Customized Activity Book

For

JANET RICHARDSON

Kid's College is an online program that diagnoses a student's mastery of essential skills in reading, language arts and mathematics. Once diagnosed, the student is provided instructional practice on any foundational skills not mastered at earlier grade levels, then quickly brought up to the instructional skills at their current grade level.

The online video games within Kid's College both motivate and offer an incentive for students to stay on task and perform more accurately. Student performance is continually monitored, providing teachers, parents and administrators with snapshots of each student's progress.

Based on the results of a recent assessment in Kid's College, this customized Activity Book has been generated to boost your student's performance in skill strands that need improvement.

Mathematics:
Fractions

The following section of this customized textbook includes material from these skill areas:

Skill Description

2299: understand concepts of rate and rate of change

2443: Fractions

6a Develop an understanding of fractions and mixed numbers using physical materials and pictorial and numerical representations. Naming, ordering, comparing

2445: relate fractions to decimals

2446: represent fractions in equivalent forms

6a Develop an understanding of fractions and mixed numbers using physical materials and pictorial and numerical representations. Naming, ordering, comparing

6b Develop an understanding of fractions and mixed numbers using physical materials and pictorial and numerical representations. Identifying equivalent forms (common denominators)

6c Develop an understanding of fractions and mixed numbers using physical materials and pictorial and numerical representations. Identifying lowest terms (simplification)

11 Identify alternative representations of fractions, mixed numbers, decimals, and percents.

2495: solve addition and subtraction problems with fractions

7 Demonstrate proficiency in adding and subtracting fractions with common denominators.

2509: solve division problems with fractions

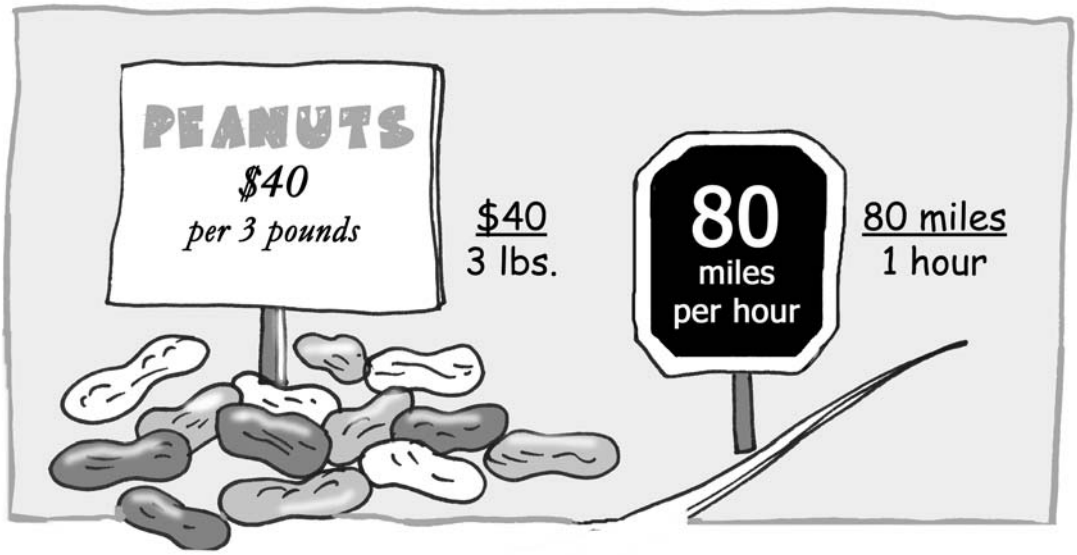
8 Multiply and divide fractions.

2513: solve multiplication problems with fractions

8 Multiply and divide fractions.

Rates

A **rate** is a ratio that compares quantities of different units.



Reducing Rates to Find Quantities

Charlie paid $12.80 for a 4-pound bag of trail mix.

