

FIGURE 2.1 *Multiplication Tic-Tac-Toe*

Multiplication Tic-Tac-Toe

This game for two people requires two small markers, such as paper clips or pennies. The first player puts the two markers in the row of digits appearing below the grid, either on two different digits or on the same digit (being able to put them on the same digit allows you to multiply a digit by itself). He or she multiplies the two numbers identified by the markers together, produces a product, and places an X over that product on the game board. The second player moves ONE of the markers to a different digit, produces a product from the numbers so identified, and draws a circle around this new product on the game board. Play alternates in this way, each player moving only one marker at a time to a different digit, until one player has captured four squares in a row (horizontally, vertically, or diagonally).

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

1 2 3 4 5 6 7 8 9

How Long? How Many? Record Sheet

Covered _____

Uncovered _____

Covered _____

Uncovered _____

FOUR-SCORE #2

	1	2	3	4	5	6	7	8	9	10
Row 1										
Row 2										
Row 3										
Row 4										

Row 1: 1 2 3 4 5 6 7 8 9 10

Row 2: 1 2 3 4 5 6 7 8 9 10

Row 3: 1 2 3 4 5 6 7 8 9 10

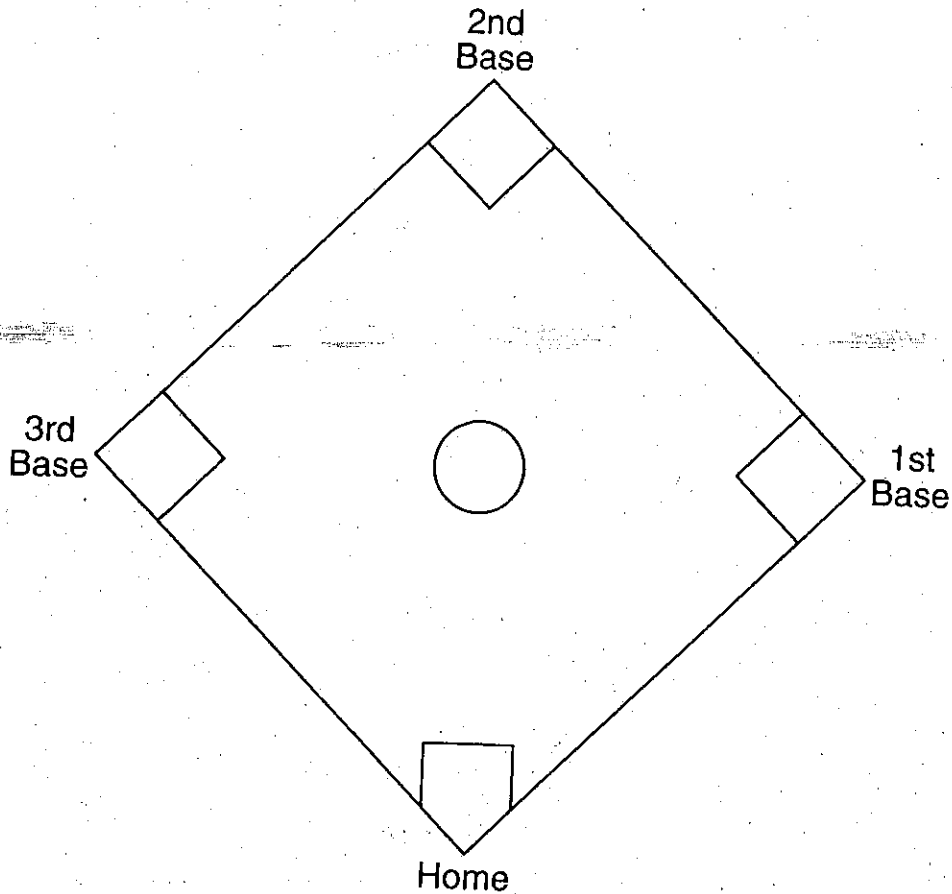
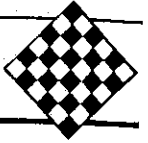
Row 4: 1 2 3 4 5 6 7 8 9 10

Name _____

Date _____

Time _____

Baseball Multiplication Playing Mat Game Master **27**



Scoreboard					
Inning		1	2	3	Total
Team 1	outs				
	runs				
Team 2	outs				
	runs				

Hitting Tables

1- to 6-Facts	
Use 2 six-sided dice.	
1 to 9	Out
10 to 18	Single (1 base)
20 to 28	Double (2 bases)
30 to 35	Triple (3 bases)
36	Home Run (4 bases)

