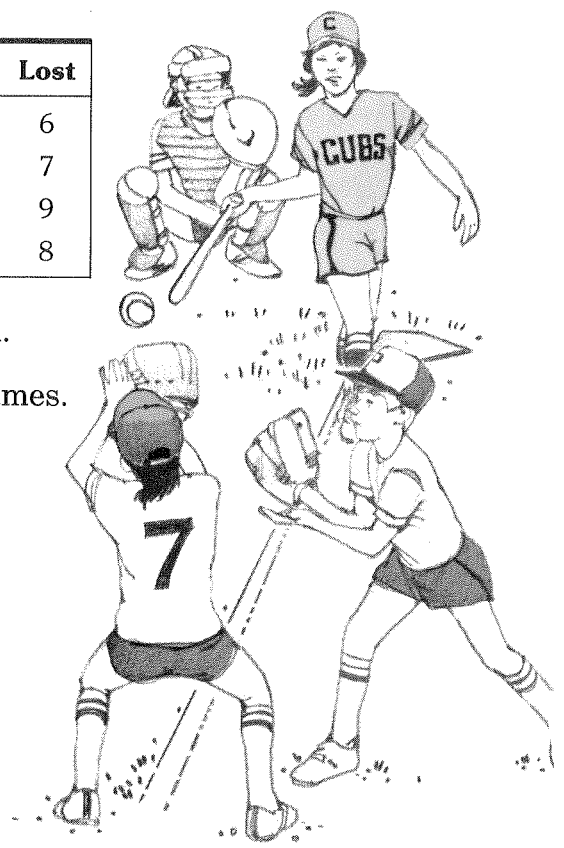


BASIC FACTS

Reviewing Addition Facts

The Cubs won the Little League District Championship. How many games did they play?

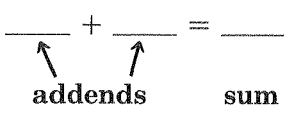
	Won	Lost
Cubs	9	6
Pirates	8	7
Cards	5	9
Giants	6	8



We want to know how many games the Cubs played.

We know the Cubs won ____ games and lost ____ games.

To find the total games played, we add the games won and the games lost. We add ____ and ____.



The Cubs played ____ games in all.

Understanding the basic properties of addition makes it easier to find sums.

Commutative Property
Two numbers can be added in any order without affecting the sum.

Associative Property
Addends can be grouped in any order without affecting the sum.

Zero Property
When zero is one of two addends, the sum is the other addend.

$6 + 5 = \underline{\quad}$

$(3 + 6) + 4 = \underline{\quad}$

$8 + 0 = \underline{\quad}$

$5 + 6 = \underline{\quad}$

$3 + (6 + 4) = \underline{\quad}$

$0 + 8 = \underline{\quad}$

Getting Started

Complete the number sentences.

1. $6 + 4 = \underline{\quad}$ 2. $8 + 8 = \underline{\quad}$ 3. $9 + 0 = \underline{\quad}$ 4. $7 + 1 = \underline{\quad}$

Add. Check by adding in the reverse order.

- | | | | | | |
|--|--|--|---|---|--|
| 5. $\begin{array}{r} 3 \\ + 8 \\ \hline \end{array}$ | 6. $\begin{array}{r} 5 \\ + 4 \\ \hline \end{array}$ | 7. $\begin{array}{r} 9 \\ + 2 \\ \hline \end{array}$ | 8. $\begin{array}{r} 7 \\ 1 \\ + 8 \\ \hline \end{array}$ | 9. $\begin{array}{r} 3 \\ 6 \\ + 5 \\ \hline \end{array}$ | 10. $\begin{array}{r} 7 \\ 8 \\ + 0 \\ \hline \end{array}$ |
|--|--|--|---|---|--|

Practice

Complete the number sentences.

- | | | | |
|---------------------------------|---------------------------------|---------------------------------|---------------------------------|
| 1. $4 + 4 = \underline{\quad}$ | 2. $7 + 5 = \underline{\quad}$ | 3. $3 + 7 = \underline{\quad}$ | 4. $9 + 3 = \underline{\quad}$ |
| 5. $2 + 8 = \underline{\quad}$ | 6. $8 + 6 = \underline{\quad}$ | 7. $7 + 6 = \underline{\quad}$ | 8. $0 + 5 = \underline{\quad}$ |
| 9. $6 + 3 = \underline{\quad}$ | 10. $8 + 2 = \underline{\quad}$ | 11. $8 + 9 = \underline{\quad}$ | 12. $3 + 6 = \underline{\quad}$ |
| 13. $9 + 7 = \underline{\quad}$ | 14. $3 + 2 = \underline{\quad}$ | 15. $9 + 4 = \underline{\quad}$ | 16. $7 + 7 = \underline{\quad}$ |
| 17. $1 + 7 = \underline{\quad}$ | 18. $4 + 8 = \underline{\quad}$ | 19. $5 + 6 = \underline{\quad}$ | 20. $7 + 8 = \underline{\quad}$ |

Add. Check by adding in the reverse order.