Get Sharp Tip #16
The word you use to compare two units in a ratio is **per**.

Since you know the ratio (rate), you can find the cost by reducing the ratio to lowest terms.

Divide both terms of the ratio by 4. (You use 4 because the second term of the new ratio must be 1, so you must use the number that will yield a quotient of 1 when it goes into 4.)

$$\frac{\$\ 12.80 \div 4}{4 \div 4} = \frac{\$\ 3.20}{1}$$

It costs $ 3.20 per pound!

Using Equivalent Ratios to Find Other Rates

How much will 20 pounds of trail mix cost?

$$\frac{\$12.80 \times 5}{4 \times 5} = \frac{\$\ 64.00}{20}$$

Since you know the ratio (rate), you can find other costs by writing equivalent ratios.

Multiply both terms of the ratio by 5.
(You use 5 because the second term of the new ratio must be 20, so you must choose the number that will yield a product of 20 when multiplied by 4.)

It costs $ 64.00 per 20 pounds!

Time Zones

As Earth turns, the sun shines on different parts of the sphere at different times. Because of this, we have divided Earth into several time zones.

The line of 0° longitude (the Prime Meridian) goes through Greenwich, England. Earth's time zones are all related to the time in Greenwich, called Greenwich time. From Greenwich, an hour is subtracted as you travel west through each time zone. As you travel east from Greenwich, an hour is added to the time.

When it is noon in Greenwich, England . .

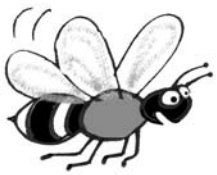
It is 7 a.m. (5 time zones west)	in New York City, NY
it is 4 a.m. (8 time zones west)	in Los Angeles, CA
it is 3 a.m. (9 time zones west)	in Anchorage, AK
it is 1 p.m. (1 time zone east)	in Paris, France
it is 3 p.m. (3 time zones east)	in Moscow, Russia
it is 8 p.m. (8 time zones east)	in Hong Kong
it is 9 p.m. (9 time zones east)	in Tokyo, Japan

and . . . it is midnight (12 time zones east or west)
on the International Date Line (180° E or W longitude)

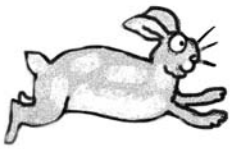
Measuring Rate

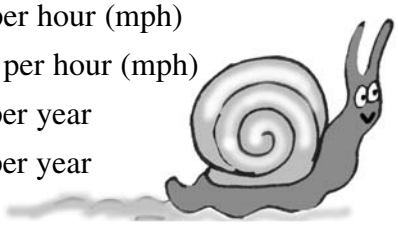
Rate is a measure of an amount compared to something else. Often it is an amount compared to time. Rate can tell how far something moves or how often something occurs over a certain period of time, such as a second, minute, hour, week, year, and so on. Speed is described as a rate.

Some Interesting Rates !



186,282,397 miles per second (mps)	speed of light
66 miles per hour (mph)	speed a sailfish can swim
65 kilometers per hour (kph)	speed a mallard duck can fly
12 miles per hour (mph)	speed of a running rabbit
11.6 kilometers per hour (kph)	speed a honeybee can fly
0.03 miles per hour (mph)	speed a snail can crawl
261.8 miles per hour (mph)	speed of Japan's fast Nozomi 500 train
26 pounds per year	amount of chocolate eaten by average Swiss person
48 gallons per year	amount of soda pop drunk by average American





Fractions

A **fraction** is any number written in the form of $\frac{a}{b}$

FRACTION ACTION

Fraction comes from the Latin word *fractio*, meaning *broken parts*. ***Fraction*** means ***part of a set*** or ***part of a whole***. A fraction is written in a way that compares two numbers or amounts.

The top number (a) is the **numerator.**
The numerator tells the *number of parts being counted,* in this case, 3 missing pieces.

