Name _____ Class _____ Date _____

Reteaching 5-4

Multiplying and Dividing Fractions

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

$3\frac{2}{3} \cdot 1\frac{4}{5} = \frac{11}{3} \cdot \frac{9}{5}$ Change to improper fractions.

$= \frac{11}{\cancel{3}_{1}} \cdot \frac{\overset{3}{\cancel{9}}}{5}$ Divide the common factors.

$= \frac{33}{5} = 6\frac{3}{5}$ Simplify.

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

$-1\frac{1}{2} \div 2\frac{1}{4} = -\frac{3}{2} \div \frac{9}{4}$ Change to improper fractions.

$= -\frac{\overset{1}{\cancel{3}}}{\underset{1}{\cancel{2}}} \cdot \frac{\overset{2}{\cancel{4}}}{\underset{3}{\cancel{9}}}$ Multiply by the reciprocal.

$= -\frac{1}{1} \cdot \frac{2}{3}$ Divide the common factors.

$= -\frac{2}{3}$ Simplify.

Check your sign with the original problem. A negative times a positive has a negative product.

Find each product.

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

2. $2\frac{1}{5} \cdot \left(-1\frac{1}{11}\right) =$ _____

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

4. $5\frac{1}{7} \cdot 4\frac{2}{3} =$ _____

Find each quotient.

5. $-\frac{6}{11} \div \frac{4}{11} =$ _____

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

7. $-4\frac{1}{5} \div \left(-1\frac{3}{4}\right) =$ _____

8. $-6\frac{1}{8} \div \frac{7}{3} =$ _____

Name _____ Class _____ Date _____

Reteaching 5-6

Work Backward

Jody, Karl, and Kara want to buy a pizza. Jody said she can pay half the cost. Karl said he can pay $\frac{1}{3}$ of what was left after Jody paid half. Kara said she could pay the remaining \$4. How much does the pizza cost?

Work backward.

Kara will pay \$4. This is $\frac{2}{3}$ of what is left after Jody pays half, since Karl pays $\frac{1}{3}$ and $1 - \frac{1}{3} = \frac{2}{3}$. Let h equal half the cost of the pizza.

$\frac{2}{3}h = 4$

Use the Try, Test, Revise strategy to find $h = 6$.

Thus, Jody pays \$6 and Karl pays $\frac{1}{3} \cdot 6 = \$2$.

The pizza costs $6 + 2 + 4 = \$12$.

---

1. Steven, Lisa, and Mark want to buy a pizza. Steven said he could pay twice as much as Lisa. Mark said he could pay the remaining \$3, which is \$1 less than Lisa's share. How much does the pizza cost?

   a. How much is Mark paying? _____

   b. How much is Lisa paying? _____

   c. How much is Steven paying? _____

   d. How much does the pizza cost? _____

2. On Wednesday, Olga's parents said she owed them too much money to borrow any more. On Thursday, she paid her parents \$15 she had earned babysitting. On Friday, she borrowed \$5 to go to a movie. On Saturday, she paid them the \$12 she earned babysitting. Then her debt was down to \$22. How much did she owe on Wednesday?

   _____

3. Yuki, Mollie, Brandon, and Anna share an apple pie for dessert. Brandon eats half the amount Mollie eats. Yuki eats four times as much pie as Brandon. Mollie eats $\frac{1}{4}$ of the pie. How much does Anna eat?

   _____

Name _____ Class _____ Date _____

Practice 6-1

Ratios and Unit Rates

Find each unit rate.

1. 52 mi on 2 gal _____

2. $60.00 in 8 h _____

3. 260 mi in 5 h _____

Write each ratio as a fraction in simplest form.

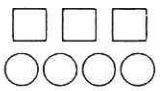
4. 8th-grade boys to 9th-grade boys _____

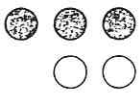
5. 8th-grade girls to 8th-grade boys _____

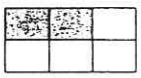
6. 8th graders to 9th graders _____

	Boys	Girls
8th Grade	26	34
9th Grade	30	22

Write three different ratios for each model.