- | | | | | | |
|--|--|--|--|--|--|
| 21. $\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$ | 22. $\begin{array}{r} 6 \\ + 6 \\ \hline \end{array}$ | 23. $\begin{array}{r} 0 \\ + 0 \\ \hline \end{array}$ | 24. $\begin{array}{r} 7 \\ + 4 \\ \hline \end{array}$ | 25. $\begin{array}{r} 8 \\ + 6 \\ \hline \end{array}$ | 26. $\begin{array}{r} 5 \\ + 2 \\ \hline \end{array}$ |
| 27. $\begin{array}{r} 4 \\ 3 \\ + 2 \\ \hline \end{array}$ | 28. $\begin{array}{r} 1 \\ 6 \\ + 8 \\ \hline \end{array}$ | 29. $\begin{array}{r} 6 \\ 3 \\ + 5 \\ \hline \end{array}$ | 30. $\begin{array}{r} 8 \\ 1 \\ + 3 \\ \hline \end{array}$ | 31. $\begin{array}{r} 5 \\ 0 \\ + 8 \\ \hline \end{array}$ | 32. $\begin{array}{r} 5 \\ 2 \\ + 5 \\ \hline \end{array}$ |
| 33. $\begin{array}{r} 0 \\ + 9 \\ \hline \end{array}$ | 34. $\begin{array}{r} 5 \\ + 1 \\ \hline \end{array}$ | 35. $\begin{array}{r} 2 \\ + 4 \\ \hline \end{array}$ | 36. $\begin{array}{r} 8 \\ + 3 \\ \hline \end{array}$ | 37. $\begin{array}{r} 4 \\ + 6 \\ \hline \end{array}$ | 38. $\begin{array}{r} 8 \\ + 8 \\ \hline \end{array}$ |

Apply

Solve these problems.

- | | |
|--|--|
| 39. Chris paid \$6 to see a football game. He paid \$2 to park his car. How much did he pay altogether? | 40. Ellie scored 3 soccer goals in the first half and 2 soccer goals in the second half. How many goals did Ellie score? |
| 41. In a football game, Walt scored a field goal for 3 points. Hal ran for a touchdown and kicked the extra point for 7 points. How many points did both boys score? | 42. Mickey ran 5 kilometers on Monday, 3 kilometers on Tuesday and 8 kilometers on Friday. How far did he run during the week? |
| 43. Annie earned \$5 babysitting on Friday and \$9 on Saturday. How much did she earn in all? | 44. Ryan's ski class met for 2 hours before lunch and 1 hour after lunch. How many hours did he ski with his class? |

Reviewing Subtraction Facts

Lynn is buying a new calculator.
She pays for it with a ten dollar bill.
How much change will she receive?

We want to know how much change Lynn will receive.

We know she gives the clerk _____ and the calculator costs _____.

To find the difference, we subtract the cost of the calculator from the amount Lynn has. We subtract _____ from _____.

$$\begin{array}{ccc} \underline{\quad} & - & \underline{\quad} & = & \underline{\quad} \\ \uparrow & & \uparrow & & \uparrow \\ \text{minuend} & & \text{subtrahend} & & \text{difference} \end{array}$$

Lynn receives _____ in change.

Understanding the relationship between addition and subtraction makes it easier to find sums and differences.

✓ Addition and subtraction check each other. They are called **inverse operations**.

✓ Any three numbers can be used to write four related facts called a **fact family**.

$$\begin{array}{r} 6 \\ + 7 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ - 7 \\ \hline \end{array} \quad \begin{array}{r} 13 \\ - 6 \\ \hline \end{array} \quad \begin{array}{r} 7 \\ + 6 \\ \hline \end{array}$$

Using related facts helps to find missing numbers in equations.

$$7 + ? = 10 \quad 10 - 7 = \underline{\quad}$$

Getting Started

Complete the number sentences.

1. $11 - 3 = \underline{\quad}$

2. $16 - 8 = \underline{\quad}$

3. $4 - 0 = \underline{\quad}$

4. $7 - 7 = \underline{\quad}$

Solve. Check by using the inverse operation.