Write the fraction like this: $\frac{3}{8}$ (a) *missing pieces* / (b) *pieces in the whole pizza*

The bottom number (b) is the **denominator.**
The denominator tells *the number of parts in the whole,* or 8 pieces of pizza.

Proper & Improper Fractions

In a **proper fraction**, the numerator is *smaller* than the denominator. $\frac{2}{9}$

In an **improper fraction**, the numerator is *larger* than the denominator. The value of the fraction is always *equal to* or *greater than* one. $\frac{12}{7}$

Reading and Writing Fractions

$\frac{7}{8}$ reads ***seven-eighths***

$\frac{11}{12}$ reads ***eleven-twelfths***

$\frac{2}{3}$ reads ***two-thirds***

$\frac{14}{20}$ reads ***fourteen-twentieths***

$\frac{3}{100}$ reads ***three-hundredths***

$\frac{6}{9}$ reads ***six-ninths***

A fraction is also a way of writing a division problem.

$\frac{3}{24}$ means $3 \div 24$

(three divided by twenty-four)

"FIGURING" OUT DECIMALS

Tamara is working on perfecting her figures for a skating competition. They must be precise for the judges. Numbers with decimals can be tricky, too. You can practice decimals by finding the decimal number in Jenny's figure 8 that matches the problem. Circle each one with the correct color.

