

Name: \_\_\_\_\_

Date: \_\_\_\_\_

The Four Operations 1. Solve (without a calculator).

a.  $1,035 \div 23$

b.  $492 \times 832$

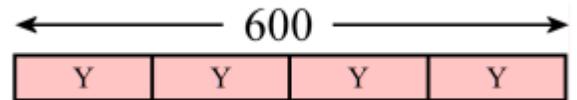
2. Solve.

a.  $x - 56,409 = 240,021$

b.  $7,200 \div Y = 90$

c.  $N \div 14 = 236$

3. Write an equation to match this model, and solve it.



4. Place parentheses into the equations to make them true.

a.  $42 \times 10 = 10 - 4 \times 70$

b.  $143 = 13 \times 5 + 6$

5. Write a single expression (number sentence) for the problem, and solve.

A store was selling movies that originally cost \$19.95 with a \$5 discount. Mia bought five of them. What was the total cost?

6. Is 991 divisible by 4? Why or why not?

7. Factor the following numbers to their prime factors.

a.  $26$   
/\

b.  $40$   
/\

c.  $59$   
/\

8. Write the numbers.

a. 70 million 16 thousand 90

b. 32 billion 232 thousand

9. Estimate the result of  $31,933 \times 305$ .

10. What is the value of the digit 8 in the number 56,782,010,000?

11. Round these numbers to the nearest thousand, nearest ten thousand, nearest hundred thousand, and nearest million.

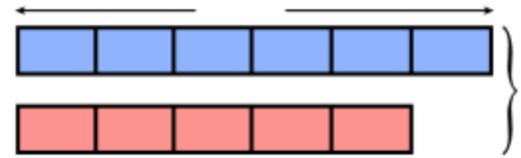
<i>number</i>	593,204	19,054,947
to the nearest 1,000		
to the nearest 10,000		
to the nearest 100,000		
to the nearest million		

12. Jack has an 8-ft long board. He cuts off  $\frac{1}{6}$  of it. How long is the remaining piece, in feet and inches?

13. A website charges a fixed amount for each song download. If you can download six songs for \$4.68, then how much would it cost to download ten songs?

14. A meal in a fancy restaurant costs three times as much as a meal in the cafeteria. The meal in the fancy restaurant costs \$36. In a 5-day workweek, Mary ate lunch at the fancy restaurant once, and in the cafeteria the rest of the days. How much did she spend on lunch that week?

15. A blue swimsuit costs \$42 and a red swimsuit costs  $\frac{5}{6}$  as much. How much would the two swimsuits cost together? Mark the \$42 in the bar model. Mark what is not known with “?”. Solve.



16. A bag has green and purple marbles. Two-fifths of the marbles are green, and the rest are purple.

a. Draw a bar model for this situation.

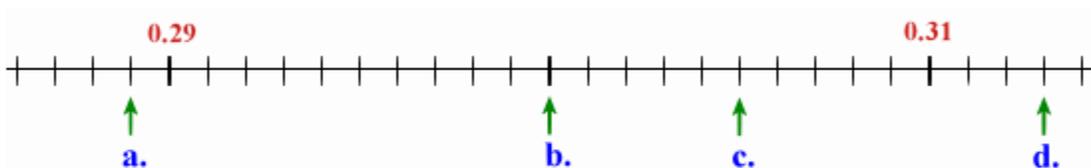
b. If there are 134 green marbles, how many are purple?

17. Karen and Ann share the cost of a DVD that costs \$29.90 so that Karen pays  $\frac{3}{5}$  of it and Ann pays  $\frac{2}{5}$  of it.

a. Estimate how much each person will pay.

b. Find the exact amount of how much each person will pay.

