

**ENRICHMENT MATH WORK**  
**GOLD PAGES**  
**FOR THOSE STUDENT WHO SEEK A**  
**CHALLENGE**

Name \_\_\_\_\_

# Find the Numbers

Use the number chart to answer the questions. Circle each number you find. You can use only digits that are next to each other to make numbers. Read the rows from left to right. Read the columns from top to bottom.

**Number Sense**

		COLUMNS									
		A	C	E	G	I	K	M	O	Q	S
ROWS	B	3	5	4	3	2	7	1	1	7	1
	D	2	4	2	9	7	1	9	2	3	9
	F	1	1	6	4	1	3	5	2	1	2
	H	1	3	7	2	0	5	9	1	2	5
	J	4	2	0	3	6	7	1	7	6	9
	L	2	2	6	5	2	9	5	6	9	9
	N	2	1	8	5	3	8	6	6	2	2
	P	8	1	8	3	8	5	7	3	3	3
	R	4	1	6	2	3	8	4	7	5	8
	T	5	4	4	3	2	5	9	8	2	5

Enrichment 1-1

Write the letter of the

1. row that has the four-digit number with the least value. \_\_\_\_\_
2. column with the greatest number of digits in counting order. \_\_\_\_\_
3. column that has the three-digit number with the greatest value. \_\_\_\_\_
4. row with the palindrome with the greatest number of digits.  
(A palindrome is a number that is the same when read forward or backward. For example, the number 121 is a palindrome.) \_\_\_\_\_
5. column with the greatest number of odd numbers in counting order. \_\_\_\_\_
6. column with the palindrome with the greatest number of digits. \_\_\_\_\_
7. row with the greatest number of digits in reverse counting order. \_\_\_\_\_
8. column that has the five-digit number with the least value. \_\_\_\_\_

Name \_\_\_\_\_

Enrichment  
**1-2**

# Competing Corporations

Corporation A, Corporation B, and Corporation C are in the same city. Corporation A employs 330,000 people. Corporation B employs more than 320,000 people, but fewer than Corporation A employs. Corporation C has less than half the employees of Corporation A.

**Number Sense**

Corporation A
Employees: 330,000

Corporation B
Employees: > 320,000 and < Corporation A

Corporation C
Employees: $< \frac{1}{2}$ Corporation A

1. What number must be in the ten-thousands place of the number of employees of Corporation B?  
\_\_\_\_\_
2. What number must the number of Corporation C's employees be less than?  
\_\_\_\_\_
3. What is the greatest number of employees Corporation C could have?  
\_\_\_\_\_
4. What is the least number of additional people needed to make the number of employees of Corporation B greater than the number of employees of Corporation A?  
\_\_\_\_\_
5. What is the sum of the greatest possible number of employees of all three corporations?  
\_\_\_\_\_
6. What is the least number of employees who could be employed by Corporation B?  
\_\_\_\_\_
7. Could Corporation C's employees be half of Corporation B's employees?  
\_\_\_\_\_

Enrichment 1-2

Name \_\_\_\_\_

Enrichment

**1-3**

## What is the Decimal?

Use the clues to identify each number. Write each number in word form, expanded form, and standard form.

**Number Sense**

1. This number is the same as thirty-one and eight hundred eighty thousandths.

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2. This number is 500 thousandths less than 2.845.

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3. This number is 0.02 more than five and five tenths.

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4. This number is equivalent to seventeen and fifty thousandths.

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5. This number is three tenths less than twenty-four and twenty hundredths.

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---

6. This number is the same as sixty-eight and 830 thousandths.

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Enrichment 1-3

Name \_\_\_\_\_

Enrichment

**1-4**

# Digit Detection

Use each digit only once to make the comparisons true.

**Number Sense**

1. Use 2, 3, and 4.

$$\square.\square 6 < 2.\square 2$$

2. Use 7 and 8.

$$7.2\square > \square.23$$

3. Use 0, 3, and 5.

$$\square.4\square 7 < 0.45\square$$

4. Use 4 and 6.

$$57.\square 64 > 57.46\square$$

5. Use 1, 3, and 9.

$$9.3\square < 9.\square 3 < \square.34$$

6. Use 3, 6, and 9.

$$\square.138 > 8.\square 87 > 8.3\square 5$$

7. Use 6, 3, 4, and 1.

$$5.4\square\square > \square.34 > 4.\square 2$$

8. Use 6, 0, 9, and 5.

$$6.\square\square < \square.08 < 6.0\square$$

Fill in the boxes to make the comparison true. List 5 possible combinations.

9. Use 7, 8, and 9.

$$36.\square 4 < 3\square.\square 4$$

$$36.\square 4 < 3\square.\square 4$$

$$36.\square 4 < 3\square.\square 4$$

$$36.\square 4 < 3\square.\square 4$$

$$36.\square 4 < 3\square.\square 4$$

10. Use 3, 2, 1, and 0.

$$\square.\square 68 > 2.\square 4\square$$

$$\square.\square 68 > 2.\square 4\square$$

$$\square.\square 68 > 2.\square 4\square$$

$$\square.\square 68 > 2.\square 4\square$$

$$\square.\square 68 > 2.\square 4\square$$

Enrichment 1-4

Name \_\_\_\_\_

Enrichment

**2-2**

# Census Rounding

The table shows July 2005 population estimates for the five fastest-growing U.S. cities over the course of a year.

**Number Sense**

Rank	Geographic Area	Population Estimate
1	Elk Grove, CA	112,338
2	North Las Vegas, NV	176,635
3	Port St. Lucie, FL	131,692
4	Gilbert, AZ	173,989
5	Cape Coral, FL	140,010

Enrichment 2-2

1. Round the population of each city to the nearest thousand in the table below.

Elk Grove, CA	
North Las Vegas, NV	
Port St. Lucie, FL	
Gilbert, AZ	
Cape Coral, FL	

2. Round the population of each city to the nearest ten thousand in the table below.

Elk Grove, CA	
North Las Vegas, NV	
Port St. Lucie, FL	
Gilbert, AZ	
Cape Coral, FL	

Name \_\_\_\_\_

Enrichment

**2-3**

## A Good Cause

The Canine War Heroes group needs to raise \$700 for a statue honoring dogs that served in the military. The group must choose one of the following fundraising events.