5.
$$\begin{array}{r} 8 \\ - 5 \\ \hline \end{array}$$

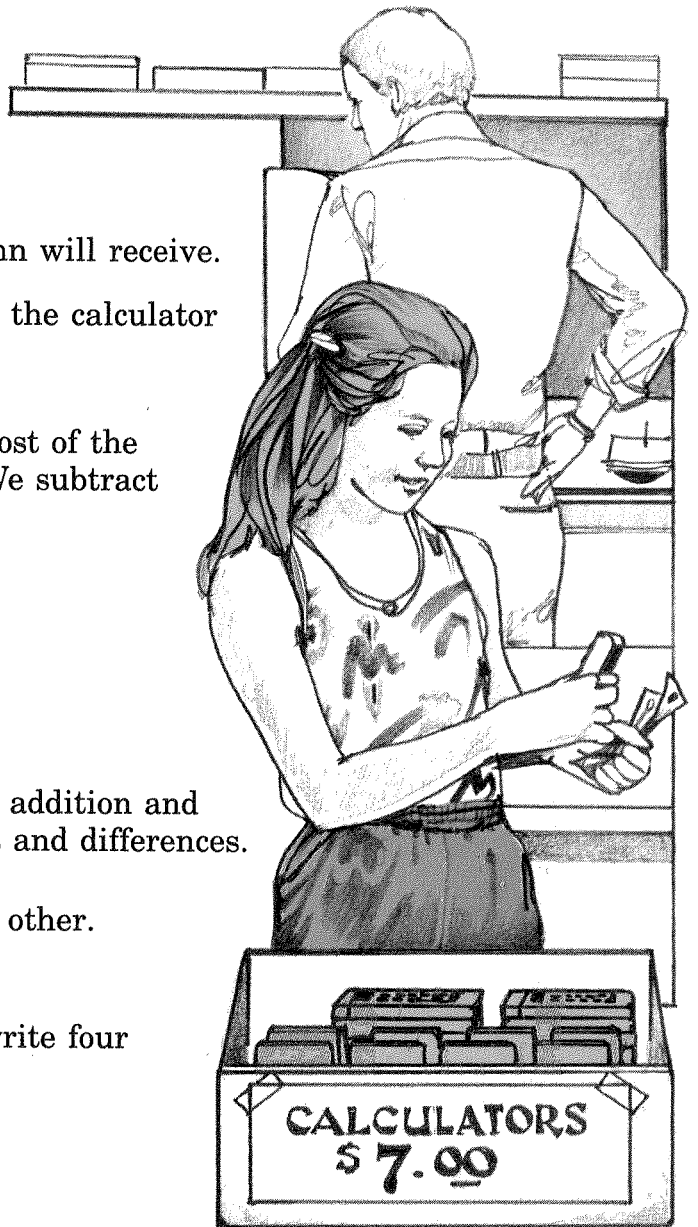
6.
$$\begin{array}{r} 14 \\ - 6 \\ \hline \end{array}$$

7.
$$\begin{array}{r} 0 \\ - 0 \\ \hline \end{array}$$

Write the missing addend.

8. $6 + \underline{\quad} = 9$

9. $0 + \underline{\quad} = 6$



Practice

Complete the number sentences.

- | | | | |
|---------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 1. $9 - 6 = \underline{\quad}$ | 2. $14 - 9 = \underline{\quad}$ | 3. $9 - 5 = \underline{\quad}$ | 4. $15 - 6 = \underline{\quad}$ |
| 5. $7 - 2 = \underline{\quad}$ | 6. $13 - 7 = \underline{\quad}$ | 7. $17 - 9 = \underline{\quad}$ | 8. $5 - 2 = \underline{\quad}$ |
| 9. $10 - 9 = \underline{\quad}$ | 10. $18 - 9 = \underline{\quad}$ | 11. $3 - 3 = \underline{\quad}$ | 12. $10 - 4 = \underline{\quad}$ |
| 13. $7 - 0 = \underline{\quad}$ | 14. $13 - 6 = \underline{\quad}$ | 15. $15 - 7 = \underline{\quad}$ | 16. $11 - 7 = \underline{\quad}$ |

Solve. Check by using the inverse operation.