1- to 10-Facts	
Use number cards 1-10.	
1 to 21	Out
24 to 45	Single (1 base)
48 to 70	Double (2 bases)
72 to 81	Triple (3 bases)
90 to 100	Home Run (4 bases)

2- to 12-Facts	
Use 4 six-sided dice.	
4 to 24	Out
25 to 49	Single (1 base)
50 to 64	Double (2 bases)
66 to 77	Triple (3 bases)
80 to 144	Home Run (4 bases)

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Name:

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Circles and Stars

Directions:

- Each partner rolls a die. The highest number goes first.
- The first player rolls the die. Draw that number of circles in the first box. Make the circles big enough to put stars inside.
- Roll the die a second time. Now, draw that number of stars in each circle.
- Write how many stars there are all together at the bottom of the box. Represent the game with a multiplication equation.
- Then player 2 does the same. After s/he finishes, see who is winning (whoever has the highest product).
- Play 3 more rounds. Checking to see who is winning after each round.
- Add up your products from all 4 rounds. The player with the highest number wins!

Round One

Round Two

Equation:

Equation:

Round Three

Round Four

Equation:

Equation:

Name:	Date:
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Materials:	2 dice, How Many? How Long? recording sheets
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- ✓ Each player uses their own 10 by 10 grid
- ✓ Roll the dice. These are your factors. Create a rectangle with those dimensions on your 10 by 10 grid. Write the multiplication equation inside your rectangle. Trace it with marker (use pencil first).
- ✓ Player 1 and 2 take turns going.
- ✓ The game is over when you can no longer fit any rectangles on your grid.
- ✓ Add up all the products from your rectangles. (How many covered?) Whoever has the highest number wins!
- ✓ Play again!

How Long? How Many? Record Sheet

Covered _____

Uncovered _____

Covered _____

Uncovered _____



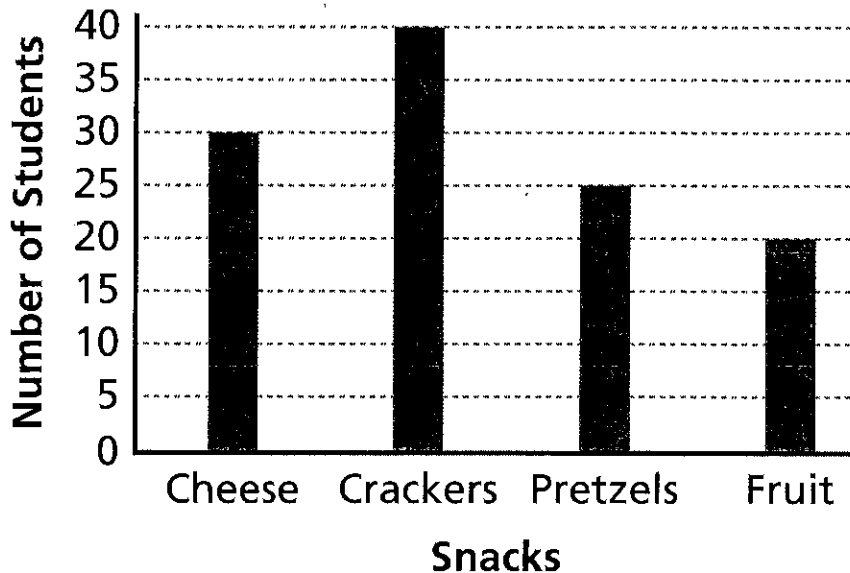
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More Bar Graphs

Use the bar graph to answer the questions below.

What Is Your Favorite Snack?



1. How many students participated in the survey?

Show how you found your answer.

- 2a. Which snack do students favor the most? _____

- b. How many students chose this snack as their favorite?