**Estimation**

- A. The Agility Club held a fun trial. Each ticket for a dog to run through the obstacle course cost \$4.00, and the club sold 147 tickets. The expenses were \$92.00.
- B. The Jr. Canine Club sold dog cookie jars. The large cookie jars sold for \$7.75 each, the medium cookie jars sold for \$6.25 each, and the small cookie jars sold for \$5.50 each. The club sold 29 large cookie jars, 35 medium cookie jars, and 44 small cookie jars. The expenses were \$143.00.
- C. The Veterans' Club washed dogs to raise money. The club charged \$15 to wash each dog and washed 42 dogs. The expenses were \$109.00.

1. About how much did each fundraising event earn (before expenses)?

Choice A \_\_\_\_\_ Choice B \_\_\_\_\_ Choice C \_\_\_\_\_

2. Estimate how much each fundraising event will earn after expenses.

Choice A \_\_\_\_\_ Choice B \_\_\_\_\_ Choice C \_\_\_\_\_

3. Based on the three fundraising events, which would you suggest the Canine War Heroes group choose? Explain.

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4. If the group wants to choose two of the fundraising events, how many possible combinations are there? List the combinations.

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Enrichment 2-3

Name \_\_\_\_\_

Enrichment

**2-4**

## Zoo Clues

**Algebra**

1. At the zoo, there are 47 armadillos. If 39 of the armadillos are female, how many armadillos are male? Write two different equations, and then solve.

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2. Carly needs to buy 26 tickets for the monorail ride at the zoo. She bought 17 tickets so far. How many more tickets does Carly need to buy? Write an equation, and then solve.

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3. There are three species of baboons at the zoo, with a total of 58 baboons in all. If 21 are olive baboons and 35 are sacred baboons, how many are yellow baboons? Write two different equations, and then solve.

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4. Mark is buying souvenirs at the zoo's gift shop for 35 relatives. He has selected 19 souvenirs so far. How many more souvenirs does Mark need to select? Write an equation, and then solve.

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5. In Wild Cat Kingdom, the zoo exhibits a total of 77 big cats in all. If 13 are leopards, 18 are tigers, and 29 are lions, how many are jaguars? Write two different equations, and then solve.

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Enrichment 2-4

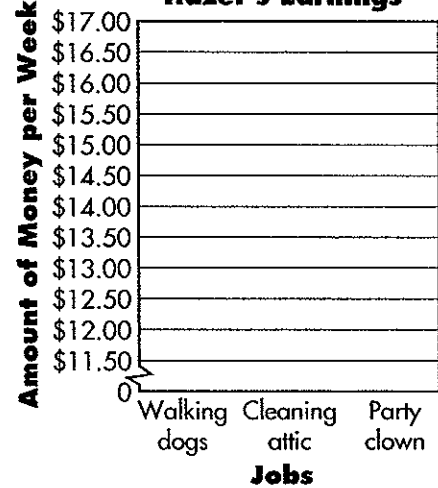
Name \_\_\_\_\_

# Summer Savings

Hazel is earning money this summer by doing chores for her neighbors. She decides to make a bar graph to help her see how much money she makes at each job each week. Show each amount on the graph.

## Algebra

Hazel's Earnings



1. Hazel earns \$5.50 each time she walks Ms. Duncan's dog, Rose. She walks Rose 3 times each week.
2. Hazel helps Mr. Carson clean his attic two times each week. She earns \$6.50 each time.
3. Hazel earns \$4.25 per hour when she entertains children as a clown during birthday parties. She works as a clown 4 hours each week.
4. Hazel wants to save money to buy a bicycle for \$300.00. If Hazel did all of her jobs each week, how many weeks would she need to work to earn \$300.00?

5. Hazel is going to volunteer at the humane society. She needs to decide which job she should stop doing to make more time for her volunteer work. Which job do you think Hazel should stop doing? Why?

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Name \_\_\_\_\_

Enrichment

**2-7**

# Find Those Numbers!

Fill in the boxes to complete the differences.

**Reasoning**

1. 
$$\begin{array}{r} 17.\square4 \\ -9.3\square \\ \hline \square.38 \end{array}$$

2. 
$$\begin{array}{r} 2.\square\square \\ -\square.64 \\ \hline 1.29 \end{array}$$

3. 
$$\begin{array}{r} 1\square.45 \\ -7.6\square \\ \hline 3.\square7 \end{array}$$

4. 
$$\begin{array}{r} 6.\square\square \\ -\square.39 \\ \hline 1.86 \end{array}$$

5. 
$$\begin{array}{r} 3\square.4\square7 \\ -\square4.76\square \\ \hline 15.\square42 \end{array}$$

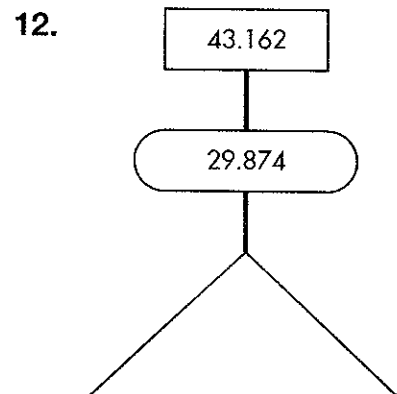
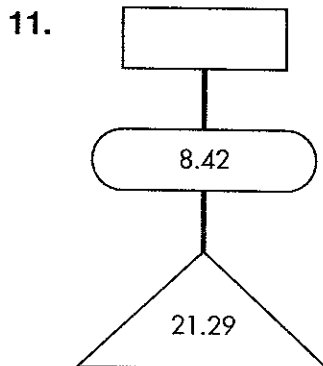
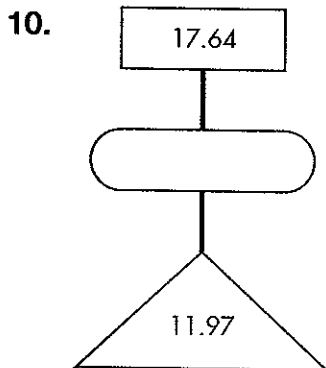
6. 
$$\begin{array}{r} 9\square.\square37 \\ -\square2.104 \\ \hline 46.8\square\square \end{array}$$

7. 
$$\begin{array}{r} \square2.\square3 \\ -34.7\square\square \\ \hline 2\square.618 \end{array}$$

8. 
$$\begin{array}{r} \square4.0\square8 \\ -38.74\square \\ \hline 5\square.\square26 \end{array}$$

9. 
$$\begin{array}{r} \square\square.714 \\ -34.8\square \\ \hline 29.\square0\square \end{array}$$

Complete the puzzles. Every triangle will be the difference between the rectangle and the oval.



