Name _____   Date _____

Addition Properties

Example
$438 + 0 = 438$

Find each sum.

1. $6 + (14 + 17) =$ _____   **2.** $93 + 28 =$ _____

3. $36 + 93 =$ _____   **4.** $(45 + 5) + 16 =$ _____   **5.** $15 + 76 =$ _____

Complete each number sentence.
Tell which property of addition you used.

6. $22 + 88 =$ _____ $+ 22$

_____

7. $3 + (5 + 8) = (3 +$ _____$) + 8$

_____

8. $67 + 0 =$ _____

_____

9. $(45 + 73) + 39 = 45 + (73 +$ _____$)$

_____

10. $0 + 934 =$ _____

_____

11. $57 + 82 = 82 +$ _____

_____

Problem Solving • Reasoning

Use the table for Problems 12 and 13.

12. Are more children than teens pet owners? How can you use one of the properties of addition to help you decide?

_____

_____

Pet Owners			
	Children	Teens	Adults
Cats	24	56	35
Dogs	56	35	39
Gerbils	35	39	27

13. Do more people own cats than dogs? How can you answer without adding?

_____

_____

Name _____   Date _____

Add Whole Numbers

Example
745 + 362 **1,107**

Find each sum.

1. 559
+ 298

2. 837
+ 854

3. 1,345
+ 989

4. 3,662
+ 1,589

5. 634
+ 459

6. 2,075
+ 2,683

7. 11,989
+ 7,567

8. 23,574
+ 15,902

9. 63,629
+ 774

10. 632 + 728

11. 1,067 + 493

12. 2,358 + 2,476

13. 37,328 + 4,063

14. 71,236 + 14,931

15. 55,408 + 39,277

Problem Solving • Reasoning

16. There is only one city in Delaware County, and that is Dunston. The population of Dunston is 65,490. There are 43,118 people living in Delaware County, but not in Dunston. What is the total population of Delaware County?

17. In 1999, 53,728 football fans attended the spring Kick-Off Fun Bowl. In 2000, 58,934 people attended. What was the total attendance for these two years?

Name _____ Date _____

Subtract Whole Numbers

Subtract. Add to check that your answer is correct.

Example				
583	**1.** 876	**2.** 3,992	**3.** 6,123	**4.** 8,825
−148	− 349	− 475	− 4,626	− 7,736
435				

5. 7,393	**6.** 4,821	**7.** 56,215	**8.** 39,947	**9.** 88,458
− 488	− 4,653	− 23,997	− 28,694	− 27,399

10. 896 − 725

11. 695 − 438

12. 2,544 − 629

_____

13. 4,772 − 2,936

14. 6,338 − 5,934

15. 8,772 − 5,385

_____

16. 25,599 − 16,714

17. 75,129 − 24,662

18. 99,128 − 36,544

_____

Problem Solving • Reasoning

19. There are 43,230 dogs in Jonesville. There are 55,911 cats. How many more cats than dogs live in Jonesville?

20. On Monday, 33,385 people watched the local news. On Tuesday, 33,975 people watched the news. How many fewer people watched the broadcast on Monday?

Name _____ Date _____

Estimate Sums and Differences

Round each number to the nearest ten.
Then estimate.

Example
76 + 22
80 + 20 = **100**

1. 68 − 32

_____

2. 191 + 57

_____

3. 4,033 − 692

_____

Round each number to the nearest hundred or dollar.
Then estimate.

4. 329 + 418

_____

5. $8.03 − $5.92

_____

6. 1,243 + 2,789

_____

7. 4,572 + 6,428

_____

8. 914 − 638

_____

9. 745 + 206

_____

10. $60.36 − $5.64

_____

11. 7,439 − 2,919

_____

12. 836 + 127

_____

13. 549 + 333

_____

14. $12.99 − $4.03

_____

15. 7,208 − 3,896

_____

Problem Solving • Reasoning

16. James had about 779 stamps in his stamp collection. His sister gave James her old stamp collection of 403 stamps. About how many stamps does James have now?

_____

17. The baker made 1,215 muffins last month. This month she baked 1,478 muffins. About how many muffins did the baker make in these two months?

_____

16 Use with text pages 64–65.

Name _____ Date _____

Problem-Solving Skill: Estimated or Exact Answers

Each summer the Whitfield Recreation Department offers summer classes for children. Classes are offered in three sessions. Enrollment for the first session is shown in the table.