- | | | | | | |
|--|---|---|---|---|---|
| 17. $\begin{array}{r} 6 \\ -4 \\ \hline \end{array}$ | 18. $\begin{array}{r} 11 \\ -7 \\ \hline \end{array}$ | 19. $\begin{array}{r} 14 \\ -7 \\ \hline \end{array}$ | 20. $\begin{array}{r} 9 \\ -3 \\ \hline \end{array}$ | 21. $\begin{array}{r} 8 \\ -0 \\ \hline \end{array}$ | 22. $\begin{array}{r} 12 \\ -3 \\ \hline \end{array}$ |
| 23. $\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$ | 24. $\begin{array}{r} 14 \\ -5 \\ \hline \end{array}$ | 25. $\begin{array}{r} 6 \\ -0 \\ \hline \end{array}$ | 26. $\begin{array}{r} 12 \\ -5 \\ \hline \end{array}$ | 27. $\begin{array}{r} 10 \\ -8 \\ \hline \end{array}$ | 28. $\begin{array}{r} 5 \\ -2 \\ \hline \end{array}$ |
| 29. $\begin{array}{r} 8 \\ -3 \\ \hline \end{array}$ | 30. $\begin{array}{r} 16 \\ -7 \\ \hline \end{array}$ | 31. $\begin{array}{r} 14 \\ -8 \\ \hline \end{array}$ | 32. $\begin{array}{r} 12 \\ -6 \\ \hline \end{array}$ | 33. $\begin{array}{r} 18 \\ -9 \\ \hline \end{array}$ | 34. $\begin{array}{r} 13 \\ -8 \\ \hline \end{array}$ |

Write the missing addend.

- | | | | |
|----------------------------------|----------------------------------|----------------------------------|----------------------------------|
| 35. $\underline{\quad} + 7 = 16$ | 36. $\underline{\quad} + 9 = 15$ | 37. $5 + \underline{\quad} = 12$ | 38. $\underline{\quad} + 9 = 16$ |
| 39. $8 + \underline{\quad} = 17$ | 40. $5 + \underline{\quad} = 13$ | 41. $\underline{\quad} + 0 = 4$ | 42. $7 + \underline{\quad} = 11$ |
| 43. $\underline{\quad} + 8 = 16$ | 44. $1 + \underline{\quad} = 7$ | 45. $\underline{\quad} + 2 = 11$ | 46. $2 + \underline{\quad} = 10$ |
| 47. $6 + \underline{\quad} = 9$ | 48. $\underline{\quad} + 8 = 15$ | 49. $3 + \underline{\quad} = 6$ | 50. $\underline{\quad} + 1 = 3$ |

Apply

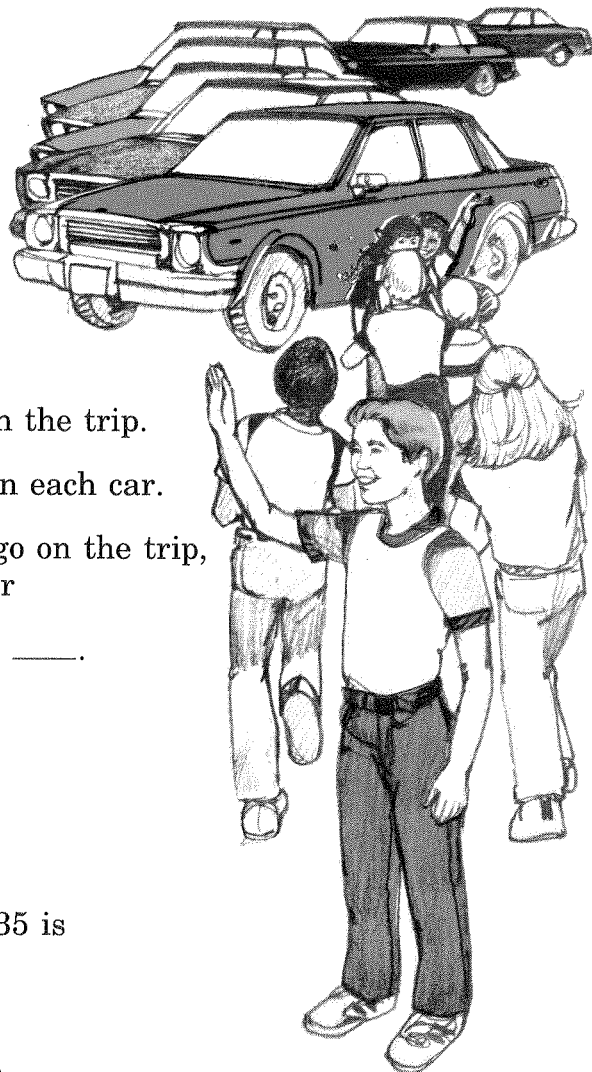
Solve these problems.

- | | |
|--|---|
| 51. Alan bought one tape for \$9. He bought a poster for \$17. How much more did the poster cost? | 52. Paula bought a belt for \$8 and a pair of socks for \$3. How much more did the belt cost? |
| 53. Sandi had 16 records in her collection. She gave 7 records to her brother. How many records did Sandi have left? | 54. Robert had 12 pictures to take. He took 3 pictures on Friday. How many pictures did Robert still have left to take? |



Reviewing Multiplication Facts

The sixth grade class is going on a field trip to the Natural History Museum. Five students can ride in each car. How many students can go on the field trip?