3. How many more students chose cheese as their favorite snack than chose fruit as their favorite snack?

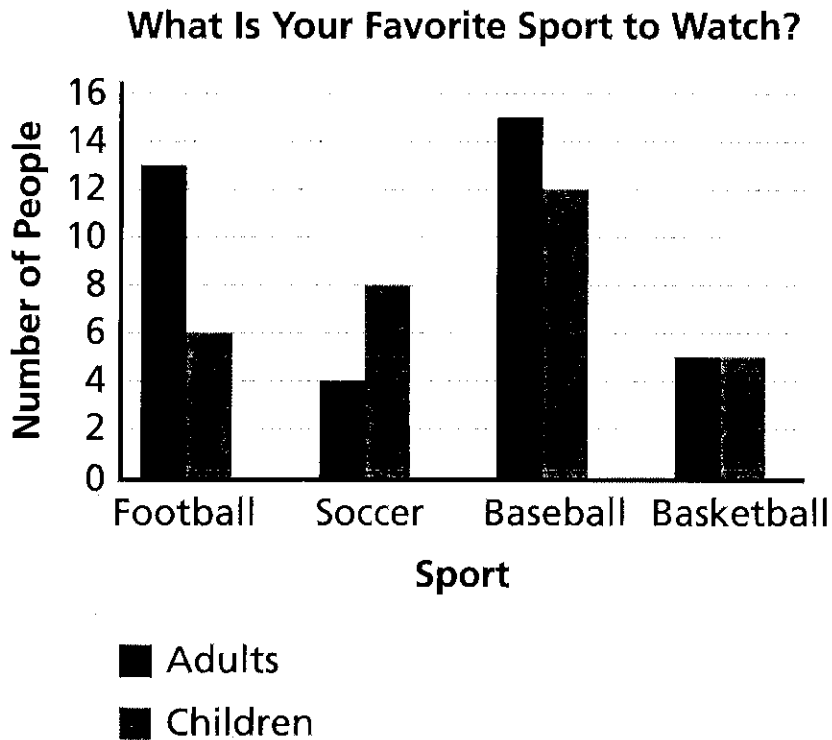


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Data Details

Use the bar graph to answer the questions below.



- 1a.** Which sport is favored by adults the most? _____

b. How many adults favor this sport? _____
- 2.** Which sport do adults and children favor the same? _____
- 3.** How many more adults than children favor football?

- 4.** What are 2 things that you can say about this group of people based on this graph? Use words such as *half*, *more/less than half*, *very few*, or *almost all* to describe the data.



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Representing and Describing Data

The students in Mrs. Dylan's class took a survey about how many times they have visited a museum. Here are their data:

Becky	2	Bridget	1	Cameron	3
Arthur	5	Keith	1	Chris	9
Zhang	4	Dwayne	2	Chiang	5
Gil	2	Elena	2	Murphy	3



1 Use the data to make a line plot.



2 Describe 2 things you notice about the data.



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More Feet and Inches

Complete the table.

Rulers and Inches	Inches	Feet and Inches
2 rulers and 7 more inches		
1 ruler and 11 more inches		
5 rulers and 3 more inches		
4 rulers and 6 more inches		
3 rulers and 7 more inches		
6 rulers and 1 more inch		
1 ruler and 2 more inches		
3 rulers and 3 more inches		
4 rulers and 10 more inches		
5 rulers and 9 more inches		



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Yards, Feet, and Inches

Solve the problems, and show your work.

- 1** The desk is 3 feet 11 inches wide. How wide is it in yards, feet, and inches?

- 2** Justin is 5 feet 1 inch tall. How tall is he in yards, feet, and inches?

- 3** The path from the window to the door measures 12 feet 8 inches. How long is the path in yards, feet, and inches?

- 4** The sidewalk from the bus stop to the door measures 22 feet 3 inches. How long is the sidewalk in yards, feet, and inches?



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Finding Groups of 10

1 Use the following questions to figure out how many 10s are in 238.

a. How many 10s are in 200? _____

b. How many 10s are in 30? _____

c. How many 10s are in 238? _____

2 Use the following questions to figure out how many 10s are in 352.

a. How many 10s are in 300? _____

b. How many 10s are in 50? _____

c. How many 10s are in 352? _____

3 How many 10s are in 523? _____

How do you know?



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Place Value of 3-Digit Numbers

Answer the following questions. You may use your 1,000 Chart to help you.

1 What number is 30 more than 647? _____

2 What number is 70 less than 891? _____

3 What number is 40 more than 484? _____

4 What number is 60 less than 253? _____

5 What number is 200 more than 118? _____



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Place Value of 3-Digit Numbers

- 6 Put the following numbers in order on the number line below. Then circle the number you would round to 300 when rounding to the nearest 100.

423

234

432

342



Answer the following questions.

- 7 Write a number that has three 100s, four 10s, and six 1s. _____
- 8 Write a number that has eleven 10s and no 1s. _____
- 9 Write a number that has six 100s and three 1s. _____
- 10 a. Round 284 to the nearest 10. _____
b. Round 284 to the nearest 100. _____



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Using Addition Strategies

Write an equation to go with the story problem.
Solve each problem and show your solution.