_____ 1. one-tenth more than 7 RED

_____ 2. five-hundredths more than 6.3 BLUE

_____ 3. the difference between 10.8 and 10.2 PINK

_____ 4. one hundred plus twelve-hundredths BLACK

_____ 5. 3 tenths more than 6 hundredths YELLOW

_____ 6. 0.05 plus 0.04 PURPLE

_____ 7. 9 tenths less than ten TAN

_____ 8. two-tenths more than 14 ORANGE

_____ 9. 5 hundredths more than 2 BROWN

_____ 10. one-tenth less than one TAN

_____ 11. two-tenths plus four-hundredths SILVER

_____ 12. 9 tenths plus 9 hundredths GREEN

_____ 13. ten plus twelve-hundredths RED

_____ 14. eight-hundredths more than eight BLUE

_____ 15. one-tenth less than ten GREEN

_____ 16. two-tenths less than nine PINK

_____ 17. ten less than 12.4 PURPLE

_____ 18. 0.004 more than 0.005 RED

_____ 19. ten less than 10.22 ORANGE

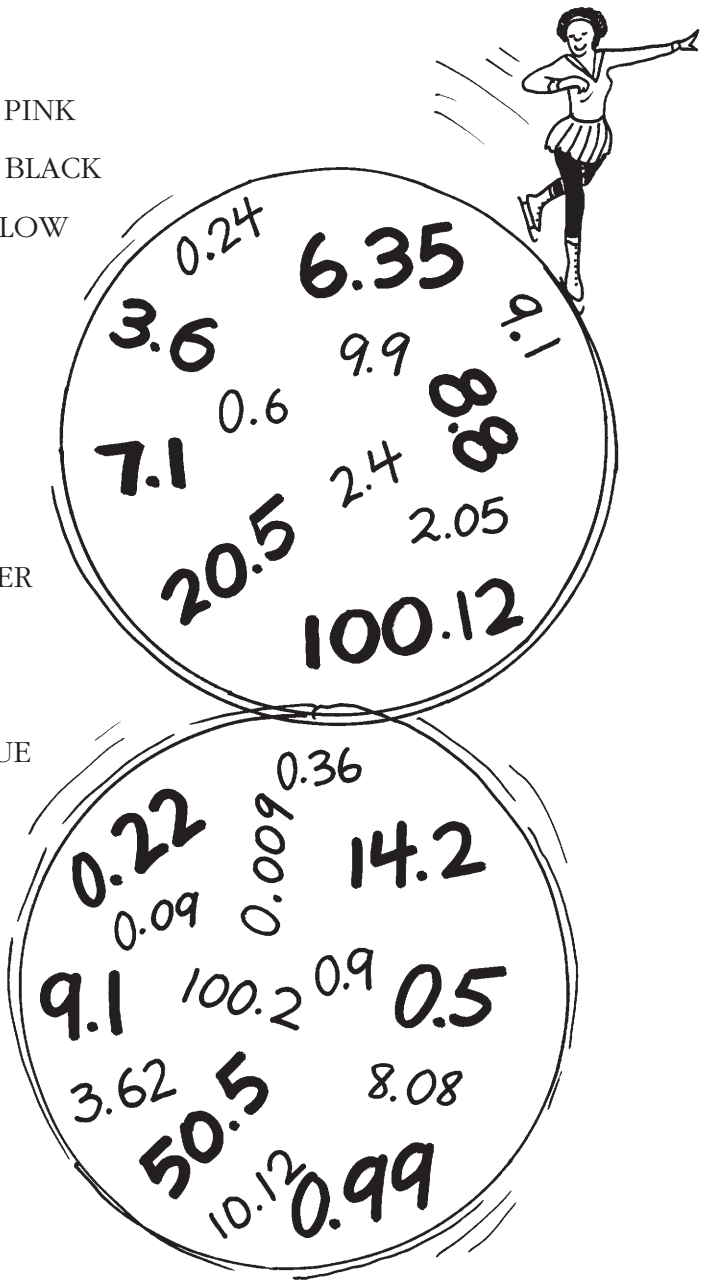
_____ 20. 0.6 more than three YELLOW

_____ 21. two-tenths more than 0.3 BLUE

_____ 22. 5 tenths less than fifty-one GREEN

_____ 23. five-tenths less than 21 SILVER

_____ 24. one hundred plus two-tenths PURPLE



WATCH THAT PUCK!

Olympic Fact

The 1998 Winter Olympics in Japan were the first Games that permitted women to compete in ice hockey.

These fans are gathered for an exciting, high-speed ice hockey game. All the action in the game is focused on a little rubber disc that moves so fast that often it is hard to tell where it is and which team has it! An exciting Olympic moment for the United States was in 1980 when the U.S. team defeated Finland to win its first gold medal in 20 years.

Pay attention to these fans to practice your fraction-hunting skills. Write a fraction to fill each blank.

1. _____ of the fans are holding balloons.
2. _____ of the fans are holding flags.
3. _____ of the flags have words on them.
4. _____ of the flags are black.
5. _____ of the flags have no words.
6. _____ of the fans are holding cups.
7. _____ of the cups have 2 straws.
8. _____ of the cups have no straws.
9. _____ of the fans are wearing boots.
10. _____ of the shoes and boots have black on them.
11. _____ of the fans are wearing earmuffs.
12. _____ of the fans are wearing hats.
13. _____ of the shoes and boots have laces.
14. _____ of the hands are wearing mittens or gloves.
15. _____ of the fans are wearing scarves.
16. _____ of the fans are hatless.
17. _____ of the hats have feathers.
18. _____ of the fans have mustaches.
19. _____ of the balloons are held by the girl with pigtails.