We need to know how many students can go on the trip.

There are ____ cars and ____ students can go in each car.

To find the total number of students who can go on the trip, we multiply the number of students in each car

by the number of cars. We multiply ____ times ____.

$$\begin{array}{ccc} \underline{\quad} & \times & \underline{\quad} & = & \underline{\quad} \\ \swarrow & & \nearrow & & \uparrow \\ \text{factors} & & & & \text{product} \end{array}$$

____ students can go on the field trip.

✓ In the multiplication equation $7 \times 5 = 35$, 35 is a **multiple** of both 7 and 5.

Understanding some basic properties of multiplication makes it easier to find products.

Commutative Property

Two numbers can be multiplied in any order.

$$6 \times 8 = \underline{\quad} \quad 8 \times 6 = \underline{\quad}$$

Associative Property

Factors can be grouped in any way.

$$(4 \times 2) \times 5 = \underline{\quad} \quad 4 \times (2 \times 5) = \underline{\quad}$$

Zero Property

When zero is one of the factors, the product is zero.

$$5 \times 0 = \underline{\quad} \quad 0 \times 5 = \underline{\quad}$$

One Property

When 1 is one of two factors, the product is the other factor.

$$7 \times 1 = \underline{\quad} \quad 1 \times 7 = \underline{\quad}$$

Getting Started

Write the product.

1. $7 \times 8 = \underline{\quad}$
2. $9 \times 0 = \underline{\quad}$
3. $1 \times 6 = \underline{\quad}$
4. $5 \times (2 \times 3) = \underline{\quad}$

Multiply. Check by reversing the factors.

5.
$$\begin{array}{r} 6 \\ \times 8 \\ \hline \end{array}$$
6.
$$\begin{array}{r} 7 \\ \times 3 \\ \hline \end{array}$$
7.
$$\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$$

Practice

Write the product.

1. $7 \times 1 = \underline{\quad}$

2. $4 \times 4 = \underline{\quad}$

3. $2 \times 1 = \underline{\quad}$

4. $0 \times 0 = \underline{\quad}$

5. $2 \times 9 = \underline{\quad}$

6. $7 \times 6 = \underline{\quad}$

7. $3 \times 8 = \underline{\quad}$

8. $5 \times 4 = \underline{\quad}$

9. $4 \times 8 = \underline{\quad}$

10. $9 \times 6 = \underline{\quad}$

11. $7 \times 8 = \underline{\quad}$

12. $5 \times 9 = \underline{\quad}$

13. $(3 \times 3) \times 2 = \underline{\quad}$

14. $3 \times (3 \times 2) = \underline{\quad}$

15. $4 \times (1 \times 6) = \underline{\quad}$

16. $(4 \times 1) \times 6 = \underline{\quad}$

17. $1 \times (8 \times 2) = \underline{\quad}$

18. $(2 \times 2) \times 2 = \underline{\quad}$

19. $2 \times (2 \times 3) = \underline{\quad}$

20. $(0 \times 9) \times 8 = \underline{\quad}$

Multiply. Check by reversing the factors.