- 1** A restaurant sold 102 salads on Friday.
147 salads were sold on Saturday.
How many salads were sold in all?

2 $67 + 99 =$ _____

3 $354 + 26 =$ _____

4
$$\begin{array}{r} 134 \\ + 228 \\ \hline \end{array}$$

5
$$\begin{array}{r} 271 \\ + 89 \\ \hline \end{array}$$



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Creating Starter Problems

1 a. Write three Starter Problems that could help you solve $259 + 103 = \underline{\hspace{2cm}}$.

b. Solve the final problem, and show your solution. Circle the Starter Problem you used to help you.

2 a. Write three Starter Problems that could help you solve $146 + 277 = \underline{\hspace{2cm}}$.

b. Solve the final problem, and show your solution. Circle the Starter Problem you used to help you.



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Comparing Heights of Trees

The Nature Center grows a variety of trees and shrubs. The table at the right shows their heights. Use the information in the table to answer the questions.

Kind of Tree	Height in Inches
Bamboo	84
Cherry	223
Forsythia	96
Lilac	115
Azalea	36

- 1** How many inches does the bamboo need to grow to be as tall as the lilac? Show your work.

- 2** The cherry tree is the tallest. How much taller is it than each of the other trees? Show your work.



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More Subtraction Problems

Write two story problems for each problem. Only one of your problems can be about taking away one part from a total. Then solve the problem.

1 $227 - 173 = \underline{\hspace{2cm}}$

2 $484 - 167 = \underline{\hspace{2cm}}$

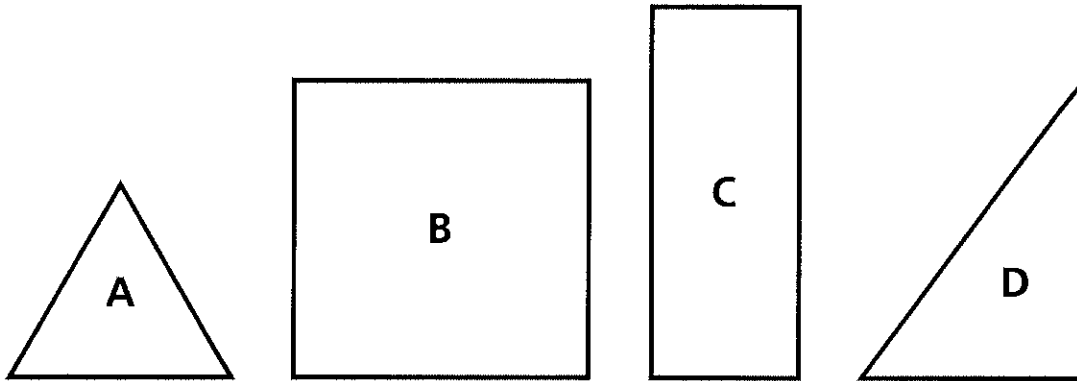


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Ordering More Shapes by Perimeter

Use the shapes below to answer the questions.



1 Without measuring, which shape do you think has the longest perimeter?

2 Use a centimeter ruler to measure the perimeter of each shape. Put them in order from shortest to longest. Write the perimeter of each shape.

3 Which shape has the longest perimeter?



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Same Perimeter, Different Shape

Draw 3 different shapes that each has a perimeter of 24 cm. You may **NOT** draw rectangles.