Name \_\_\_\_\_

Enrichment

**2-8**

## Ice Cream Parlor Sense

**Decision Making**

1. Gerard has two \$5 bills and three \$10 bills. He spends \$3.85 for a milkshake and \$7.98 for a banana split. How much money does he have left?
- 

Use the table below for Exercises 2–5.

Create Your Own Sundae	Price
Basic sundae (one scoop)	\$1.99
Extra scoop	\$1.25 extra
Two extra scoops	\$2.50 extra
Extras: walnuts, cherries, sprinkles, hot fudge, butterscotch, whipped cream, chocolate shavings	\$0.66 apiece

2. Tina wants to make an ice cream sundae with an extra scoop, walnuts, hot fudge, whipped cream, and sprinkles. How much will her ice cream sundae cost?  

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3. Tina found a coupon in her wallet for \$1.50 off any ice cream sundae. She used it for her order in Problem 2 and added cherries to her sundae. How much will her ice cream sundae cost now?  

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4. Jamaal has four \$5 bills and two \$10 bills. He makes an ice cream sundae with two extra scoops, hot fudge, whipped cream, and chocolate shavings. After he pays, how much money does he have left?  

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5. If Jamaal buys an ice cream sundae identical to the one in Problem 4 for Tyler, how much money does he have left now?  

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Enrichment 2-8

Name \_\_\_\_\_

Enrichment

**3-3**

## Dog Wash

Toni and four of her friends are organizing a dog wash to raise money for service dogs for people with disabilities. They will be able to use the equipment at the local dog grooming shop, but they must purchase shampoo and towels. The group expects to wash 60 dogs. They plan to use 18 towels.

### Estimation

1. Complete both charts by writing the estimated total cost for each package or container.

Towels	Cost per Pack	Estimated Total Cost
A. Pack of 3	\$4.12	
B. Pack of 6	\$6.89	
C. Pack of 9	\$8.95	

Shampoo	Cost per Container	Estimated Total Cost
1. For 5 dogs	\$0.97	
2. For 10 dogs	\$1.53	
3. For 15 dogs	\$3.08	

2. Toni believes if they purchase the least expensive shampoo, they will have to use three times the amount to get the dogs clean. Write a new estimate for the cost of the least expensive shampoo.  
\_\_\_\_\_
3. The least expensive towels are not as absorbent as the others. Toni expects that they will need twice the number of towels to dry the dogs. Write a new estimate for the cost of the least expensive towels.  
\_\_\_\_\_
4. Which packs of towels and containers of shampoo should Toni and her friends choose? Why?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Enrichment 3-3

Name \_\_\_\_\_

Enrichment

**3-4**

## Cross-Country Trip

**Algebra**

Mr. Chow and his helper are driving across the country to deliver prize-winning pumpkins. Most of the highways he plans to take have a speed limit of 55 miles per hour. Use this speed to solve the problems below. Use regrouping and place values when you multiply to solve each exercise.

1. How far would Mr. Chow travel in 8 hours?

\_\_\_\_\_

2. If Mr. Chow drives from 6 A.M. to 6 P.M., how far would he travel?

\_\_\_\_\_

3. Mr. Chow had to slow down to 45 miles per hour in a construction zone. How far would he travel in the construction zone for  $2\frac{1}{2}$  hours?

\_\_\_\_\_

4. If the speed limit on one highway is 65 miles per hour, how far could Mr. Chow travel in 5 hours?

\_\_\_\_\_

5. How much farther would Mr. Chow travel in 5 hours driving 65 miles per hour than in 5 hours in a construction zone?

\_\_\_\_\_

6. Mr. Chow drove through several states on his return trip to visit relatives. He drove for 3 hours in a construction zone, 8 hours driving 55 miles per hour, and 2 hours driving 65 miles per hour. How many miles did he drive altogether?

\_\_\_\_\_

7. Mr. Chow took his prize-winning pumpkin to the state fair. He drove 112.5 miles at 45 miles per hour, 357.5 miles at 55 miles per hour, and 195 miles at 65 miles per hour. How many hours did he spend driving altogether?

\_\_\_\_\_

Name \_\_\_\_\_

Enrichment

**3-5**

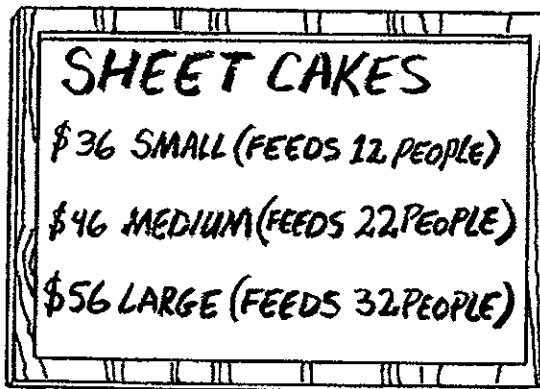
# Jackson's Bakery

**Algebra**



1. Jackson's Bakery sold 29 cheesecakes in one day. How much money did Jackson's Bakery make in one day from cheesecakes?
- 

2. Jackson's Bakery sold 15 ice cream cakes and 31 fruit tarts in one weekend. How much money did Jackson's Bakery make in one weekend from ice cream cakes and fruit tarts?
- 



3. The new pastry chef at Jackson's Bakery specializes in sheet cakes for parties. She sold 17 small, 11 medium, and 20 large sheet cakes in one week. How much money did Jackson's Bakery make in one week from sheet cakes?
- 

4. How many people would all of the sheet cakes sold in problem 3 feed?
- 

Enrichment 3-5

Name \_\_\_\_\_

Enrichment

**3-6**

## School Fair

**Algebra**

The fifth-grade students at River Dell Middle School are trying to set records during the annual school fair. Help them tally the totals for the events below.