7. 

8. 

9. 

_____ _____ _____

Write each ratio as a fraction in simplest form.

10. 14 : 24 _____

11. 2 is to 4 _____

12. 2 : 9 _____

13. 13 out of 14 _____

14. 16 is to 12 _____

15. 3 out of 12 _____

Name _____ Class _____ Date _____

Practice 6-2

Proportions

Write a proportion for each phrase. Then solve. When necessary, round to the nearest hundredth.

1. 420 ft^2 painted in 36 min; f ft^2 painted in 30 min

_____

2. 50 points scored in 4 games; p points scored in 2 games

_____

3. 3 lemons for \$.50; 15 lemons for d dollars

_____

Tell whether each pair of ratios forms a proportion.

4. $\frac{3}{4}$ and $\frac{9}{12}$ _____

5. $\frac{25}{40}$ and $\frac{5}{8}$ _____

6. $\frac{9}{16}$ and $\frac{1}{3}$ _____

7. $\frac{2}{3}$ and $\frac{7}{8}$ _____

Solve each proportion. Where necessary, round to the nearest tenth.

8. $\frac{4}{5} = \frac{20}{x}$ _____

9. $\frac{15}{30} = \frac{n}{34}$ _____

10. $\frac{h}{36} = \frac{21}{27}$ _____

11. $\frac{11}{6} = \frac{f}{60}$ _____

12. $\frac{r}{23} = \frac{17}{34}$ _____

13. $\frac{36}{j} = \frac{7}{20}$ _____

14. Jon can do 12 math problems in 45 min. How long should it take Jon to do 20 math problems?

_____

Name _____ Class _____ Date _____

Practice 6-3

Similar Figures and Scale Drawings

The scale of a map is $\frac{1}{2}$ in. : 8 mi. Find the actual distance for each map distance.

1. 2 in.

_____

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

_____

3. 5 in.

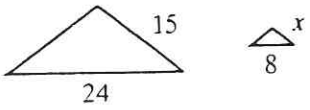
_____

4. 1 in.

_____

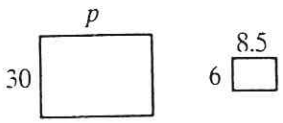
Each pair of figures is similar. Find the missing length. Round to the nearest tenth where necessary.

5.



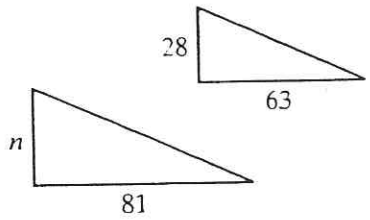
$x =$ _____

6.



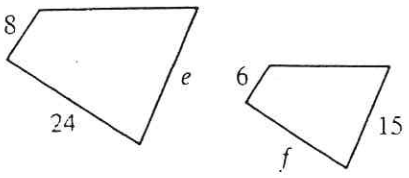
$p =$ _____

7.



$n =$ _____

8.



$e =$ _____ $f =$ _____

A scale drawing has a scale of $\frac{1}{4}$ in. : 6 ft. Find the length on the drawing for each actual length.

9. 18 ft

_____

10. 66 ft

_____

11. 24 ft

_____

Name _____ Class _____ Date _____

Practice 6-4

Probability

Find each probability for choosing a letter at random from the word PROBABILITY.

1. $P(\text{I})$ _____

2. $P(\text{L})$ _____

3. $P(\text{T or B})$ _____

4. $P(\text{not O})$ _____

A child is chosen at random from the Williams and Hernandez families. Find the odds in favor of each of the following being chosen.

5. a girl

_____

6. a Williams

_____

7. not a Hernandez boy

_____

8. a Hernandez

_____

	Williams Family	Hernandez Family
Girls	2	5
Boys	4	3

A container holds 7 orange, 14 red, 21 purple, 42 green, and 84 blue marbles. A marble is drawn at random from the container. Find each probability.