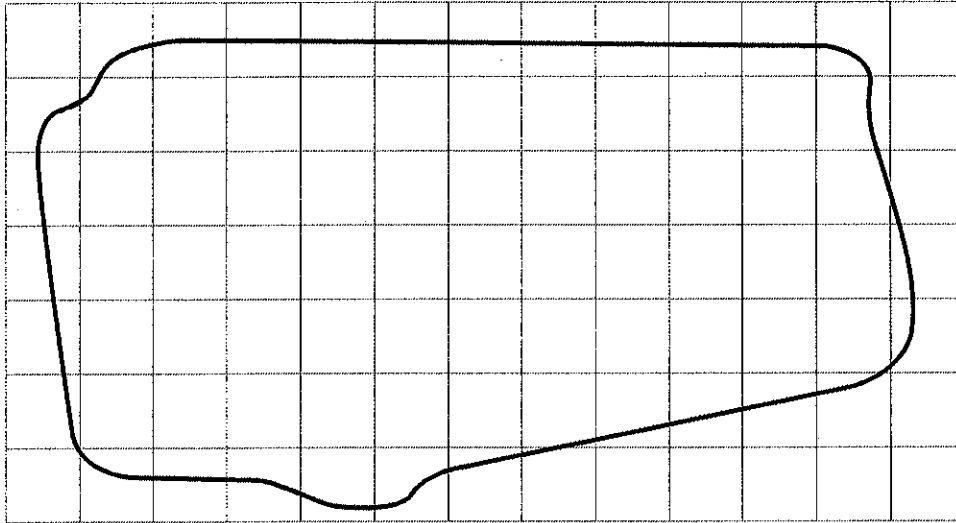


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More Perimeter and Area

Find the perimeter and area of this shape.



- 1** Use yarn or string to measure the perimeter of the shape. Describe how you measured the perimeter.

- 2** What is the area of the shape? Explain how you found your answer.



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What Color Is It?

Build a train of 12 cubes with these colors, in this order: yellow, black, yellow, black, yellow, black, yellow, black, yellow, black, yellow, black.

If this pattern keeps repeating the same colors:

What is the color of the 13th cube? _____

What is the color of the 16th cube? _____

What is the color of the 21st cube? _____

What is the color of the 30th cube? _____

What is the color of the 32nd cube? _____

How did you figure out the color of the 32nd cube?



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Equations for a 5-Cube Train

Build a 15-cube train with an orange-yellow-red-blue-green pattern (OYRBG OYRBG).

Write equations for these numbers, showing how they are related to multiples of 5. Some of them are already filled in.

$1 = \underline{\hspace{10em}}$

$2 = \underline{\hspace{10em}}$

$3 = \underline{\hspace{10em}}$

$4 = \underline{\hspace{10em}}$

$5 = \underline{\hspace{10em}}$

$6 = \underline{\hspace{10em}}$

$7 = \underline{\hspace{10em}}$

$8 = \underline{\hspace{10em}}$

$9 = \underline{\hspace{10em}}$

$10 = 2 \times 5$

$11 = (2 \times 5) + 1$

$12 = (2 \times 5) + 2$

$13 = \underline{\hspace{10em}}$

$14 = \underline{\hspace{10em}}$

$15 = \underline{\hspace{10em}}$



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What Is It?



1 If this pattern keeps repeating, will the 100th figure be a star, a moon, or a sun? _____

How did you figure this out?

2 If this pattern keeps repeating, will the 200th figure be a star, a moon, or a sun? _____

How did you figure this out?

3 If this pattern keeps repeating, will the 304th figure be a star, a moon, or a sun? _____

How did you figure this out?

4 If this pattern keeps repeating, will the 602nd figure be a star, a moon, or a sun? _____

How did you figure this out?



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Writing Story Problems

Write a story problem for each equation. Then solve the problem and show how you solved the problem.

$$4 \times 6 = ?$$

Story:

$$24 \div 8 = \underline{\hspace{2cm}}$$

Story:

$$\square \times 7 = 21$$

Story:



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Relating Division to Multiplication

Draw a line from the multiplication fact to the related division fact. Fill in the blanks in each equation.

$7 \times \underline{\hspace{2cm}} = 42$

$30 \div 5 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \times 8 = 32$

$36 \div 4 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \times 9 = 54$

$48 \div 8 = \underline{\hspace{2cm}}$

$4 \times \underline{\hspace{2cm}} = 36$

$90 \div 10 = \underline{\hspace{2cm}}$

$8 \times \underline{\hspace{2cm}} = 48$

$32 \div 8 = \underline{\hspace{2cm}}$

$\underline{\hspace{2cm}} \times 5 = 30$

$42 \div 7 = \underline{\hspace{2cm}}$

$10 \times \underline{\hspace{2cm}} = 90$

$54 \div 9 = \underline{\hspace{2cm}}$

Answer the questions below. Use words, pictures, or a story problem to explain your ideas.

How can knowing $20 \div 4$ help you figure out $28 \div 4$?

Why does knowing 7×6 help you figure out $42 \div 7$?



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Missing Numbers

Fill in the chart with the missing factors or products.

Factor	×	Factor	=	Product
6	×		=	54
	×	8	=	32
8	×	8	=	
7	×		=	56
	×	7	=	63
9	×	10	=	
7	×		=	42



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Wheel Counting

Solve these problems about bicycles and tricycles. Use cubes or other tools to help you solve the problems. Show how you solved each problem.