1. The students put together 12 jigsaw puzzles. Each puzzle had 345 pieces. How many puzzle pieces did they put together in all?  
\_\_\_\_\_
2. The students made a gigantic s'more that all of the fairgoers enjoyed. They used 27 bags of marshmallows. Each bag had 198 marshmallows. How many marshmallows did the students use?  
\_\_\_\_\_
3. The students used 35 boxes of graham crackers to make the s'more. Each box had 208 graham crackers. How many graham crackers did the students use?  
\_\_\_\_\_
4. The students used 19 cases of chocolate to make the s'more. Each case had 154 bars of chocolate. How many chocolate bars did the students use?  
\_\_\_\_\_
5. The students painted an enormous mural. They used 21 cartons of paint. Each carton had 307 tubes of paint. How many tubes of paint did the students use?  
\_\_\_\_\_
6. The students made a tub of lemonade for the fairgoers. They used 46 cases of lemons. Each case held 105 lemons. How many lemons did the students use?  
\_\_\_\_\_

Name \_\_\_\_\_

Enrichment

3-7

## Writing Large Numbers

Write the following numbers in exponential notation.

**Number Sense**

- 1,000,000 \_\_\_\_\_
- $99 \times 99 \times 99 \times 99$  \_\_\_\_\_
- 49 \_\_\_\_\_
- 16 \_\_\_\_\_

Write the following numbers in standard form.

- 8 cubed \_\_\_\_\_
- 19 squared \_\_\_\_\_
- $7^4$  \_\_\_\_\_
- $10^9$  \_\_\_\_\_

Write the following numbers in expanded form.

- $97^6$  \_\_\_\_\_
- 481 squared \_\_\_\_\_
- $375^5$  \_\_\_\_\_
- 52 cubed \_\_\_\_\_
- Find the number that equals 121 when it is squared. \_\_\_\_\_
- Find the number that equals 216 when it is cubed. \_\_\_\_\_
- Barbara has a packing carton that is 14 inches long, 14 inches wide, and 14 inches tall. If the volume of the carton is the length times the width times the height, show the number of cubic inches the carton holds in exponential notation, expanded form, and standard form.  
\_\_\_\_\_  
\_\_\_\_\_

- Explain It** Bret's uncle owns a 10-mile square of land in Texas. Is that the same as  $10 \text{ mi}^2$ ?  
\_\_\_\_\_  
\_\_\_\_\_

Enrichment 3-7

Name \_\_\_\_\_

Enrichment

3-8

# Budgeting

Frank needs to go grocery shopping. He wants to buy items from each of the four food groups shown. He has a budget of \$10.00. Using the chart at the right, help Frank decide what he should buy.

## Decision Making

Fruits and Vegetables		Grains	
Strawberries	\$2.99	Bread	\$1.99
Apples	\$3.99	Bagels	\$3.49
Pears	\$1.69	Cereal	\$4.29
Dairy		Meat and Fish	
Milk	\$3.29	Turkey	\$2.99
Cheese	\$1.89	Hamburger	\$2.99
Yogurt	\$0.79	Tuna	\$1.89

1. What is the most Frank can spend on each food group if he spends the same on each?

\_\_\_\_\_

2. If Frank chooses 2 dairy items, can he still buy something from each of the other 3 groups?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Frank remembers that he has fruit already. Show a possible menu for the remaining groups. Tell how much he spent.

\_\_\_\_\_  
\_\_\_\_\_

4. Show one possible menu for Frank. Tell how much he spent.

\_\_\_\_\_  
\_\_\_\_\_

Name \_\_\_\_\_

Enrichment

**4-5**

# At the Amusement Park

The chart below shows in seconds how long certain rides at the amusement park take to complete a specific number of revolutions. In the exercises below, estimate first to find how long one revolution will take. Then find the actual time per revolution.

## Estimation

Ride	Number of Revolutions	Time (seconds)
Ferris wheel	5	515
Roller coaster	4	832
Merry-go-round	3	609
Swiss slalom	7	840

1. Ferris wheel \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Roller coaster \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Merry-go-round \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

4. Swiss slalom \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Enrichment 4-5

Name \_\_\_\_\_

Enrichment  
**4-6**

# Is the Bridge Safe?

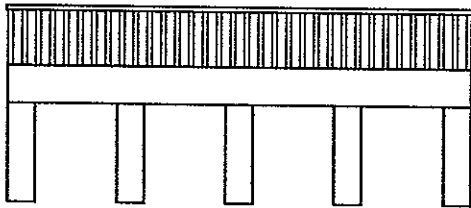
The Davis Construction Company follows certain rules for building safe bridges: The distance between the bridge's supports, called the *span*, must not be more than 100 ft. The chart at the right shows how to classify bridges as very safe, safe, or unsafe. Find the span length of each bridge below. Then tell whether the bridge is very safe, safe, or unsafe.

## Decision Making

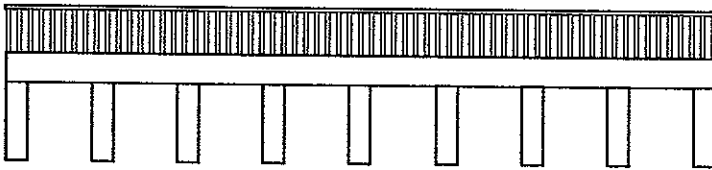
### Bridge Safety Ratings

Length of Span	Rating
0 to 50 ft	very safe
51 to 100 ft	safe
101 ft or more	unsafe

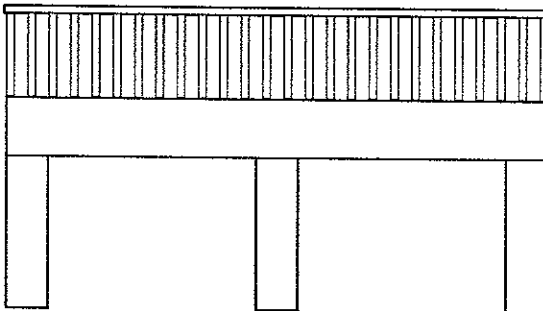
1. Length of bridge: 252 ft



2. Length of bridge: 336 ft



3. Length of bridge: 266 ft



Name \_\_\_\_\_

Enrichment

**4-7**

# Finding Factors

## Algebra

1. Fill in the chart to find all the factor pairs of 16. Then list the factor pairs of 16.

Try	Is It a Factor?	Factor Pair
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

2. Fill in the chart to find all the factor pairs of 21. Then list the factor pairs of 21.

Try	Is It a Factor?	Factor Pair
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Enrichment 4-7

Name \_\_\_\_\_

Enrichment

**5-3**

# Hearty Roots

An organic farm opened a farm stand to sell vegetables. Help the customers spend their money wisely.