9. $P(\text{purple or green})$

_____

10. $P(\text{red})$

_____

11. $P(\text{not purple})$

_____

12. $P(\text{blue, red, or orange})$

_____

Find the odds in favor of each selection when a marble is chosen at random from the container described above.

13. green _____

14. blue _____

15. not orange _____

16. not purple or green _____

Name _____ Class _____ Date _____

Practice 6-5

Fractions, Decimals, and Percents

Write each decimal or fraction as a percent. Round to the nearest tenth of a percent where necessary.

1. 0.25 _____

2. 0.72 _____

3. $\frac{31}{40}$ _____

4. $\frac{403}{1.000}$ _____

5. 2.56 _____

6. 1.67 _____

7. In the United States in 1990, about one person in twenty was 75 years old or older. Write this fraction as a percent.

_____

Write each percent as a decimal.

8. 95% _____

9. 0.07% _____

10. $3\frac{1}{2}\%$ _____

11. $20\frac{1}{4}\%$ _____

Write each percent as a fraction or mixed number in simplest form.

12. 60% _____

13. 5% _____

14. 32% _____

15. 140% _____

Use >, <, or = to complete each statement.

16. 0.7 ☐ 7%

17. 80% ☐ $\frac{4}{5}$

Name _____ Class _____ Date _____

Reteaching 7-1

Solving Two-Step Equations

Solve $\frac{k}{5} - 9 = -7$.

$\frac{k}{5} - 9 = -7$	
$\frac{k}{5} - 9 + 9 = -7 + 9$	Add 9 to each side.
$\frac{k}{5} = 2$	Simplify.
$\frac{k}{5} \cdot 5 = 2 \cdot 5$	Multiply each side by 5.
$k = 10$	Simplify.

Complete the example.

1. $4n + 13 = 1$

_____	Subtract 13 from each side.
_____	Simplify.
_____	Divide each side by 4.
_____	Simplify.

Solve each equation.

2. $3x - 5 = 10$ $x =$ _____

3. $\frac{n}{2} + 10 = 7$ $n =$ _____

4. $\frac{m}{7} - 9 = -5$ $m =$ _____

5. $5w - 2 = -12$ $w =$ _____

6. $4a + 12 = -8$ $a =$ _____

7. $\frac{b}{3} + 8 = -7$ $b =$ _____

me _____ Class _____ Date _____

eteaching 7-2

Solving Multi-Step Equations

olve $6 - 2(x + 5) = 8$

$- 2(x + 5) = 8$	
$- 2x - 10 = 8$	Distribute.
$-2x - 4 = 8$	Simplify. Think of $6 - 2x$ as $6 + (-2x)$. Then subtract $6 - 10$.
$2x - 4 + 4 = 8 + 4$	Add 4 to each side.
$-2x = 12$	Simplify.
$\frac{-2x}{-2} = \frac{12}{-2}$	Divide each side by -2.
$x = -6$	Simplify.

olve each equation.

1. $3(a - 4) = 9$

_____	Distribute.
_____	Add 12 to each side.
_____	Simplify.
_____	Divide each side by 3.
_____	Simplify.

Solve each equation.

2. $n + 5n = 30$ $n =$ _____

3. $y - 4y = 33$ $y =$ _____

4. $12 = 4(b - 2)$ $b =$ _____

5. $-3(k - 4) = -6$ $k =$ _____

6. $m - 3m + 3 = 11$ $m =$ _____

7. $2(x - 9) + 5 = 1$ $x =$ _____

Name _____ Class _____ Date _____

Reteaching 7-3

Multi-Step Equations With Fractions and Decimals

Solve $0.25x - 0.4 = 1.6$

You can clear the decimals first. Since 0.25 is the decimal with the greatest number of decimal places and $0.25 = \frac{25}{100}$, multiply each side by 100.

$0.25x - 0.4 = 1.6$	
$100(0.25x - 0.4) = 100(1.6)$	Multiply each side by 100.
$25x - 40 = 160$	Distribute and simplify.
$25x - 40 + 40 = 160 + 40$	Add 40 to each side.
$25x = 200$	Simplify.
$\frac{25x}{25} = \frac{200}{25}$	Divide each side by 25.
$x = 8$	Simplify.