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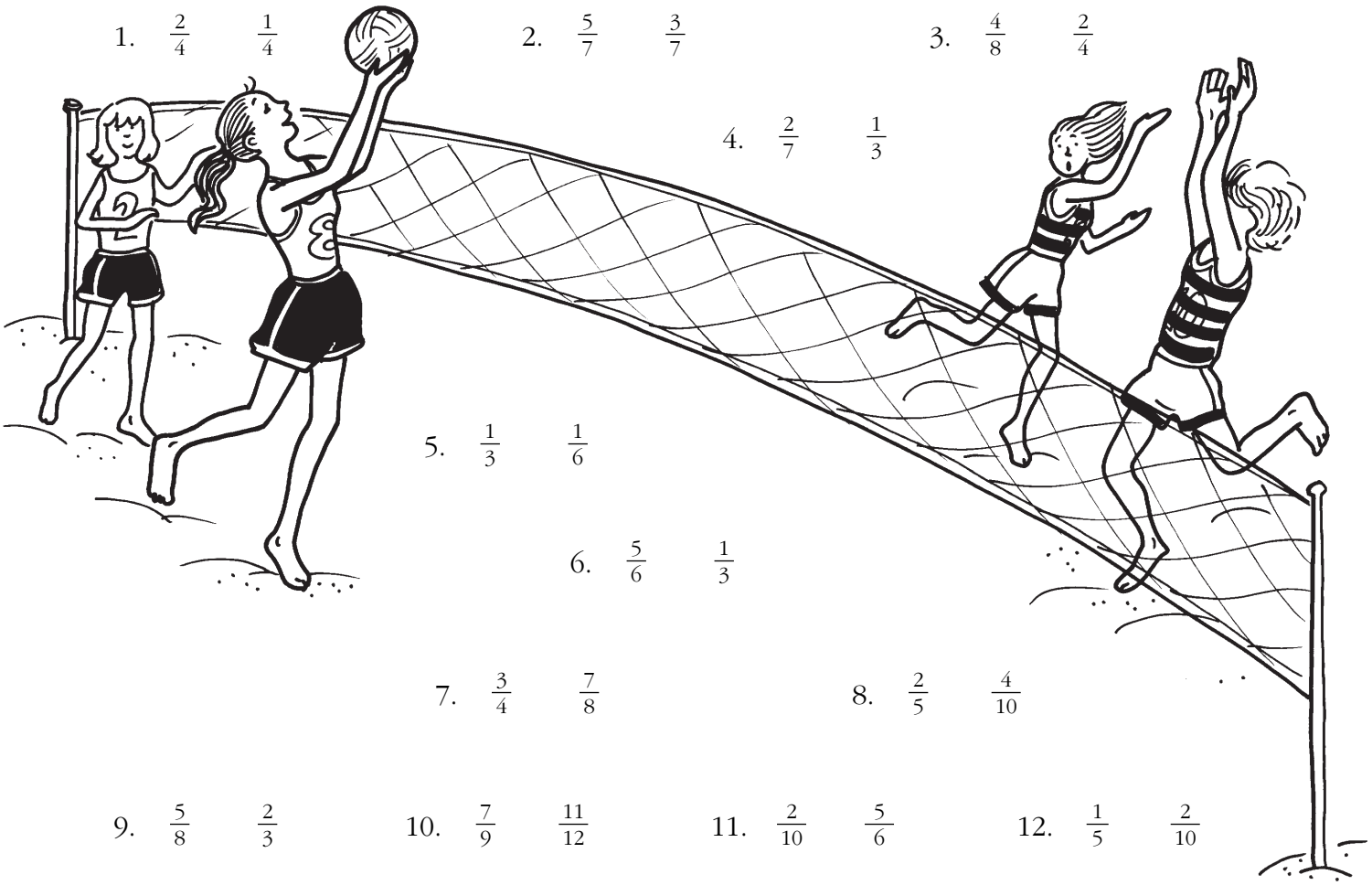
OVER THE NET

Olympic Fact

In beach volleyball, each team has only two players. They play barefoot in the sand.

Beach volleyball began in the 1940s on the beaches of California. It was played for fun at first, but now it is a serious professional sport. It did not gain a place at the Olympic Games until 1996, when the U.S. men's teams won the gold and silver medals.

Compare each set of fractions below to see which is greater. Circle the largest fraction. If the fractions are equal, circle them both!