18. Write the decimals indicated by the arrows.



a. \_\_\_\_\_ b. \_\_\_\_\_ c. \_\_\_\_\_ d. \_\_\_\_\_

19. Complete.

a. $0.9 + 0.05 =$ _____	b. $0.28 +$ _____ $= 1$	c. $0.82 - 0.2 =$ _____
d. $1.3 - 0.04 =$ _____	e. $0.25 + 0.8 =$ _____	f. _____ $- 0.2 = 0.17$

20. Write as decimals.

a.  $\frac{8}{100} =$

b.  $\frac{81}{1000} =$

c.  $5\frac{21}{100} =$

21. Write as fractions or mixed numbers.

a. 0.048

b. 1.004

c. 7.22

22. Compare, and write  $<$  or  $>$ .

a.  $0.31$    $0.031$

b.  $0.43$    $0.093$

c.  $1.6$    $1.29$

23. Round the numbers to the nearest one, nearest tenth, and nearest hundredth.

rounded to...	nearest one	nearest tenth	nearest hundredth
5.098			

rounded to...	nearest one	nearest tenth	nearest hundredth
0.306			

24. Solve.

a. $0.4 \times 7 =$	d. $10 \times 0.05 =$	g. $1.1 \times 0.3 =$
b. $0.4 \times 0.7 =$	e. $100 \times 0.05 =$	h. $70 \times 0.9 =$
c. $0.4 \times 700 =$	f. $1000 \times 0.5 =$	i. $20 \times 0.09 =$

25. Divide.

a. $0.36 \div 6 =$	c. $3 \div 100 =$	e. $16 \div 10 =$
b. $5.6 \div 7 =$	d. $0.7 \div 10 =$	f. $71 \div 100 =$

26. Convert.

a. $0.2 \text{ m} =$ _____ $\text{cm}$ $37 \text{ cm} =$ _____ $\text{m}$ $2.9 \text{ km} =$ _____ $\text{m}$	b. $0.4 \text{ L} =$ _____ $\text{ml}$ $3.5 \text{ kg} =$ _____ $\text{g}$ $240 \text{ g} =$ _____ $\text{kg}$	c. $56 \text{ oz} =$ _____ $\text{lb}$ _____ $\text{oz}$ $74 \text{ in} =$ _____ $\text{ft}$ _____ $\text{in}$ $15 \text{ C} =$ _____ $\text{qt}$ _____ $\text{C}$
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27. Calculate.

a.  $4.2 - 2.78$

b.  $71.40 \div 5$

c.  $2.2 \times 6.4$

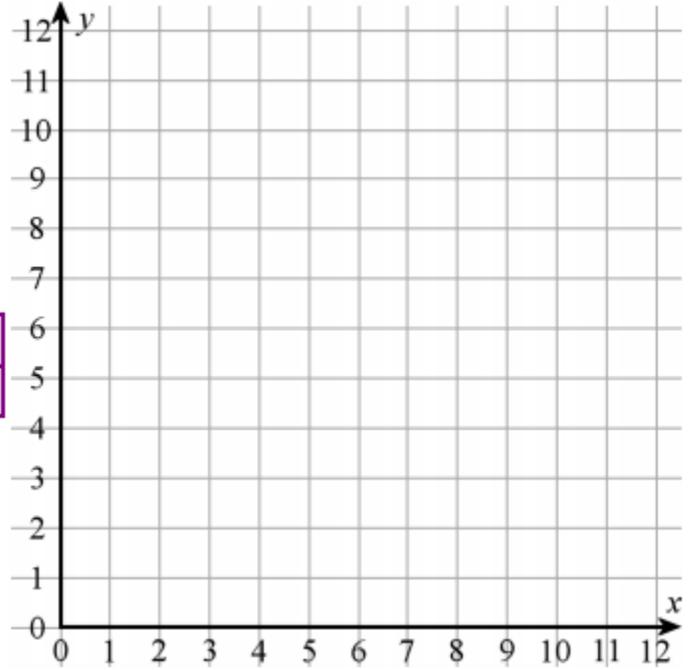
28.

Plot the points from the “number rule” on the coordinate grid.

The rule for x-values:  
Start at 0, and add 1 each time.

The rule for y-values:  
Start at 1, and add 2 each time.

x	0	1				
y	1					



29.

