles will he jog in 52 weeks?

b. How many miles will he need to jog during the fourth week to bring his four-week average to 10 miles per week?

Additional Practice *(continued)*

4. Tony can type at a constant rate of 55 words per minute.

  a. Write an equation for the number of words W Tony can type in T minutes.

  b. How many words can Tony type in 20 minutes?

  c. If Tony has a half hour to type a 1,600-word essay, will he have time to type the entire essay? Explain your reasoning.

5. The following table shows caffeine content of 12-ounce cans for five popular soft drinks.

Caffeine Content in Milligrams

	12-Ounce Can	20-Ounce Bottle
Diet Sun Drop	69	
Mountain Dew	55	
Dr. Pepper	41	
Pepsi Cola	38	
Coca-Cola	34	
Barq's Root Beer	22	

Source: National Soft Drink Associates as given in "Soft Drinks Hard Facts"
The Washington Post/Health/February 27, 2001, page 12.

  a. Complete entries in the column giving caffeine content of 20-ounce bottles for each soft drink.

  b. Compare caffeine content in the soft drinks above. In each case, use the exact data first. Then give a simpler ratio that is exactly or nearly equivalent to the first.

    i. Diet Sun Drop to Barq's Root Beer

    ii. Mountain Dew to Dr. Pepper

    iii. Mountain Dew to Coca Cola

Additional Practice *(continued)*

6. When people predict the chances that some athlete, team, racehorse, or car will win a competition, they often express their guess as a statement about the "odds against" winning. For example, they might predict that odds on the Yankees winning the World Series are 7 to 2, meaning that the probability of that event is $\frac{2}{9}$. A horse that leaves the starting gate with odds 11 to 5 is predicted to have probability $\frac{5}{16}$ of winning.

a. What is the probability that a team will win a game if the reported odds are 6 to 4? 8 to 5? 3 to 5? A to B?

b. What simpler odds statements could be given if the reported odds are 12 to 9? 8 to 2? 15 to 6?

c. What odds would be stated if the probability of winning a contest is $\frac{2}{3}$? $\frac{5}{8}$? $\frac{4}{13}$? $\frac{A}{B}$?

7. A veterinarian's clinic has a patient load of 150 cats and dogs. The ratio of cats to dogs is 4 to 8. How many patients are cats and how many are dogs? Explain your reasoning.

8. On a map, 1 centimeter = 50 kilometers. What is the actual distance between two towns that are 3.5 centimeters apart on the map? Explain your reasoning.

Additional Practice *(continued)*

9. The numbers in the table are projections based on a 1993 survey of 10,000 households. The survey counted anyone 7 years old or older who participated in an activity more than once per year. Be ready to explain your strategies for answering parts (a)–(d).

Participation in Sports Activities in the United States

Activity	Males	Females	Ages 12–17	Ages 55–64
Bicycle	24,562,000	23,357,000	8,794,000	2,030,000
Camping	23,165,000	19,533,000	5,336,000	2,355,000
Exercise walking	21,054,000	43,373,000	2,816,000	7,782,000
Fishing	30,449,000	14,885,000	4,945,000	3,156,000
Swimming	27,713,000	33,640,000	10,874,000	2,756,000
Total in group	**111,851,000**	**118,555,000**	**21,304,000**	**20,922,000**

Source: National Sporting Goods Association, as found in the *Statistical Abstract of the United States 1995,* Published by the Bureau of the Census, Washington DC, p. 260.

a. Why don't the numbers in the columns add to the given totals?

b. Is it fair to say that exercise walking is about twice as popular among females as among males? Use fractions, ratios, percents, or differences to support or contradict that claim.

c. Is it fair to say that swimming is about 4 times as popular among young people (ages 12–17) as among older people (ages 55–64)? Use fractions, ratios, percents, or differences to support or contradict that claim.

d. Can you compare the participation of teenage boys in these activities to the participation of older-adult women by using the data in the table?

e. The U.S. population in 1993 was about 258 million. In 2000 it was about 281 million. What projections of male and female participants in the five popular sports would you make for 2000?