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

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

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

4. $\frac{2}{7}$ $\frac{1}{3}$

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

6. $\frac{5}{6}$ $\frac{1}{3}$

7. $\frac{3}{4}$ $\frac{7}{8}$

8. $\frac{2}{5}$ $\frac{4}{10}$

9. $\frac{5}{8}$ $\frac{2}{3}$

10. $\frac{7}{9}$ $\frac{11}{12}$

11. $\frac{2}{10}$ $\frac{5}{6}$

12. $\frac{1}{5}$ $\frac{2}{10}$

Rewrite the fractions in order from smallest to largest.

13. $\frac{1}{2}$ $\frac{2}{5}$ $\frac{1}{4}$

14. $\frac{3}{18}$ $\frac{5}{6}$ $\frac{2}{3}$

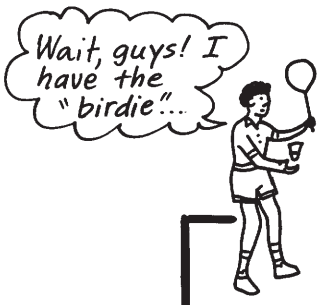
15. $\frac{2}{5}$ $\frac{6}{7}$ $\frac{5}{9}$

_____ _____ _____

Answer key page 27, unit 249

LOST!

Badminton may seem like a rather easy sport where you just hit the "birdie" around at a slow pace. Actually, it is the world's fastest racket sport. The "birdies" are really called shuttlecocks, and they travel as fast as 200 miles per hour. Players must be very quick, strong, and agile to compete.



Pete has gotten separated from the badminton team on the way to the competition. To help him join his teammates, compare the fractions in each box. Color the boxes that have the correct sign (<, >, or =) between the fractions. If you do this correctly, you will have colored a path for Pete.

$\frac{8}{12} = \frac{2}{3}$	$\frac{11}{6} < \frac{5}{3}$	$\frac{2}{5} > \frac{3}{4}$	$\frac{3}{4} < \frac{3}{6}$
$\frac{2}{4} = \frac{5}{10}$	$\frac{6}{3} = \frac{8}{4}$	$\frac{4}{5} < \frac{7}{10}$	$\frac{2}{9} > \frac{1}{2}$
$\frac{2}{5} > \frac{5}{10}$	$\frac{8}{4} = \frac{12}{6}$	$\frac{7}{4} = \frac{6}{3}$	$\frac{2}{3} = \frac{4}{6}$
$\frac{7}{16} = \frac{1}{4}$	$\frac{20}{25} = \frac{4}{5}$	$\frac{7}{12} = \frac{14}{24}$	$\frac{0}{2} = \frac{0}{4}$

THE LONGEST JUMPS

It sounds pretty hard! An athlete runs down a short path and jumps as far as possible, landing into a pit of sand. A measurement is taken from the beginning of the jump to the impression the body leaves in the sand. If the athlete falls backward from where the feet land, the measurement will be shorter than desired!

Here are some measurements of long jumps from athletes of all ages. They are written as improper fractions. Change them into mixed numerals.