21.
$$\begin{array}{r} 2 \\ \times 1 \\ \hline \end{array}$$

22.
$$\begin{array}{r} 6 \\ \times 8 \\ \hline \end{array}$$

23.
$$\begin{array}{r} 7 \\ \times 3 \\ \hline \end{array}$$

24.
$$\begin{array}{r} 8 \\ \times 9 \\ \hline \end{array}$$

25.
$$\begin{array}{r} 9 \\ \times 4 \\ \hline \end{array}$$

26.
$$\begin{array}{r} 0 \\ \times 6 \\ \hline \end{array}$$

27.
$$\begin{array}{r} 5 \\ \times 3 \\ \hline \end{array}$$

28.
$$\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$$

29.
$$\begin{array}{r} 5 \\ \times 5 \\ \hline \end{array}$$

30.
$$\begin{array}{r} 8 \\ \times 7 \\ \hline \end{array}$$

31.
$$\begin{array}{r} 9 \\ \times 9 \\ \hline \end{array}$$

32.
$$\begin{array}{r} 4 \\ \times 2 \\ \hline \end{array}$$

33.
$$\begin{array}{r} 9 \\ \times 6 \\ \hline \end{array}$$

34.
$$\begin{array}{r} 0 \\ \times 7 \\ \hline \end{array}$$

35.
$$\begin{array}{r} 4 \\ \times 3 \\ \hline \end{array}$$

36.
$$\begin{array}{r} 9 \\ \times 7 \\ \hline \end{array}$$

37.
$$\begin{array}{r} 6 \\ \times 1 \\ \hline \end{array}$$

38.
$$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$$

39.
$$\begin{array}{r} 4 \\ \times 6 \\ \hline \end{array}$$

40.
$$\begin{array}{r} 6 \\ \times 3 \\ \hline \end{array}$$

41.
$$\begin{array}{r} 4 \\ \times 7 \\ \hline \end{array}$$

42.
$$\begin{array}{r} 3 \\ \times 2 \\ \hline \end{array}$$

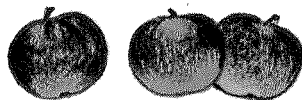
43.
$$\begin{array}{r} 8 \\ \times 8 \\ \hline \end{array}$$

44.
$$\begin{array}{r} 0 \\ \times 5 \\ \hline \end{array}$$

Apply

Solve these problems.

45. One bag contains 9 apples. How many apples are there in 7 bags?



47. Daphne made 50 sandwiches for her party. Seven guests ate 2 sandwiches each. Nine guests ate 1 sandwich each. Eight guests ate no sandwiches. How many sandwiches were left over from the party?



46. Lonnie earns \$3 an hour. One week he worked 4 hours on Monday, 6 on Friday and 8 on Saturday. How much did Lonnie earn that week?

48. Charley bought 7 cheeseburgers at \$3 each. He gave the clerk 2 ten dollar bills and 1 five dollar bill. How much change did Charley get back?



Reviewing Division Facts

Rick is storing juice bottles in cartons. Each carton holds 6 bottles. How many cartons does Rick need to store 48 bottles?

We want to know how many cartons Rick needs.

We know there are ____ bottles and that ____ bottles fit into each carton.

To find the number of cartons, we divide the total number of bottles, by the number of bottles that fit into one carton. We divide ____ by ____.

$$\begin{array}{ccc} \underline{\quad} \div \underline{\quad} = \underline{\quad} \\ \uparrow \quad \uparrow \quad \uparrow \\ \text{dividend} \quad \text{divisor} \quad \text{quotient} \end{array}$$

Rick needs ____ cartons.

Understanding the relationship between multiplication and division makes it easier to find solutions to some equations.

✓ Multiplication and division check each other. They are called **inverse operations**. We can use one to find missing numbers in the other.

$6 \times ? = 18$

$18 \div 6 = \underline{\quad}$

$? \times 3 = 18$

$18 \div 3 = \underline{\quad}$

The inverse property explains why we cannot divide by 0.

$? \times 0 = 3 \text{ Impossible}$

$3 \div 0 = ? \text{ Cannot be solved}$

Getting Started

Write the quotient.

1. $4 \div 1 = \underline{\quad}$

2. $0 \div 3 = \underline{\quad}$

3. $40 \div 5 = \underline{\quad}$

4. $14 \div 7 = \underline{\quad}$

Divide. Check using the inverse operation.

5. $9 \overline{)18}$

6. $3 \overline{)12}$

7. $6 \overline{)42}$

8. $4 \overline{)12}$

9. $7 \overline{)35}$

10. $4 \overline{)4}$

Write the missing factor.

11. $6 \times \underline{\quad} = 54$

12. $\underline{\quad} \times 7 = 21$

13. $9 \times \underline{\quad} = 9$

14. $\underline{\quad} \times 8 = 24$



Practice

Write the quotient.

1. $18 \div 6 = \underline{\quad}$

2. $0 \div 8 = \underline{\quad}$

3. $56 \div 8 = \underline{\quad}$

4. $27 \div 9 = \underline{\quad}$

5. $40 \div 5 = \underline{\quad}$

6. $15 \div 3 = \underline{\quad}$

7. $72 \div 8 = \underline{\quad}$

8. $6 \div 3 = \underline{\quad}$

9. $28 \div 4 = \underline{\quad}$

10. $36 \div 9 = \underline{\quad}$

11. $2 \div 1 = \underline{\quad}$

12. $18 \div 2 = \underline{\quad}$

13. $20 \div 4 = \underline{\quad}$

14. $36 \div 6 = \underline{\quad}$

15. $54 \div 9 = \underline{\quad}$

16. $72 \div 9 = \underline{\quad}$

Divide. Check using the inverse operation.

17. $6 \overline{)54}$

18. $7 \overline{)49}$

19. $8 \overline{)24}$

20. $4 \overline{)32}$

21. $2 \overline{)12}$

22. $9 \overline{)81}$

23. $8 \overline{)56}$

24. $5 \overline{)45}$

25. $3 \overline{)3}$

26. $7 \overline{)21}$

Write the missing factor.