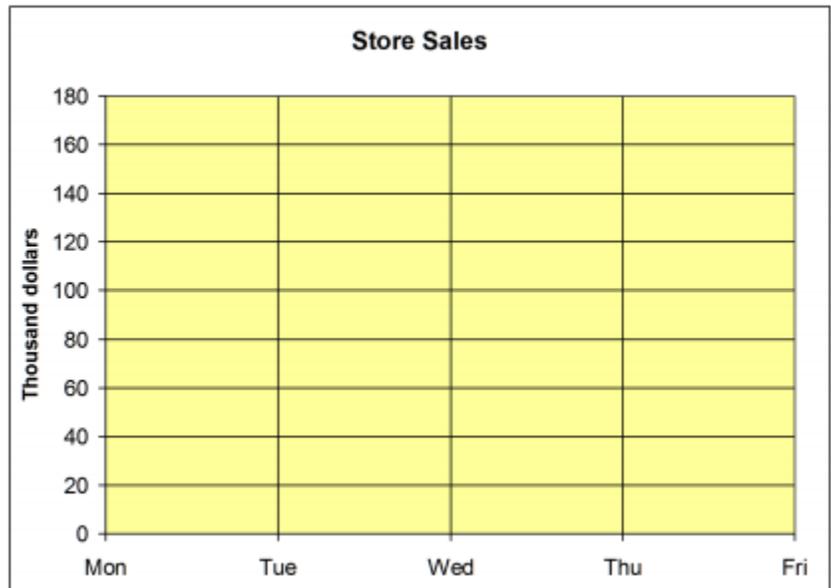
In the grid draw a circle with a center point at (8, 4) and a radius of 3 units.

30.

The table below gives the amount of sales in a grocery store from Monday through Friday.

Day	Sales (thousands of dollars)
Mon	125
Tue	114
Wed	118
Thu	130
Fri	158

- Make a line graph.
- Calculate the average daily sales for this period.



Name \_\_\_\_\_

# Multiplying Mixed Numbers

R 5-4

How to find the product of two mixed numbers:

Find  $3\frac{2}{3} \times 4\frac{1}{2}$ .

### Step 1

Estimate by rounding.

$$\begin{array}{r} 3\frac{2}{3} \times 4\frac{1}{2} \\ \downarrow \quad \downarrow \\ 4 \times 5 = 20 \end{array}$$

Then write each mixed number as an improper fraction.

$$\begin{array}{r} 3\frac{2}{3} \times 4\frac{1}{2} \\ \downarrow \quad \downarrow \\ \frac{11}{3} \times \frac{9}{2} \end{array}$$

### Step 2

Look for common factors and simplify.

$$\frac{11}{\cancel{3}_1} \times \frac{\cancel{9}^3}{2} = \frac{11}{1} \times \frac{3}{2}$$

### Step 3

Multiply. Write the product as a mixed number.

$$\frac{11}{1} \times \frac{3}{2} = \frac{33}{2} = 16\frac{1}{2}$$

$16\frac{1}{2}$  is close to 20, so the answer is reasonable.

Find each product. Simplify if possible.

1.  $2\frac{3}{4} \times 3\frac{1}{2} =$  \_\_\_\_\_

2.  $2\frac{1}{5} \times 2\frac{2}{3} =$  \_\_\_\_\_

3.  $6 \times 3\frac{1}{4} =$  \_\_\_\_\_

4.  $1\frac{2}{5} \times 3\frac{1}{4} =$  \_\_\_\_\_

5.  $4\frac{1}{2} \times 16 =$  \_\_\_\_\_

6.  $1\frac{3}{8} \times 2\frac{1}{2} =$  \_\_\_\_\_

7. **Number Sense** Is  $2 \times 17\frac{5}{6}$  greater than or less than 36? Explain.

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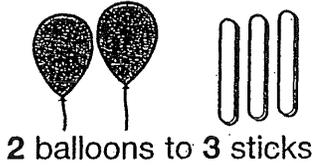
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Name \_\_\_\_\_

**Review  
18**

# Ratio and Proportion

You can use **ratios** to compare two quantities.