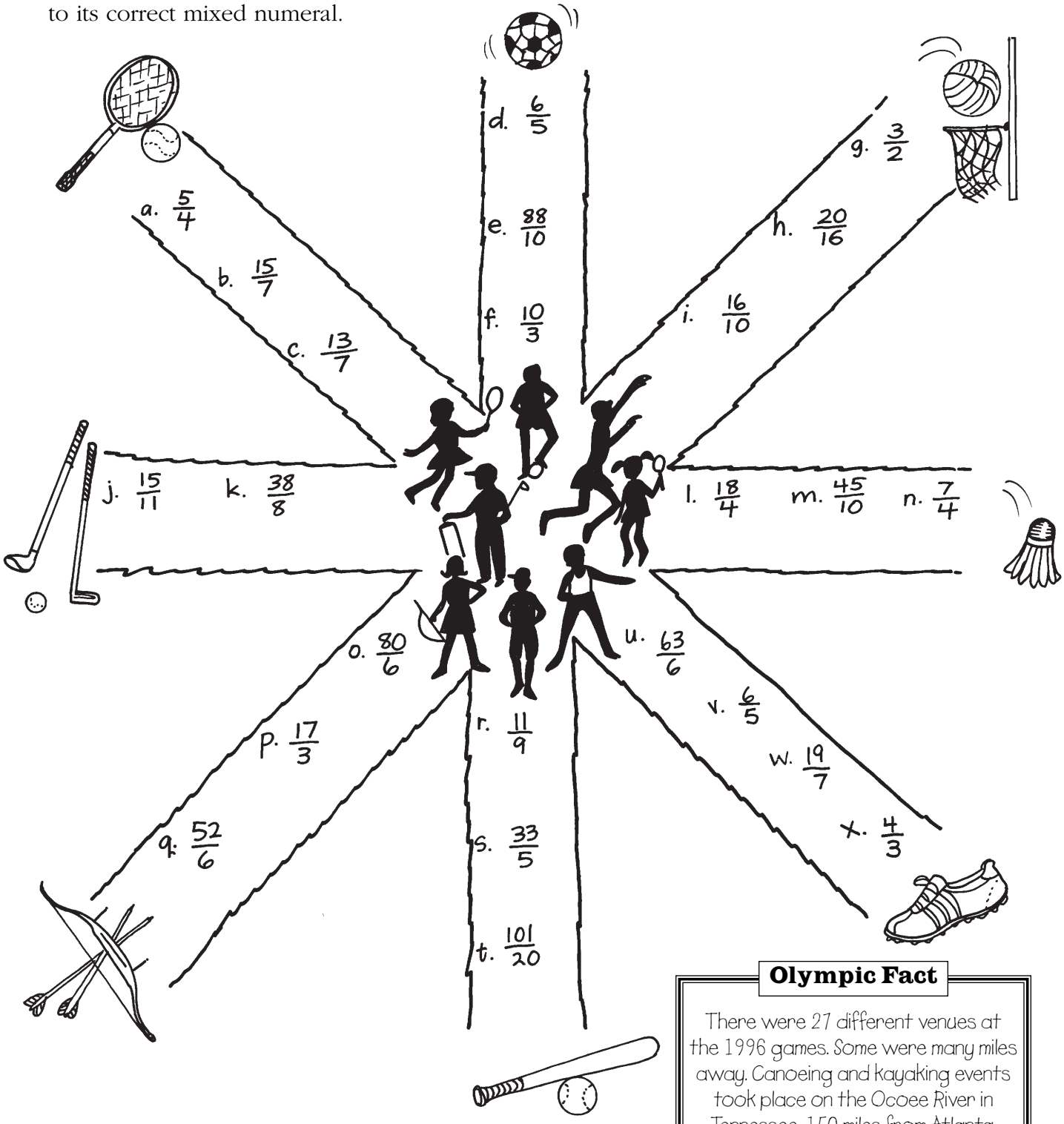
Olympic Fact

U.S. track and field athlete Jackie Joyner-Kersee won the gold medal in 1988 with a jump of 24 ft $3\frac{1}{2}$ in. U.S. jumper Carl Lewis won the gold medal in the long jump at the last four Olympic Games: 1984, 1988, 1992, & 1996.

1. Carl $\frac{57}{2}$ feet = _____
2. Lutz $\frac{57}{6}$ feet = _____
3. Jackie $\frac{97}{4}$ feet = _____
4. Heike $\frac{47}{2}$ feet = _____
5. Amber $\frac{32}{5}$ feet = _____
6. Yvette $\frac{85}{8}$ feet = _____
7. Arnie $\frac{88}{3}$ feet = _____
8. Ellery $\frac{83}{4}$ feet = _____
9. James $\frac{49}{4}$ feet = _____
10. Randy $\frac{109}{4}$ feet = _____
11. Tatyana $\frac{71}{3}$ feet = _____
12. Mary $\frac{63}{4}$ feet = _____
13. Bob $\frac{165}{6}$ feet = _____
14. Albert $\frac{129}{12}$ feet = _____
15. Jenny $\frac{101}{4}$ feet = _____
16. Tommy $\frac{14}{3}$ feet = _____