**Decision Making**

## Hearty Roots

Vegetable	Price
Cucumbers	\$0.50 each or \$3.75 for a bag of 10
Tomatoes	\$1.98 for 1 lb or \$3.55 for 2 lb
Zucchini	\$0.60 each or \$5.59 for a dozen

1. One customer bought three 2-lb bags of tomatoes. How much did he save by buying these instead of six 1-lb bags?

\_\_\_\_\_

2. Another customer bought 8 cucumbers, 10 zucchini, and 1 pound of tomatoes. Based on the money he spent, show how the customer could have purchased more vegetables for less money.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. You have \$20.00 to spend at Hearty Roots. Give an example of how you could get the best value for the money. Tell what you would buy and how much money you would have left over.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Enrichment 5-3

Name \_\_\_\_\_

Enrichment

**5-5**

## Orbiting Estimates

Mercury makes a complete orbit around the Sun in 88 days. Mars makes a complete orbit around the Sun in 687 days. In the exercises below, use compatible numbers and multiplication to make the estimates.

**Estimation**

1. How many orbits around the Sun will Mercury make in 1,060 days? Show your work.

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2. Now use a different operation to estimate for the same problem. Show your work.

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3. Estimate the number of days it will take Mars to complete 12 orbits. Show your work.

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Enrichment 5-5

Name \_\_\_\_\_

Enrichment

**5-6**

## Park Areas

The chart at the right shows the area, in square miles, of four parks. In the exercises below, write your answers in square miles.

### Algebra

Park	Area (square miles)
A	656
B	269
C	164
D	147

1. If you divided Park A into 32 equal parts, each containing a whole number of square miles, how large would each part be? How large would the remaining area be?

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2. If you divided Park B into 53 equal parts, each containing a whole number of square miles, how large would each part be? How large would the remaining area be?

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3. If you divided Park C into 16 equal parts, each containing a whole number of square miles, how large would each part be? How large would the remaining area be?

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4. Complete the pictograph after choosing a picture to represent  $32 \text{ mi}^2$ . Be sure to represent any remaining area reasonably.

$$= 32 \text{ mi}^2$$

Park A	
Park B	
Park C	
Park D	

Name \_\_\_\_\_

Enrichment

**5-7**

## Teacher for a Day

**Reasoning**

You have been selected to be the teacher for a day. You are teaching division to your students. In the exercises below, explain how you can tell that each student has made an error. Then provide the correct quotient and remainder, if any.

1. Julie has written  $4,411 \div 22 = 220$ .

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2. Jorge has written  $7,128 \div 36 = 202$ .

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3. Jack has written  $11,716 \div 58 = 212$ .

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4. Jamie has written  $2,244 \div 22 = 120$ .

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Enrichment 5-7

Here are two divisibility rules to teach your students:

- A number is divisible by **8** if the last 3 digits are divisible by 8.
- A number is divisible by **9** if the sum of its digits is divisible by 9.

Are the following numbers divisible by 8 or 9, or both?

5. 202,008 \_\_\_\_\_

6. 45,600 \_\_\_\_\_

7. 30,030,003 \_\_\_\_\_

8. 2,160 \_\_\_\_\_

Name \_\_\_\_\_

Enrichment

**6-1**

## Log On

**Algebra**

Mel spends time each evening designing games on his computer. The number of minutes he spends can be represented by the variable  $c$ . Use the variable to complete the exercises below.

Enrichment 6-1

1. Write an algebraic expression to represent the number of minutes Mel's friend Gina spends designing games on her computer if she designs 45 min more an evening than Mel.  
\_\_\_\_\_
2. Write an algebraic expression to represent the time Mel will spend designing games on his computer in 9 weeks. (Remember: there are 7 days in 1 week.)  
\_\_\_\_\_
3. Mel designs games on his computer for 58 min ( $c = 58$ ). Mel's friend Lou spends half the amount of time designing games on his computer that Mel does. Write an algebraic expression to represent this, and solve for the value.  
\_\_\_\_\_
4. Mel spent  $c$  min designing games on his computer on Monday, 70 min designing games on Tuesday, and 92 min designing games on Wednesday. Wednesday's time can be represented by the variable  $w$ . The time Mel spent designing games on his computer on Monday was  $\frac{1}{4}$  the time spent on Wednesday ( $c = \frac{w}{4}$ ). How much time did Mel spend designing games on his computer in those 3 days?  
\_\_\_\_\_

Name \_\_\_\_\_

Enrichment

**7-1**

## Decimal Patterns

### Mental Math

1. Jennifer sets her binoculars to enlarge objects 10 times their actual size. If the length of an ant is 0.52 inches, what is its length as seen through her binoculars?  
\_\_\_\_\_
2. A store has a contest to guess the weight of 1,000 black jellybeans on display in its window. If each of the jellybeans weighs 0.072 ounces, what is the total weight of all the jellybeans?  
\_\_\_\_\_
3. Jason saved \$0.02 each day for 10,000 days. How much did he save in all?  
\_\_\_\_\_
4. Jefferson uses a microscope to observe a specimen in biology class. If his microscope enlarges objects 100 times their actual size and the specimen measures 0.009 inches, what is the size seen in the microscope?  
\_\_\_\_\_
5. Anya needs to buy 100 pounds of chocolate to make her holiday truffles. If chocolate sells for \$0.49 per pound, how much will Anya spend?  
\_\_\_\_\_
6. Tim planted a tree that was 0.017 feet tall. After 10 years, the tree was 1,000 times as tall as when he planted it. What is the height of the tree after 10 years?  
\_\_\_\_\_

Enrichment 7-1

Name \_\_\_\_\_

Enrichment  
**7-2**

## How Much Faster?

Ryan's Deli makes a sandwich in 1 min. The chart at the right indicates how long it takes other delis to make a sandwich in comparison to Ryan's. For example, Werner's Deli takes 2.2 times as long to make a sandwich as Ryan's. For the exercises below, determine if the statement is reasonable or unreasonable. Explain your answer.