- 1** At the Bicycle Store, Madeline saw 3 red tricycles and 30 blue tricycles. How many wheels did she see?

- 2** Her sister, Claire, saw 4 pink bicycles and 40 white bicycles. How many wheels did she see?

Extra

- 3** Who saw more wheels? How many more?



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More Division Problems

Solve each problem. Show how you solved the problem.

- 1** Mr. James has 64 oranges he is putting in bags. He wants to put 8 oranges in each bag. How many bags does he need?

- 2** Clara is cleaning out her toy box. She found many toy cars. She counted 36 wheels. How many cars did she find?

- 3** There are 63 students in the 3rd grade. Ms. Santos divided them into 7 groups. How many students are in each group?



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Large Brownies





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Three Pieces

--	--	--



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Small Brownies





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Sharing Several Brownies

- 1 How can 2 people share 3 brownies?
- 2 How can 2 people share 5 brownies?
- 3 How can 3 people share 4 brownies?
- 4 How can 3 people share 5 brownies?
- 5 How can 4 people share 2 brownies?
- 6 How can 4 people share 3 brownies?
- 7 How can 3 people share 2 brownies?
- 8 How can 6 people share 4 brownies?



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Sharing Several Brownies Recording Sheet

_____ brownies shared by _____ people.

Draw a picture to show your solution or explain in words how you solved the problem.

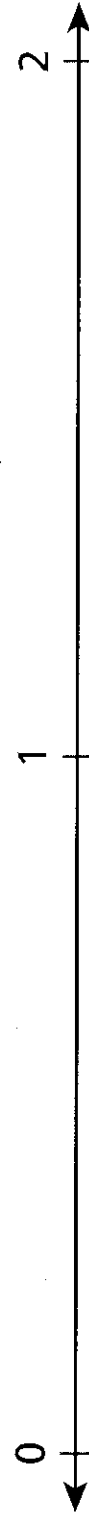
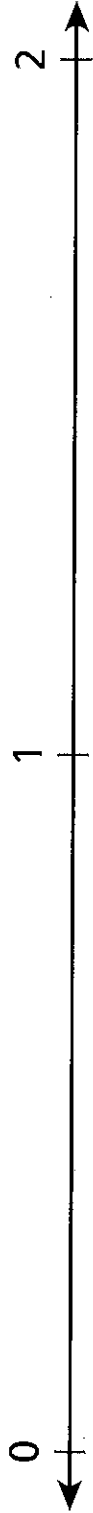
How many brownies does each person get? _____



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Fractions on Number Lines





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Sharing Brownies

How can 8 people share 2 brownies?

Draw a picture to show your solution or explain in words how you solved the problem.



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How Much Farther on the Number Line?

Solve each problem. Draw a number line and show your thinking for each problem.

- 1 If an ant walked $\frac{3}{4}$ of the way from 0 to 1, how much farther does the ant have to walk to get to 2?

- 2 If an ant walked $\frac{4}{3}$ of the way from 0 to 1, how much farther does the ant have to walk to get to 2?

- 3 If an ant walked $\frac{2}{8}$ of the way from 0 to 1, how much farther does the ant have to walk to get to 1?

- 4 If an ant walked $\frac{4}{6}$ of the way from 0 to 1, how much farther does the ant have to walk to get to 2?



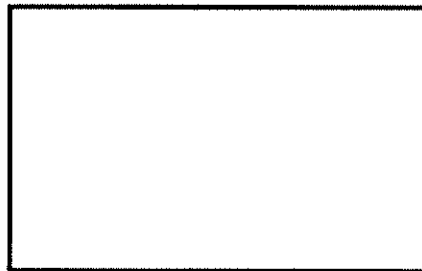
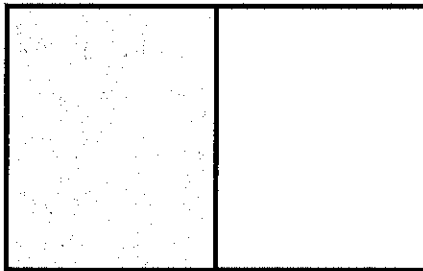
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Identifying Equivalent Fractions

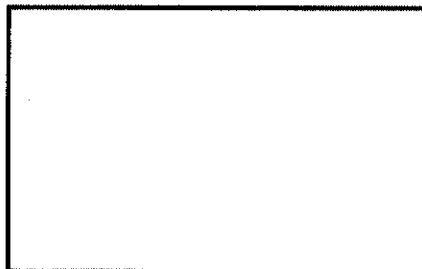
On each rectangle to the right, draw lines and shade the area to show an equivalent fraction. Then write the equivalent fractions.