GETTING TO VENUES

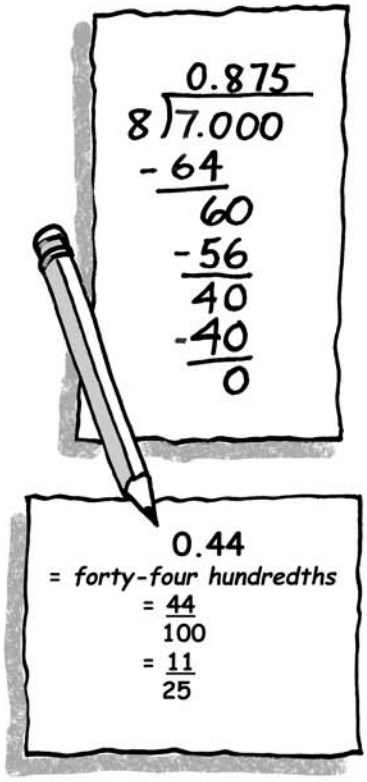
A venue is a place where one of the Olympic events is held. There are many venues at each Olympic Games. These Olympic athletes are trying to get to their proper venues, but their paths are blocked. Remove the obstacles along the paths by changing each improper fraction to its correct mixed numeral.



Olympic Fact

There were 27 different venues at the 1996 games. Some were many miles away. Canoeing and kayaking events took place on the Ocoee River in Tennessee, 150 miles from Atlanta.

Fractions & Decimals



How to Write a Fraction as a Decimal

Step 1: Divide the numerator by the denominator.

Step 2: Write a zero to hold the ones place (if there is no number in that place).

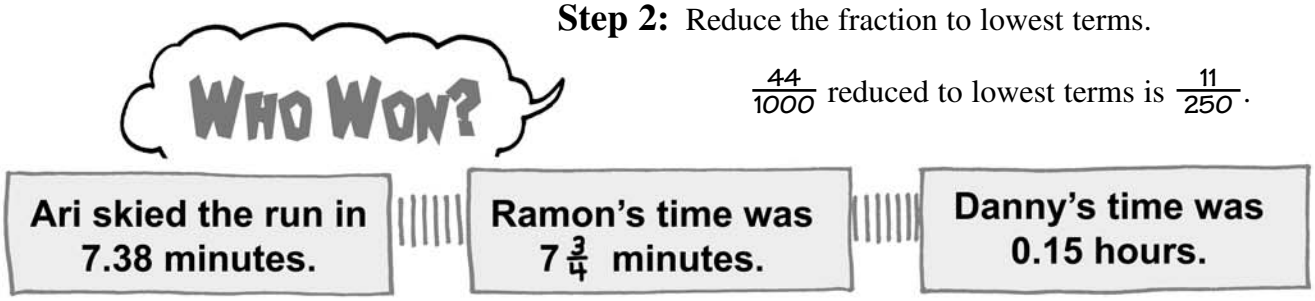
$$\frac{7}{8} = 0.875$$

How to Write a Decimal as a Fraction

Step 1: Remove the decimal point and write the number as the numerator. The denominator is 10 or a multiple of 10, depending what place the last digit of the decimal occupied. For instance, in 0.044, the last digit is a thousandth.

Step 2: Reduce the fraction to lowest terms.

$\frac{44}{1000}$ reduced to lowest terms is $\frac{11}{250}$.



To solve a problem that has some terms in decimals and others in fractions, change everything to decimals. Then compare the amounts.

7.38 min. = 7.38 min.
$7\frac{3}{4}$ min. = 7.75 min.
0.15 hours = 0.15 x 60 = 9 min.

Ari is the fastest.