27. $3 \times \underline{\quad} = 27$

28. $\underline{\quad} \times 5 = 30$

29. $9 \times \underline{\quad} = 0$

30. $\underline{\quad} \times 8 = 64$

31. $\underline{\quad} \times 6 = 54$

32. $5 \times \underline{\quad} = 25$

33. $7 \times \underline{\quad} = 28$

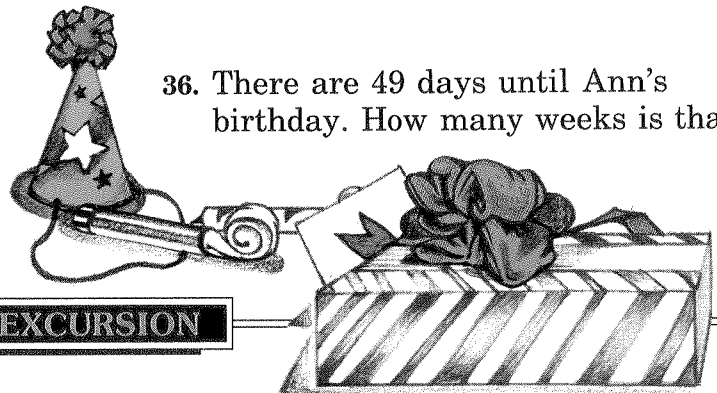
34. $\underline{\quad} \times 6 = 48$

Apply

Solve these problems.

35. Mike bought 4 bike tires for \$36.
How much did each tire cost?

36. There are 49 days until Ann's birthday.
How many weeks is that?



EXCURSION

Find the pattern. Write the missing number.

In	Out
3	12
2	8
5	20
6	—

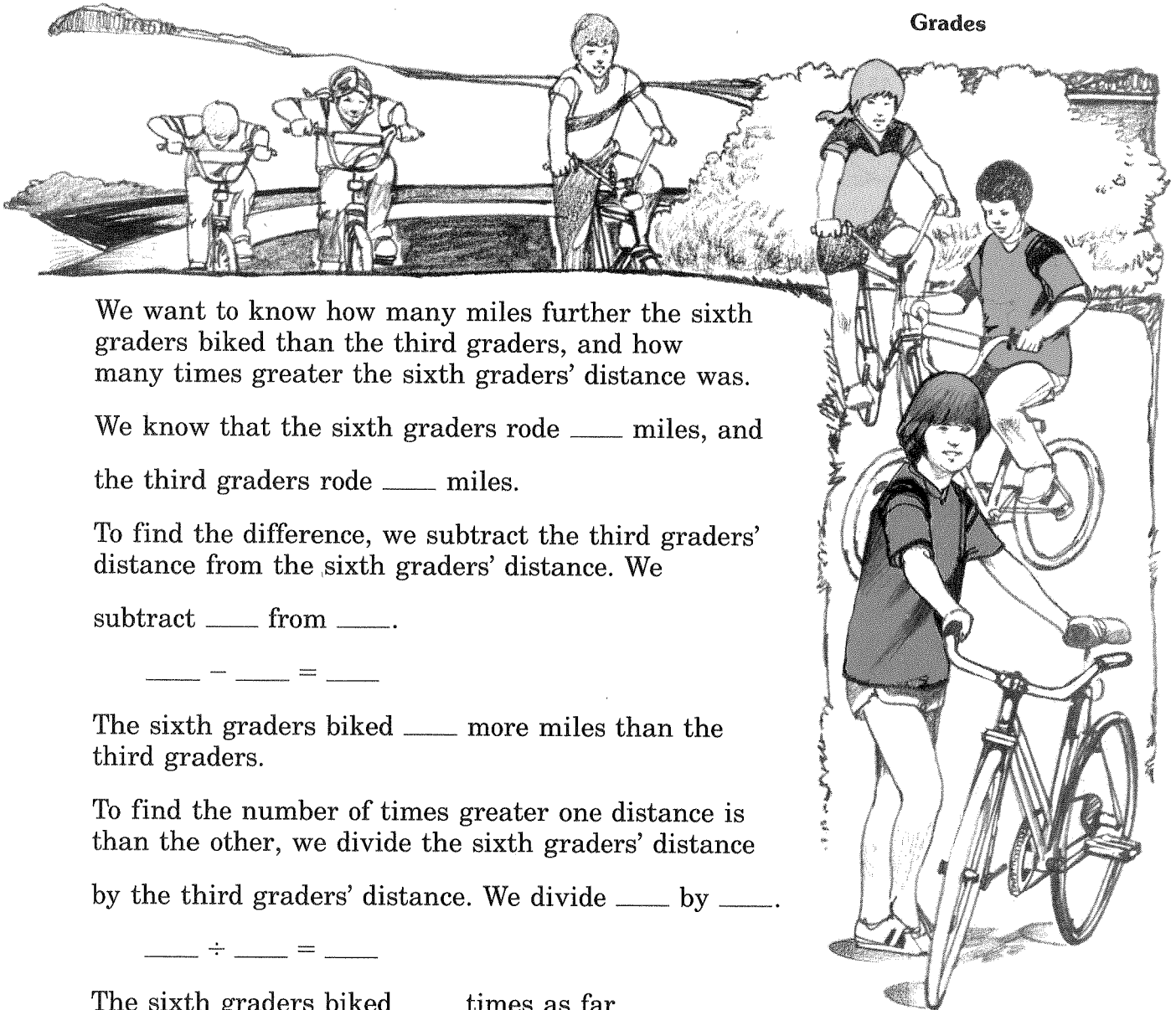
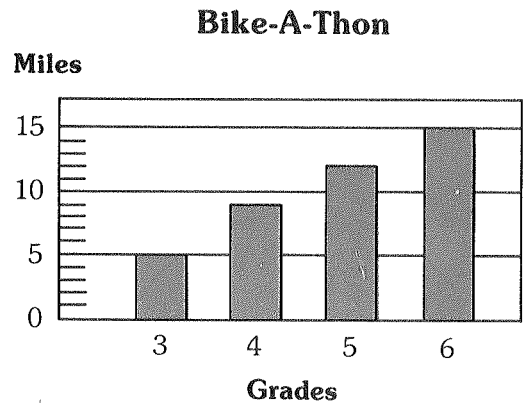
In	Out
3	8
6	11
4	9
—	7