Solve each equation.

1. $0.8x + 2.1 = 5.3$

$x =$ _____

2. $0.5k - 3.4 = 0.1$

$k =$ _____

3. $2.7n + 4.1 = 36.5$

$n =$ _____

4. $0.96m - 1.8m = -12.6$

$m =$ _____

5. $0.7b + 6 - 0.3b = 6.8$

$b =$ _____

6. $1.4a + 3.5a - 4.3 = 44.7$

$a =$ _____

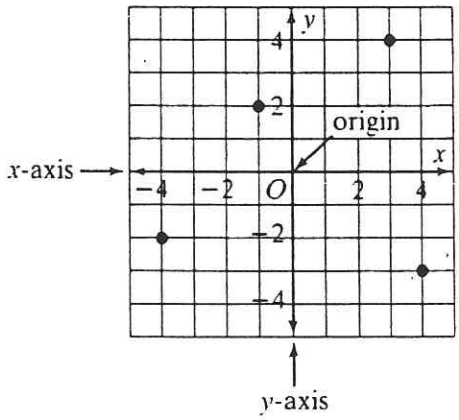
Name _____ Class _____ Date _____

Reteaching 8-1

Relations and Functions

Graph the relation. Is the relation a function? Explain.

x	y
3	4
−1	2
4	−3
−4	−2



First, plot the point (3, 4). Start at the origin, where the x-axis and the y-axis cross. Go right 3 units and up 4 units.

To plot (−1, 2), from the origin go left one unit and up 2 units.

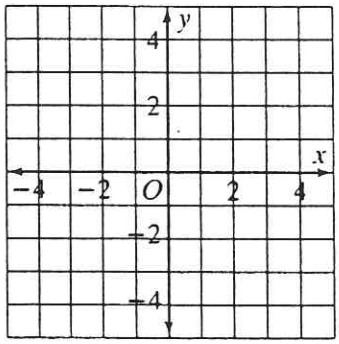
To plot (4, −3), from the origin, go right 4 units and down 3 units.

To plot (−4, −2), from the origin, go left 4 units and down 2 units.

Next, use the vertical line test. Hold a pencil vertically to the left of the graph. Slowly move it to the right. If you can find a vertical line that passes through two graphed points, then the relation is not a function. If you cannot find such a line, the relation *is* a function. This relation is a function because the vertical pencil does not pass through two points anywhere on the graph.

Graph the relation. Is the relation a function? Explain.

x	y
−4	1
1	3
4	0
1	−2

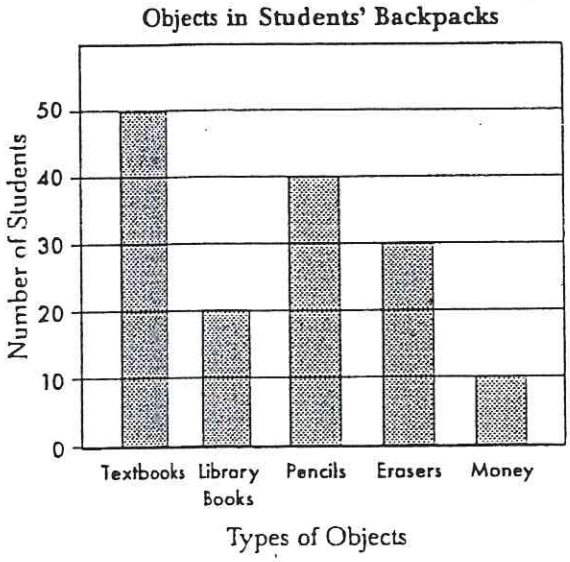


_____

_____

PRACTICE 24 • Interpreting Data (continued)

Directions: This graph shows how many students have certain objects in their backpacks. Use the graph to answer 3–5.