Classes	Students Enrolled in First Session
Swimming	283
Martial Arts	192
Computer	217
Painting	95

Use the table. Decide whether you need an estimate or an exact answer. Then solve.

1. In the first session, about how many more students signed up for martial arts classes than enrolled in painting classes?

Think: Is an estimate enough to solve the problem?

_____

_____

2. At the end of the session, each swimmer who passes a basic test receives a certification card. If all the swimmers enrolled in the class pass the test, how many certification cards will be needed?

Think: Is the question asking for an exact answer?

_____

Solve. Use the table above. Use these or other strategies.

Problem-Solving Strategies

| • Work Backward | • Guess and Check | • Write an Equation | • Use Logical Thinking |

3. Twenty-four more students enrolled in the swimming class in the 2nd session than in the first session. How many students signed up for swimming in the second session?

_____

4. In the first session, 33 students did not pass the swimming test. How many students received their certification cards at the end of the first session?

_____

Name _____ Date _____

Subtract Across Zeros

Write each difference.

Example
705
−338
367

1. 601
−298
___

2. 800
− 443
___

3. 509
− 197
___

4. 1,203
− 485
___

5. 4,808
− 1,236
___

6. 8,008
− 7,921
___

7. 21,070
− 12,993
___

8. 95,000
− 63,772
___

9. 80,030
− 25,094
___

10. 400 − 230

_____

11. 930 − 390

_____

12. 1,200 − 873

_____

13. 3,078 − 1,345

_____

14. 9,004 − 3,333

_____

15. 7,701 − 2,999

_____

16. 41,010 − 18,808

_____

17. 98,000 − 76,121

_____

18. 65,002 − 39,299

_____

Problem Solving • Reasoning

**19.** Helen and John saved pennies for years. When they finally decided to put them in wrappers, it took days. Helen rolled 7,200 pennies. John rolled 6,893 pennies. How many more pennies did Helen roll?

_____

20. The library in Middleton has 55,090 books on its shelves. The library in Brazleton has only 10,468 books. How many fewer volumes does the Brazleton Library own?

_____

Name _____   Date _____

Problem-Solving Application: Use Operations
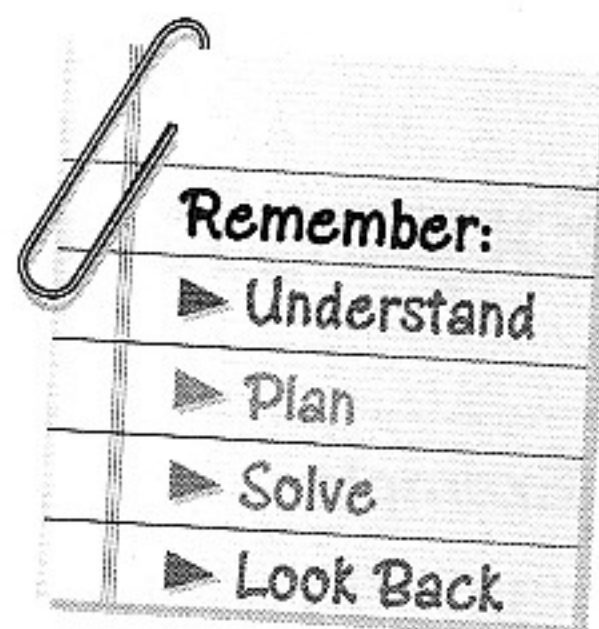
Use addition or subtraction to solve each problem.

1. The city of Jackson is studying 4 intersections to see if a traffic signal is needed. During one week, 47,458 cars passed through the intersections. Bill counted 9,936 cars passing through the Dun intersection. How many cars passed through the other 3 intersections?

Think: Do I need to find the total amount or a part of the total amount?

_____

2. During that week, 16,901 cars were counted passing through the Benson intersection. During that same week, 8,047 cars passed through the Clarion intersection. How many cars passed through these two intersections during the week?

Think: Do I need to find the total amount, or a part of the total amount?

_____

Solve. Use these and other strategies.

Problem-Solving Strategies

• Draw a Picture   • Write an Equation   • Solve a Simpler Problem   • Use Logical Thinking

3. There are 10,050 licenses for dogs in the city of Jackson. There are 6,428 licenses for cats. How many more dogs than cats are there in Jackson?

_____

4. Jackson has 4 city parks. Three of the parks have 5 tennis courts. The fourth park has 8 tennis courts. How many tennis courts are there in all?