1



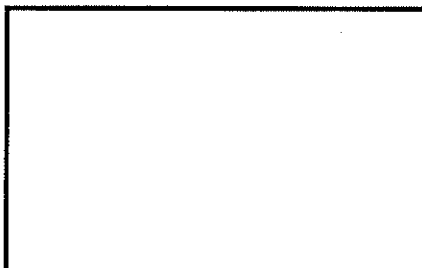
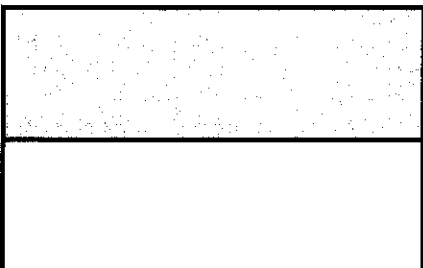
_____ = _____

2



_____ = _____

3



_____ = _____



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Subtracting Multiples of 10

Solve each set of related problems.

Set 1

$$\begin{array}{r} 456 \\ - 100 \\ \hline \end{array}$$

$$\begin{array}{r} 456 \\ - 130 \\ \hline \end{array}$$

Set 2

$$\begin{array}{r} 652 \\ - 200 \\ \hline \end{array}$$

$$\begin{array}{r} 652 \\ - 240 \\ \hline \end{array}$$

Set 3

$$\begin{array}{r} 568 \\ - 300 \\ \hline \end{array}$$

$$\begin{array}{r} 568 \\ - 320 \\ \hline \end{array}$$



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Addition and Subtraction Practice

Find the solutions. Show your work.

1 $329 + 100 - 20 + 4 =$ _____

2 $597 - 200 - 100 + 10 =$ _____

3 $444 + 40 - 100 + 20 =$ _____

4 $286 + 200 - 30 + 10 =$ _____

5 $411 - 30 + 50 - 20 =$ _____



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Extending a Set of Problems

Solve each set of related problems. Then write and solve 2 more problems for each set.

Set 1

$$\begin{array}{r} 300 \\ - 125 \\ \hline \end{array}$$

$$\begin{array}{r} 600 \\ - 125 \\ \hline \end{array}$$

$$\begin{array}{r} 650 \\ - 125 \\ \hline \end{array}$$

Set 2

$$\begin{array}{r} 110 \\ - 45 \\ \hline \end{array}$$

$$\begin{array}{r} 210 \\ - 45 \\ \hline \end{array}$$

$$\begin{array}{r} 210 \\ - 125 \\ \hline \end{array}$$

Set 3

$$\begin{array}{r} 400 \\ - 70 \\ \hline \end{array}$$

$$\begin{array}{r} 800 \\ - 70 \\ \hline \end{array}$$

$$\begin{array}{r} 800 \\ - 65 \\ \hline \end{array}$$



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More 3-Digit Addition

Solve each problem. Show your work.

1 $125 + 213 =$ _____

2 $312 + 143 =$ _____

3 $214 + 231 =$ _____



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Adding 3-Digit Numbers

Solve each problem in 2 different ways. Show your work.

1 $453 + 377 = \underline{\hspace{2cm}}$

Start by solving $400 + 300$.

Start by solving $377 + 23$.

2 $674 + 280 = \underline{\hspace{2cm}}$

Start by solving $674 + 200$.

Start by solving $600 + 200$.



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Making Equivalent Problems

Solve the problems. Try to make an equivalent problem for at least one problem in each set.

Set 1

$268 + 374 = \underline{\hspace{2cm}}$

$397 + 454 = \underline{\hspace{2cm}}$

Set 2

$149 + 252 = \underline{\hspace{2cm}}$

$643 + 174 = \underline{\hspace{2cm}}$

Set 3

$289 + 411 = \underline{\hspace{2cm}}$

$373 + 166 = \underline{\hspace{2cm}}$



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More Travel Problems

Show what happens on each trip on a number line.
Solve each problem. Show your work.

- 1** The Baker family traveled by car to visit their cousins. They left home and drove 115 miles before they stopped for lunch. Then they continued to their cousins' house. When they got there they had driven 304 miles from their home. How many miles did they drive from their lunch stop to their cousins' house?