### Reasonableness

Deli	Time Factor
Werner's	2.2
Main Street	0.6
Two Star	3.74

Enrichment 7-2

1. In 10 min, Ryan's Deli will make more than twice as many sandwiches as Werner's Deli.

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2. In 30 min, Main Street Deli will make more than twice as many sandwiches as Ryan's Deli.

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3. It takes the Two Star Deli under 38 min to make 10 sandwiches.

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Name \_\_\_\_\_

Enrichment

**7-4**

## Decimal Dinners

### Number Sense

1. Gina wants to bake pumpkin pies for a Thanksgiving potluck dinner. She needs 8.8 pounds of pumpkins that sell for \$0.93 per pound. How much will she spend? Round to the nearest cent.  
\_\_\_\_\_
2. Tony is making his sweet-potato side dish for the potluck. Sweet potatoes are on sale at the market for \$0.67 per pound. If Tony needs 9.3 pounds of sweet potatoes, how much will he spend? Round the cost to the nearest cent.  
\_\_\_\_\_
3. Reba is making a tablecloth for the dessert table. She needs to decide between the autumn-leaf fabric that sells for \$4.99 per yard and the turkey-print fabric that sells for \$5.75 per yard. If Reba needs 3.6 yards, how much will she spend for each of the fabrics? Round the cost to the nearest cent.  
\_\_\_\_\_
4. Jack is mixing hot apple-cider punch for the potluck. His recipe calls for 12.4 quarts of apple cider. If apple cider sells for \$1.82 per quart, how much will Jack spend? Round the cost to the nearest cent.  
\_\_\_\_\_
5. Lindsay is in charge of buying turkeys for Thanksgiving dinner. The turkeys she has selected weigh a total of 49.5 pounds. If turkey is on sale for \$2.17 per pound, how much will Lindsay spend? Round the cost to the nearest cent.  
\_\_\_\_\_
6. Wayne is making a string-bean casserole for the potluck. He needs 3.8 pounds of string beans, which sell for \$0.82 per pound. How much will Wayne spend on string beans? Round the cost to the nearest cent.  
\_\_\_\_\_

Name \_\_\_\_\_

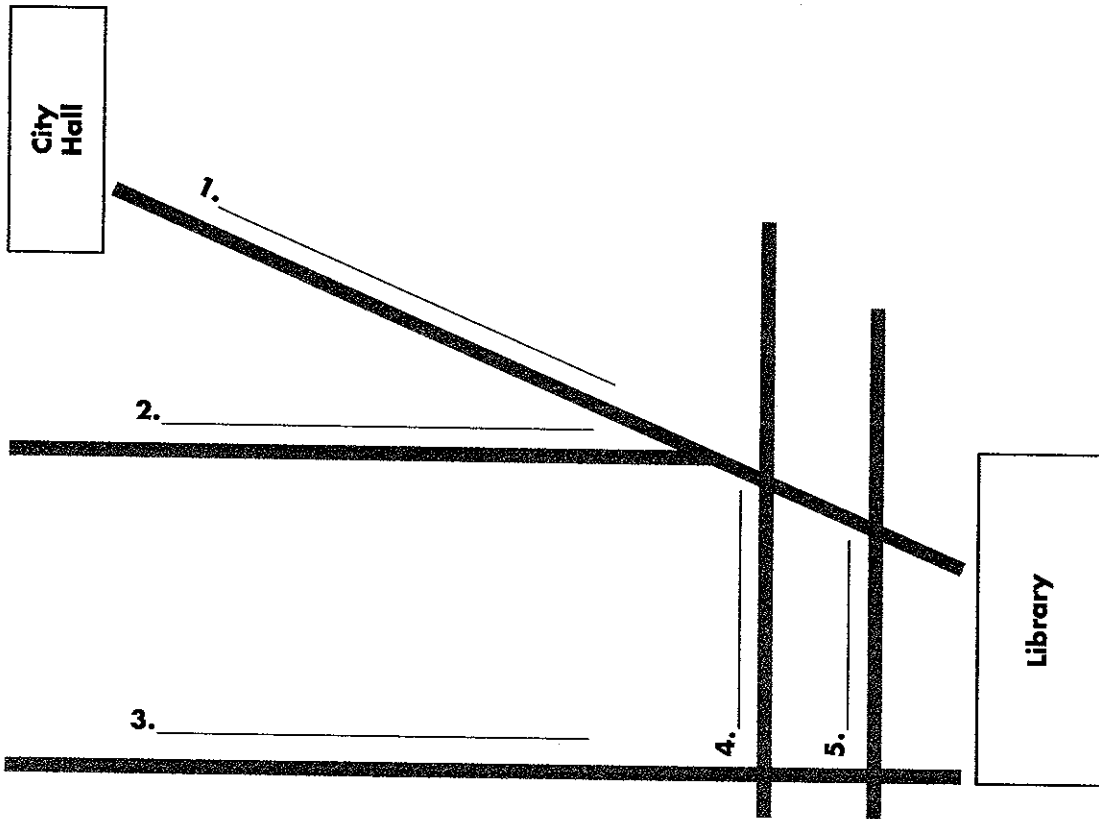
Enrichment

8-1

# The Streets Have No Names!

Label the map below by reading the clues that follow.

**Reasoning**



Enrichment 8-1

- Frontage Road and 5th Street are parallel to each other.
- Davis Street is **NOT** parallel to and does **NOT** intersect Elwood Avenue.
- Spring Road is parallel to Davis Street.
- Frontage Road is perpendicular to Davis Street.
- The best route from the Library to City Hall is along Elwood Avenue.