In	Out
6	13
2	5
8	17
3	—

In	Out
4	15
7	24
6	21
—	9

Choosing the Operation

Slater School held a bike-a-thon to raise money for gym equipment. How many more miles did the sixth graders bike than the third graders? How many times farther did the sixth graders bike than the third graders?



We want to know how many miles further the sixth graders biked than the third graders, and how many times greater the sixth graders' distance was.

We know that the sixth graders rode ____ miles, and the third graders rode ____ miles.

To find the difference, we subtract the third graders' distance from the sixth graders' distance. We

subtract ____ from ____.

$$\underline{\quad} - \underline{\quad} = \underline{\quad}$$

The sixth graders biked ____ more miles than the third graders.

To find the number of times greater one distance is than the other, we divide the sixth graders' distance

by the third graders' distance. We divide ____ by ____.

$$\underline{\quad} \div \underline{\quad} = \underline{\quad}$$

The sixth graders biked ____ times as far.

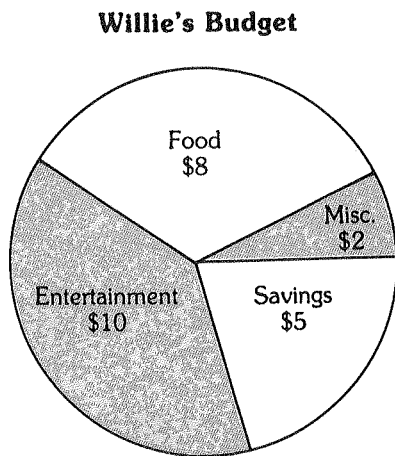
Getting Started

Use the graph above to solve these problems.

1. How many miles less than the fifth graders did the fourth graders ride?
2. What is the number of miles the classes biked altogether?

Practice

Use the graph of Willie's budget to solve 1 through 4.



1. How much does Willie spend on food and savings?
2. How much more does Willie spend on savings than miscellaneous things?
3. How many times more money does Willie spend on entertainment than savings?
4. How much does Willie spend altogether?

Apply

5. Allen paid 56¢ for 7 apples. How much does each apple cost?
6. Alicia rode her bike 4 miles on Saturday. Sunday, she rode twice as far as she did on Saturday. How far did she ride in all?
7. Becky is saving for a radio that costs \$18. She earned \$9 baby-sitting and her aunt gave her \$5 for her birthday. How much more does she need to save?
8. Ramon earns \$3 for each car he washes. One Saturday, he earned \$24. How many cars did he wash?
9. Ryan took 54 pictures during his vacation. He put 6 pictures on each page of his photograph album. How many pages of the album did he fill?
10. Tulips are \$4 a bunch and roses are \$6 a bunch. Which will cost more, 6 bunches of tulips or 4 bunches of roses?