- 2** The Taylor family drove from their home to New York City. On the way they stopped at their grandmother's house. New York City is 289 miles from their home. Their grandmother's house is 203 miles from their home. How far is it from their grandmother's house to New York City?



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Lunch Orders

Item	Price
ham sandwich	\$3.18
turkey sandwich	\$3.59
juice box	\$1.15
bottled water	\$0.70
apple	\$0.32
banana	\$0.39

You have \$5.00 to buy a sandwich, a drink, and a piece of fruit. Find 2 different combinations that cost less than \$5.00 in all. Then find how much money you have left.

My Lunch Order	My Lunch Order
List items and prices.	List items and prices.
sandwich: _____	sandwich: _____
drink: _____	drink: _____
fruit: _____	fruit: _____
I spent a total of _____.	I spent a total of _____.
I have _____ left.	I have _____ left.



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Subtracting with Larger Numbers

Solve each problem. Show your solutions.

1 $1,488 - 709 =$ _____

2 $1,062 - 511 =$ _____

3 $1,375 - 1,064 =$ _____

4 $2,006 - 1,358 =$ _____



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Division Story Problems

Solve these problems that take place in a bakery.

Use cubes or other tools to help you.

Write an equation to go with each problem.

Please use a quick sketch to show your work.

- 1** A restaurant ordered 27 cupcakes. Selma is packing boxes that hold 3 cupcakes each. How many boxes will she fill?

- 2** Another restaurant ordered 35 cupcakes. Selma used 5 boxes and put the same number of cupcakes in each box. How many cupcakes did she put in each box?

- 3** The bakery has 36 cupcakes to put on display. 6 cupcakes fit on a plate. How many plates will be needed for the display?



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What to Do with Leftovers?

Write two different story problems to go with each equation. Each problem should have a different answer. Solve each story problem and show how you solved it.

$$43 \div 7$$

Story Problem 1:

Solution to Story Problem 1:

Story Problem 2:

Solution to Story Problem 2:



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What to Do with Leftovers?

$$68 \div 9$$

Story Problem 1:

Solution to Story Problem 1:

Story Problem 2:

Solution to Story Problem 2:



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Multi-Step Problems

Solve each problem and show how you solved it.

- 1** Stephano is setting up vases of flowers on tables for a party. The vases hold 6 flowers each. There are 7 round tables, 14 square tables, and 8 rectangular tables. If he puts one vase of flowers on each table, how many flowers does he need?

- 2** Jake and his friends picked apples in an orchard. Jake picked 14 apples, Anna picked 20 apples, Alejandro picked 16 apples, and Noemi picked 22 apples. They decided to share them equally among the 4 of them. How many apples did each person get?

- 3** Enrique made 56 pies. He gave 29 of them away. He sold the rest of them for \$5 each. How much money did he get for the pies he sold?



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Solving Problems in More Than One Way

Read each of the problems below. Write an equation to represent each problem. On a separate sheet of paper, solve each problem in two different ways, making sure that both ways are useful.

Maureen was making photo books for her family. She made 3 different books.

- 1** The first book had 58 pages and each page had 8 pictures on it. How many pictures did she have in this book?

- 2** The second book had 9 pictures on a page but only 45 pages. How many pictures did this book have in it?

- 3** The last book she made had 97 pages with 7 pictures on each page. How many pictures were in this book?



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Finding a Rule

Aranik starts with 43 marbles and receives 5 marbles every night. Fill out the table about the amount of marbles Aranik has each day through Day 10.

Aranik			
Day	Number of Marbles	Day (continued)	Number of Marbles
Beginning Amount		6	
1		7	
2		8	
3		9	
4		10	
5			

- 1 Figure out how many marbles Aranik has on Day 18.
- 2 Figure out how many marbles Aranik has on Day 22.
- 3 Use words to write a rule for figuring out how many marbles Aranik has on any day.



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An Equation for Any Day

Gil has 19 shells. He collects 3 shells each day for 30 days. Fill in the table to show how many shells Gil would have every 5 days.

Shells Collected	
Day	Number of Shells
Beginning Amount	
5	
10	
15	
20	
25	
30	

- 1 How many shells would Gil have on Day 27? Day 50? Explain how you figured it out.
- 2 On what day will Gil have 88 shells? 196 shells? Explain how you figured it out.
- 3 What rule could you use to find the number of shells for any day?
- 4 Write an equation to go with your rule. Use G to stand for the total number of shells Gil has.