3. How many students have erasers in their backpacks?

   Ⓐ 10 Ⓒ 25
   Ⓑ 20 Ⓓ 30

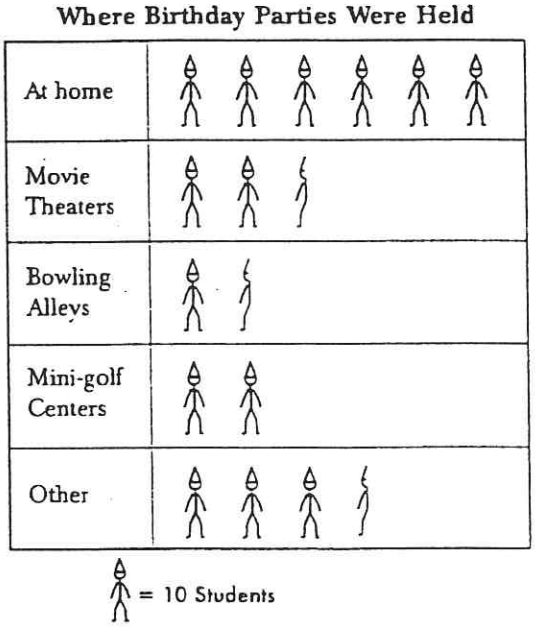
4. How many more students have pencils than library books?

   Ⓐ 5 Ⓒ 15
   Ⓑ 10 Ⓓ 20

5. Which of these was found in the least number of backpacks?

   Ⓐ money Ⓒ pencils
   Ⓑ textbooks Ⓓ erasers

Directions: This graph shows where students in grades 5 and 6 held their birthday parties last year. Use the graph to answer 6–7.



6. How many students held their parties at a bowling alley?

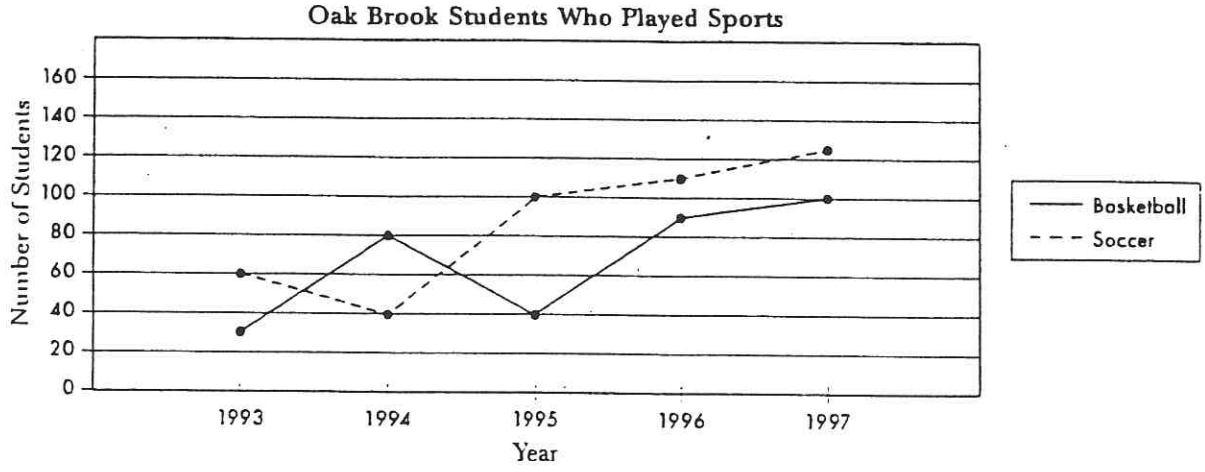
   Ⓐ 10 Ⓒ 20
   Ⓑ 15 Ⓓ 25

7. The greatest number of parties were held at –

   Ⓐ students' homes
   Ⓑ movie theaters
   Ⓒ bowling alleys
   Ⓓ mini-golf centers

PRACTICE 24 • Interpreting Data (continued)

Directions: This graph shows how many sixth-grade students in Oak Brook participated in basketball and soccer in recent years. Use the graph to answer questions 8–11.