_____

5. The Mayor of Jackson announced that the year 2003 would be the 150th anniversary of the founding of the city. In what year was Jackson settled?

_____

6. On a summer day, 458 people visited the art museum in the afternoon, and 367 people visited in the evening. How many people visited that day?

_____

Name _____ Date _____

Expressions and Equations

Example
$(30 + 5) + (14 - 7)$
$35 \quad + \quad 7$
42

Simplify each expression.

1. $(23 - 6) + (14 + 12)$ **2.** $10 + (32 - 4)$

_____   _____

3. $(19 + 20) - (23 - 18)$ **4.** $(58 - 35) + 22$ **5.** $(47 - 15) - (21 - 17)$

_____   _____   _____

Complete using >, <, or = for each ◯.

6. $8 + (95 - 22) \bigcirc (95 - 22) + 8$ **7.** $(55 - 6) + 3 \bigcirc 65 - (29 - 26)$

8. $23 + (17 - 13) \bigcirc 33 - (13 - 5)$ **9.** $(45 + 5) - 30 \bigcirc (67 - 27) - 20$

Write the missing number in each equation.

10. $35 = (25 + \text{\_\_\_\_}) - 5$ **11.** $22 + 4 = (44 - \text{\_\_\_\_}) + 3$

12. $(16 + \text{\_\_\_\_}) + (14 - 7) = 18 + 22$ **13.** $18 = (48 + \text{\_\_\_\_}) - 47$

Problem Solving • Reasoning

14. Jodie had a set of 24 drinking cups. Her cat broke 8 of them. Jodie went to a store to buy more cups but could only find 6 cups to match her set. Write an expression for the number of cups Jodie has now.

_____

15. Erika earned $25 baby-sitting. Then she earned $12 baby-sitting. She spent $20 on a gift for her sister's birthday. Write an expression for the amount of money Erika has now.

_____

Name _____ Date _____

Write and Evaluate Algebraic Expressions

Example
$n + 9$
$6 + 9$
15

Evaluate each expression when $n = 6$.

1. $n - 1$

2. $11 + n$

3. $n + 23$

_____ _____ _____

4. $(n + n) - 4$

5. $43 - n$

6. $(35 - n) + n$

7. $(n + n) + n$

_____ _____ _____ _____

Evaluate each expression when p = 10.

8. $15 + p$

9. $p - 8$

10. $(p + 4) - 2$

11. $p - (17 - 11)$

_____ _____ _____ _____

12. $(p + p) + 4$

13. $(26 - p) + 3$

14. $(p + p) - 13$

15. $2 + p + 30$

_____ _____ _____ _____

16. $(50 - p) - 25$

17. $(p + p) - 7$

18. $p + p + p$

19. $47 - (p + p)$

_____ _____ _____ _____

Problem Solving • Reasoning

20. Mark is 15 inches taller than Nick. Let x stand for Nick's height in inches. Write an expression for Mark's height. Then use your expression to find Mark's height if Nick is 48 inches tall.

21. Katie earned $23 less than Emily did on Saturday. Let m stand for the amount of money Emily earned. Write an expression for the amount of money Katie earned. Then evaluate the expression if Emily earned $41.

_____   _____

Name _____   Date _____

Write and Solve Equations

Example
$4 + n = 15$
$4 + 11 = 15$
$n = 11$

Solve each equation. Check the solution.

1. $n - 12 = 8$

2. $n + 3 = 7$

3. $17 - n = 2$

_____   _____   _____

4. $m - 15 = 5$

5. $18 - l = 12$

6. $36 = t + 19$

_____   _____   _____

7. $10 + r = 37$

8. $23 = p + 9$

9. $s - 19 = 5$

_____   _____   _____

10. $23 + n = 42$

11. $p - 14 = 22$

12. $x + x = 14$

_____   _____   _____

13. $8 + r + 3 = 20$

14. $x - 45 = 45$

15. $23 = n + 5$

_____   _____   _____

Problem Solving • Reasoning

16. Clare and Kate are playing checkers. They keep track of how many games each wins. When they finish, Kate has won 13 more games than Clare has. Write an equation you could use to find how many games Kate has won if the girls played 21 games. Then solve your equation.

_____

17. Josh earns money by cutting lawns in his neighborhood. Last week, he earned $10 more than he did this week. Write an equation you could use to find the total amount of money Josh earned in both weeks, if he earned $18 this week.

_____

Name _____ Date _____

Solving Addition Equations

1. Solve the equation $m + 7 = 12$. _____ Complete the tables below.

Start with the equation $m + 7 = 12$.