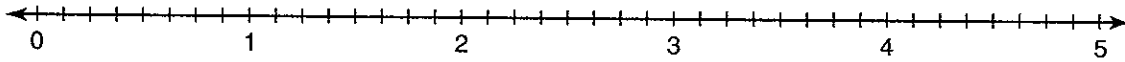
Name \_\_\_\_\_

Enrichment

**9-9**

## Secret Code

Place the following points on the number line. Label the points with the letters to find the secret message. **Decision Making**



1.  $A = \frac{1}{4}$

2.  $N = 2\frac{1}{8}$

3.  $E = 3\frac{7}{8}$

4.  $O = 4\frac{2}{8}$

5.  $E = 3\frac{5}{8}$

6.  $O = 2\frac{7}{8}$

7.  $E = 4\frac{1}{2}$

8.  $R = 2\frac{8}{8}$

9.  $F = 2\frac{3}{4}$

10.  $R = \frac{4}{1}$

11.  $F = 1\frac{7}{8}$

12.  $S = 1\frac{1}{4}$

13.  $H = \frac{1}{2}$

14.  $T = \frac{3}{8}$

15.  $I = 1\frac{1}{8}$

16.  $U = \frac{8}{4}$

17.  $M = \frac{1}{8}$

18.  $V = 3\frac{3}{4}$

19.  $N = 4\frac{3}{8}$

20.  $Y = 4\frac{1}{8}$

Enrichment 9-9

Name \_\_\_\_\_

Enrichment

**10-1**

# Adding and Subtracting Fractions

**Number Sense**

Enrichment 10-1

1. Friends at a sleepover decided to make their favorite snacks. If  $\frac{3}{11}$  made ice cream cones,  $\frac{5}{11}$  made popcorn,  $\frac{1}{11}$  made fruit salad, and  $\frac{2}{11}$  made ice cream sundaes, what fraction of the snacks contained ice cream?

\_\_\_\_\_

2. Gary's guinea pig had 15 babies:  $\frac{5}{15}$  were white,  $\frac{3}{15}$  were black, and  $\frac{7}{15}$  were orange. What fraction of the guinea pig babies are not black?

\_\_\_\_\_

3. Mrs. Jefferson is making a quilt. Her design has  $\frac{3}{20}$  blue squares,  $\frac{7}{20}$  yellow squares,  $\frac{9}{20}$  white squares, and  $\frac{1}{20}$  red squares. What fraction of the squares are not white?

\_\_\_\_\_

4. At the Sunshine Plaza Video Store,  $\frac{3}{19}$  of the videos are documentaries and  $\frac{5}{19}$  of the videos are musicals. What fraction of the videos are of these two categories combined?

\_\_\_\_\_

5. Jamel mixes  $\frac{2}{3}$  of a cup of brown sugar with  $\frac{2}{3}$  of a cup of white sugar. How much sugar is in the bowl?

\_\_\_\_\_

6. Pam roller-bladed  $\frac{3}{12}$  of a mile on Monday,  $\frac{5}{12}$  of a mile on Tuesday,  $\frac{2}{12}$  of a mile on Wednesday,  $\frac{7}{12}$  of a mile on Thursday, and  $\frac{9}{12}$  of a mile on Friday. How many miles did she roller-blade in all?

\_\_\_\_\_

Name \_\_\_\_\_

Enrichment

**10-5**

## Mixed Sums

**Number Sense**

1. Annie walked her dog  $2\frac{1}{4}$  miles from her house to the dog park and then  $3\frac{7}{8}$  miles around the park and back home. How many miles did she walk?
- 

2. John's full backpack weighs  $15\frac{1}{2}$  pounds, and Tyrone's full backpack weighs  $24\frac{3}{5}$  pounds. What is the total weight of both boys' backpacks?
- 

3. Julie has two extension cords with lengths of  $22\frac{1}{6}$  feet and  $26\frac{3}{4}$  feet. How long an extension can she make by plugging them together?
- 

4. Terry weighed his two cats at the veterinarian's office. Boots weighed  $12\frac{9}{10}$  pounds, and Tiger weighed  $13\frac{1}{4}$  pounds. What is the total weight of both cats?
- 

5. David ran  $9\frac{3}{4}$  miles on Saturday and  $7\frac{1}{10}$  miles on Sunday. How many miles did he run on the weekend?
- 

6. Amanda's library books weigh  $4\frac{3}{8}$  pounds, and her water bottle weighs  $1\frac{7}{16}$  pounds. What is the total weight of her books and water bottle?
-

Name \_\_\_\_\_

Enrichment

**11-1**

# Multiplying Fractions and Whole Numbers

**Number Sense**

1. Brittany is making trays of fudge. Her recipe calls for  $\frac{2}{3}$  cup of walnuts for each batch of fudge. How many cups of walnuts does she need to make 27 batches of fudge?  
\_\_\_\_\_
2. Gerard's baby brother spends  $\frac{7}{8}$  of his day sleeping. How many hours does his baby brother sleep?  
\_\_\_\_\_
3. Sandra received 15 \$20 bills for her birthday. She spent  $\frac{3}{5}$  and saved  $\frac{2}{5}$ . How much did Sandra spend? How much did she save?  
\_\_\_\_\_
4. Douglas is making catnip mice to sell at the crafts fair. Each catnip mouse calls for  $\frac{5}{6}$  ounce of catnip. How many ounces of catnip does he need to make 96 catnip mice?  
\_\_\_\_\_
5. Wendy spent  $\frac{3}{8}$  of the last two days practicing for an ice-skating competition. How many hours did she spend practicing?  
\_\_\_\_\_
6. Louis earned \$256 helping his mother paint a house. He spent  $\frac{11}{16}$  of it on a computer program. How much did Louis spend on the program?  
\_\_\_\_\_
7. The Cupcake Café's recipe for cheesecake calls for  $\frac{2}{3}$  cup of cream cheese. How many cups of cream cheese does the café use to make 63 cheesecakes?  
\_\_\_\_\_

Enrichment 11-1

Name \_\_\_\_\_

Enrichment

11-2

## Multiplying Fractions

**Number Sense**

1. In voting for the fifth-grade class president, only  $\frac{1}{3}$  of the students cast votes. What fraction of the whole class voted for Tim? for Selena? Who received the most votes?

Class President Candidate	Fraction of Votes Received
Tim	$\frac{2}{6}$
Selena	$\frac{1}{4}$

2. Mrs. Garcia had  $\frac{2}{3}$  of a pumpkin pie left. Her sons ate  $\frac{3}{8}$  of what was left. What fraction of the whole pie did her sons eat?

3. Susan picked a squash that weighed  $\frac{8}{15}$  lb. Larry picked a squash that weighed  $\frac{1}{4}$  as much as Susan's squash. How much did Larry's squash weigh?

4. Erica had  $\frac{7}{8}$  of a pizza left. Her friend ate  $\frac{1}{6}$  of the pizza that was left. What fraction of the whole pizza did her friend eat?

5. The trail that Joe jogs is  $\frac{3}{5}$  mile long. Only  $\frac{1}{9}$  of the trail is paved. How long is the paved section of the trail?