8. In what year did more students participate in basketball than in soccer?

   (A) 1993
   (B) 1994
   (C) 1995
   (D) 1996

9. How many students played soccer in 1997?

   (A) 100
   (B) 115
   (C) 120
   (D) 125

10. How many more students played soccer than basketball in 1997?

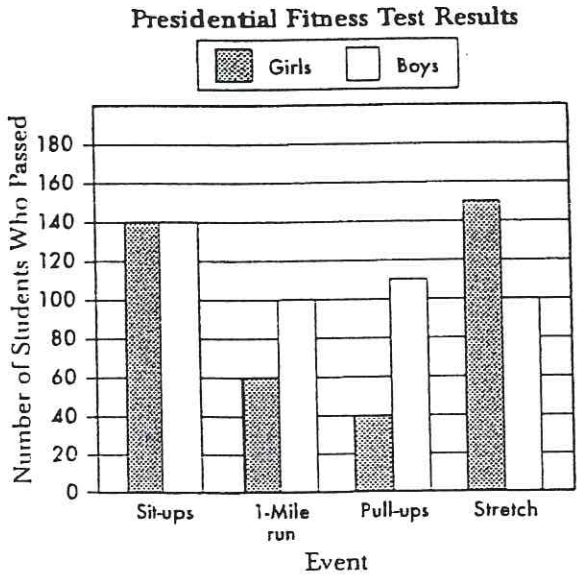
    (A) 115
    (B) 25
    (C) 15
    (D) 5

11. In which year did the fewest students play basketball?

    (A) 1993
    (B) 1994
    (C) 1995
    (D) 1996

PRACTICE 24 • Interpreting Data (continued)

Directions: This graph shows how many sixth-grade girls and boys passed the different parts of the Presidential Fitness Test. Use the graph to answer questions 12–13.



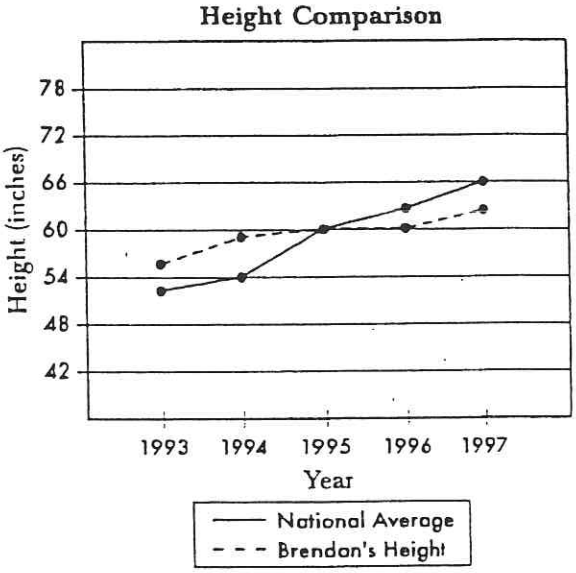
12. Which part of the test did more girls pass than boys?

Ⓐ Sit-ups
Ⓑ 1-Mile run
Ⓒ Pull-ups
Ⓓ Stretch

13. How many more boys than girls passed the pull-ups test?

Ⓐ 110
Ⓑ 70
Ⓒ 60
Ⓓ 40

Directions: This medical chart shows how Brendan's height compared with national averages over several years. Use the chart to answer questions 14–16.



14. What was the average height for boys of Brendan's age in 1996?

Ⓐ 54 in.
Ⓑ 56 in.
Ⓒ 60 in.
Ⓓ 62 in.

15. How much taller than the national average was Brendan in 1993?

Ⓐ 2 in.
Ⓑ 4 in.
Ⓒ 6 in.
Ⓓ 8 in.

16. What can you conclude about Brendan's height in 1996–1997?

Ⓐ He was taller than average.
Ⓑ He grew rapidly.
Ⓒ He was of average height.
Ⓓ He was shorter than average.