	Add this number to each side.	Write the new equation.	Solve the new equation.	Is the solution the same as the solution to $m + 7 = 12$?
2.	3		$m = 5$	yes
3.	6			
4.	10			

Start with the equation $m + 7 = 12$.

	Subtract this number from each side of the equation.	Write the new equation.	Solve the new equation.	Is the solution the same as the solution to $m + 7 = 12$?
5.	4		$m = 5$	yes
6.	5			
7.	6			

Name _____ Date _____

Equations With Two Variables

Complete each function table.

Example

$b = a - 6$

a	b
9	3
10	4
11	5

1. $n = s + 4$

s	n
1	
3	
	9

2. $z = 3 + x$

x	z
2	
4	
	9

3. $p = l - 2$

l	p
8	
6	
	2

Write an equation for each function table.

4.

c	a
18	12
15	9
12	6

5.

o	k
1	6
5	10
9	14

6.

f	d
6	2
8	4
10	6

7.

h	i
3	10
10	17
6	13

_____ _____ _____ _____

Problem Solving • Reasoning

8. Suppose that Brad is 11 inches taller than Kenton. Let *b* stand for Brad's height. Let *k* stand for Kenton's height. Write an equation that shows this relationship. Then use your equation to find Brad's height when Kenton is 46 inches tall.

9. Paul and Frank play 32 games of chess. Let *p* stand for the number of games won by Paul. Let *f* stand for the number of games won by Frank. Write an equation that shows this relationship. Then use your equation to find how many games Frank wins when Paul wins 14 games.

_____ _____

_____ _____

Name _____ Date _____

Problem-Solving Strategy: Guess and Check
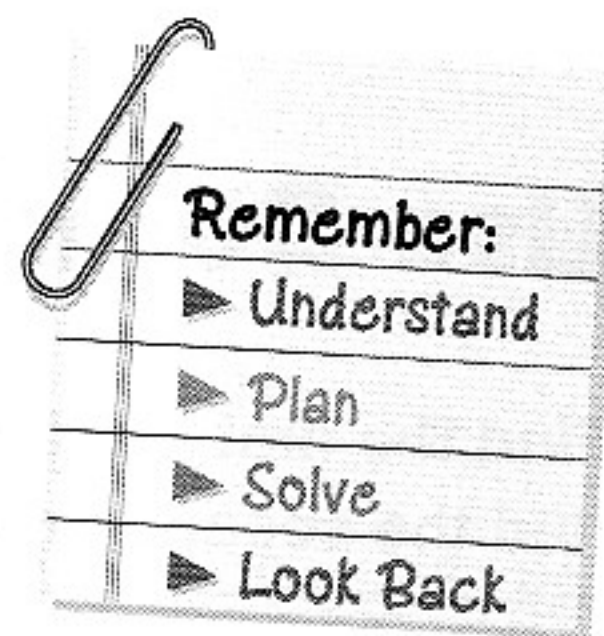
The Volunteer Fire Department of Chatfield holds a street fair every summer to raise funds for new equipment. The fair features games, amusement park rides, and lots of food.

1. Mrs. Donaldson plays bingo on two different nights of the fair. She wins a total of 25 games for the 2 nights. The second night she won 7 more games than she did the first night. How many games did she win each night?

   Think: What is the total number of wins?

   _____

   _____

2. The total number of people who rode the carousel on the 11th and 12th turns of the night was 65. There were 11 more people on the 11th turn than there were on the 12th turn. How many rode the carousel each time?

   Think: What is the total number of riders on the 2 turns?

   _____

   _____

Solve. Use these and other strategies.

Problem-Solving Strategies

| • Make a Table | • Write an Equation | • Guess and Check | • Use Logical Reasoning |

3. Golda and her mother visit the booth where a man guesses ages. Golda's Mom is 29 years older than Golda. If Golda is 12, how old is her mother?

   _____

4. The ferris wheel has 12 carts. Each cart holds no more than 3 people. What is the maximum number of people that can ride the ferris wheel at one time?

   _____

5. Jenny, Lynn, Terri, and Cinda buy cotton candy. Four different colors are available: pink, blue, yellow, and violet. If each girl buys a different color, how many ways could they purchase cotton candy?

   _____

6. Bob and James buy tickets for the rides at the main gate. Bob buys 12 more tickets than James. Together they have 76 tickets. How many tickets does each boy have?

   _____