Enrichment 11-2

Name \_\_\_\_\_

Enrichment

**12-4**

## What's the Area?

**Algebra**

1. Jack wants to put a mat on his tree house floor. His tree house measures 9 feet by 7 feet. He can purchase a mat for \$5 per square foot. How much will Jack spend to purchase a mat for his tree house?

\_\_\_\_\_

2. Which has the greater area: a 7-by-9-meter rectangle, or a square with a side of 8 meters?

\_\_\_\_\_

\_\_\_\_\_

3. Trish is breaking ground for a rose garden in her backyard. The garden will be square with a side of 26 m. What is the area of Trish's rose garden?

\_\_\_\_\_

4. Mike is building a deck. The deck will be rectangular with a length of 35 m and a width of 12 m. What is the area of Mike's deck?

\_\_\_\_\_

5. Selena is designing a dog kennel. The kennel will have a length of 75 m and a width of 50 m. What will be the perimeter of Selena's kennel? What will be the area of Selena's kennel?

\_\_\_\_\_

6. Eugene wants to tile the floor of his media room. His media room measures 27 feet by 13 feet. He can purchase the tile on sale for \$8 per square foot including installation. How much will Eugene spend to tile the floor of his media room?

\_\_\_\_\_

Enrichment 12-4

Name \_\_\_\_\_

Enrichment

**14-4**

# How Far is That? How Much is That? How Heavy is That?

**Number Sense**

1. A long-distance runner ran 2 miles in 12 minutes and 23 seconds.

How many yards did she run? \_\_\_\_\_

How many feet did she run? \_\_\_\_\_

How many inches did she run? \_\_\_\_\_

2. Jonathan's family drinks 576 fluid ounces of milk every three days.

How many cups is this?  
\_\_\_\_\_

How many pints is this?  
\_\_\_\_\_

How many quarts is this?  
\_\_\_\_\_

How gallons is this?  
\_\_\_\_\_

3. A small airplane weighs 10,000 pounds.

How many tons does it weigh? \_\_\_\_\_

How many ounces does it weigh? \_\_\_\_\_

Enrichment 14-4

Name \_\_\_\_\_

Enrichment

**14-6**

## Find the Time

Use the table to answer the questions below.

**Reasoning**

Attraction	Days	Open	Close
Dallas Heritage Village	Tues.–Sat. Sun.	10:00 A.M. 12:00 noon	4:00 P.M. 4:00 P.M.
Texas Discovery Gardens	Mon.–Sat.	10:00 A.M.	4:00 P.M.
The Women’s Museum	Tues.–Sun.	12:00 noon	5:00 P.M.
Museum of Nature and Science	Mon.–Sat. Sun.	10:00 A.M. 12:00 noon	5:00 P.M. 5:00 P.M.

1. How many hours longer is the Museum of Nature and Science open on Saturday than on Sunday? \_\_\_\_\_
2. How many hours is the Dallas Heritage Village open on Sundays? \_\_\_\_\_
3. Raul worked at the Texas Discovery Gardens on Friday from opening time until 11:30 A.M. How many hours did he work? \_\_\_\_\_
4. The Broderick family arrived at the Texas Discovery Gardens at 1:00 P.M. They stayed for 2 hours and 15 minutes. What time did they leave the gardens? \_\_\_\_\_
5. Susan is making plans to visit The Women’s Museum on Tuesday. It takes her 25 minutes by bus to arrive there from her home. If she wants to arrive at opening time, what time should she leave her house? \_\_\_\_\_

Enrichment 14-6

Name \_\_\_\_\_

Enrichment

**15-1**

## Equation Solver

For each problem, write an equation and then solve.

**Patterns**

1. Tom has 84 relatives. He has 37 relatives on his father's side. How many relatives does he have on his mother's side? Let  $R$  equal the number of relatives on Tom's mother's side.
- 

2. Brianna had \$29 in the cash box at her garage sale. After she sold a surfboard, she had \$185 in the cash box. How much money did she receive for the surfboard? Let  $S$  equal the amount that the surfboard sold for at the garage sale.
- 

3. Tony gave away 12 samples of homemade soap. He had 51 samples remaining. How many samples of soap did Tony start off with? Let  $X$  equal the number of soap samples that Tony had.
- 

4. During the last weekend of summer, 65 male campers and 48 female campers went horseback riding. How many campers in all went horseback riding? Let  $C$  equal the number of campers who went horseback riding.
- 

5. Amanda and Jerry have 106 DVDs. If Jerry has 59 DVDs, how many DVDs does Amanda have? Let  $A$  equal the number of DVDs that Amanda has.
- 

Enrichment 15-1

Name \_\_\_\_\_

Enrichment

**18-7**

## Mean Scores

**Number Sense**

1. Solomon has been keeping track of his scores on daily spelling tests for one week. Use his data to find Solomon's mean score.

Day	Monday	Tuesday	Wednesday	Thursday	Friday
Spelling Score	94	88	96	92	100

\_\_\_\_\_

2. Terri went to 6 movies during August. They had play lengths of 120 min, 108 min, 99 min, 105 min, 116 min, and 130 min. What was the mean play length for the movies?

\_\_\_\_\_

3. Janet recorded the height of the tallest buildings in Dallas. Use her data to find the mean height.

Building	Height (ft)
Bank One Center	787
Texas Commerce Plaza	738
Fountain Place	720
Trammel Crow Tower	686

\_\_\_\_\_

4. Tim recorded the lengths of the longest vehicular tunnels in North America. Use his data to find the mean length.

Tunnel	Length (ft)
Brooklyn-Battery	9,117
Holland Tunnel	8,557
Ted Williams Tunnel	8,448
Lincoln Tunnel	8,216

\_\_\_\_\_

Enrichment 18-7

Name \_\_\_\_\_

Enrichment

**18-8**

## School Surveys

**Number Sense**

1. Angela surveyed the students in her school. Use her results below to find the median, mode, and the range for Angela's data.

Recreational Reading	Number of students
Comic book	10
Biography	6
Novel	13
How-to book	7
Mystery	9
Joke book	7

- 
2. Daniel surveyed the students in his school. Use his results below to find the median, mode, and the range for Daniel's data.

Favorite Music	Number of students
Rock	17
Country	5
Rap	11
Classical	9
Jazz	12
New Age	5

- 
3. If Daniel added Hip-Hop to his survey with 13 students selecting that category, how would his data change?

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