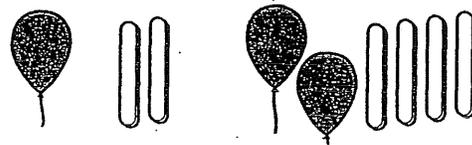
You can write ratios as:

words        2 to 3

with a colon   2:3

as a fraction    $\frac{2}{3}$

A statement that two ratios are equal is called a **proportion**.



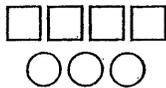
$$\frac{1 \text{ balloon}}{2 \text{ sticks}} = \frac{2 \text{ balloons}}{4 \text{ sticks}}$$

$$\frac{1}{2} = \frac{1 \times 2}{2 \times 2} = \frac{2}{4}$$

$\frac{1}{2} = \frac{2}{4}$  is a proportion.

Write each ratio. Use words, a colon, or a fraction.

1. Write the ratio of squares to circles.



\_\_\_\_\_

2. The Computer Club has 20 girls and 15 boys. Write the ratio of girls to boys in the club.

\_\_\_\_\_

Tell if the ratios form a proportion. Write yes or no.

3.  $\frac{3}{4}$   $\frac{9}{12}$  \_\_\_\_\_

4.  $\frac{1}{3}$   $\frac{2}{9}$  \_\_\_\_\_

5.  $\frac{3}{5}$   $\frac{6}{10}$  \_\_\_\_\_

6.  $\frac{4}{6}$   $\frac{8}{18}$  \_\_\_\_\_

Complete each table so that all ratios are equal.

7.

3	6	9	12
5			

8.

2			
7	21	42	63

9.

4		20	
5	10		50

10. The ratio of the width to the length of a painting is 3 to 7. If the painting is 42 in. long, how wide is it?

\_\_\_\_\_

11. The ratio of the number of moons the planet Neptune has to the number that Saturn has is 4 to 9. Saturn has 18 moons. How many moons does Neptune have?

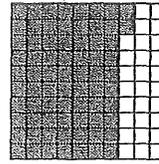
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Name \_\_\_\_\_

# Fractions, Decimals, and Percents

R 7-2

Fractions, decimals, and percents all name parts of a whole. The grid to the right has 72 out of 100 squares shaded.



72 out of 100 are shaded. As a fraction, that is  $\frac{72}{100}$ .  
As a decimal, that is 0.72. As a percent, that is 72%.

Write 40% as a fraction and decimal.

$$40\% = \frac{40}{100} = 0.40$$

The decimal point moves two places to the left.

Write 0.47 as a fraction and percent.

$$0.47 = \frac{47}{100} = 47\%$$

Write 0.3% as a fraction and decimal.

$$0.3\% = \frac{0.3}{100} = 0.003$$

The decimal point moves two places to the left. Fill in any spaces with zeros.

Write  $\frac{3}{4}$  as a decimal and percent.

You can use a proportion:

$$\frac{3}{4} = \frac{n}{100}$$

$$\frac{4n}{4} = \frac{300}{4}$$

$$n = 75$$

$$\text{So, } \frac{3}{4} = 0.75 = 75\%.$$

Write each in two other ways.

1.  $\frac{2}{10}$  \_\_\_\_\_; \_\_\_\_\_

2.  $\frac{23}{100}$  \_\_\_\_\_; \_\_\_\_\_

3.  $\frac{7}{10}$  \_\_\_\_\_; \_\_\_\_\_

4. 97% \_\_\_\_\_; \_\_\_\_\_

5. 16% \_\_\_\_\_; \_\_\_\_\_

6. 52% \_\_\_\_\_; \_\_\_\_\_

7. 0.04 \_\_\_\_\_; \_\_\_\_\_

8. 0.35 \_\_\_\_\_; \_\_\_\_\_

9. **Number Sense** Sheila got 87% of the problem correct.  
Patrick got  $\frac{91}{100}$  correct. Who scored higher? \_\_\_\_\_