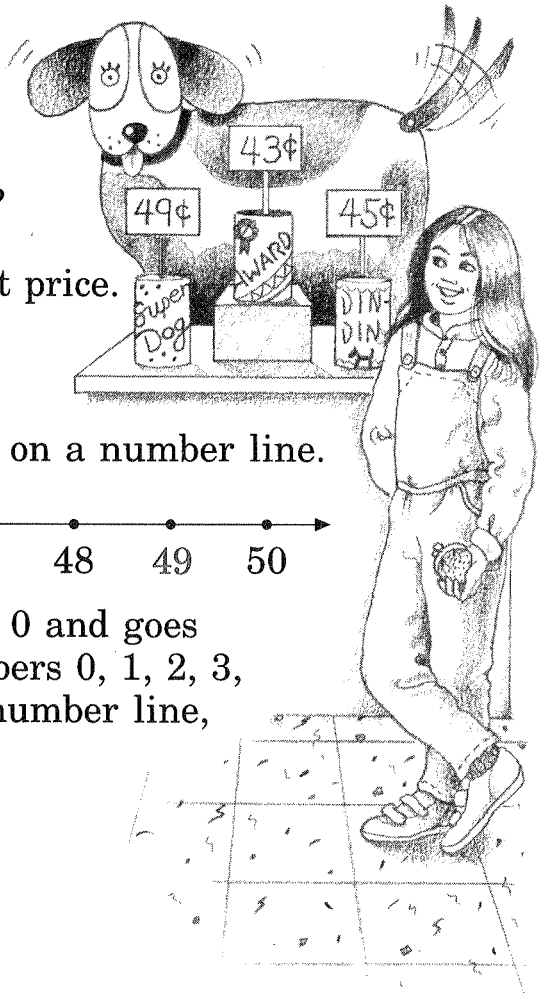
1 ADDITION AND SUBTRACTION FACTS

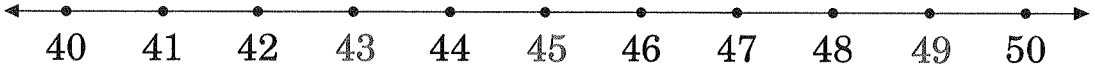
Understanding Whole Numbers



Polly is buying dog food for her puppy. Which can will cost Polly the least amount of money?

We want to know which can has the lowest price. We know the prices for the different dog

foods are _____, _____ and _____.
To compare the 3 prices, we can find them on a number line.



✔ The set of **whole numbers** starts with 0 and goes as far as we need it to go. The whole numbers 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 are called **digits.** On a number line, the number to the right is always greater.

49 is greater than 45 **49 > 45**

✔ A number to the left is always less.

43 is less than 45 **43 < 45**

The dog food that will cost Polly the least costs _____.

Getting Started

Write the missing whole numbers.

1. 26, ____, 28 2. ____ comes after 89. 3. 58 is between ____ and _____.

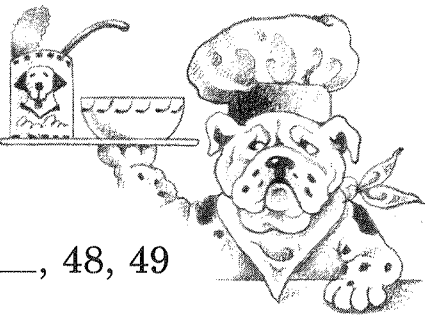
Compare these numbers. Write < or > in the circle.

4. 32 ◯ 38 5. 76 ◯ 53 6. 27 ◯ 72

Write the numbers in order from least to greatest.

7. 32, 46, 15 ____, ____, ____ 8. 13, 43, 29 ____, ____, ____

Practice



Write the missing whole numbers.

1. 35, 36, ___, ___
2. ___, ___, 48, 49
3. 63, 62, ___, ___
4. 91, ___, ___, 94
5. 7, ___, ___,10, ___
6. ___, ___, ___, 20, 21
7. 82, ___, 80, ___, 78
8. ___ comes after 49.
9. ___ is between 56 and 58.
10. 77 is between ___ and ___.

Compare these numbers. Write < or > in the circle.

11. 39 ◯ 36
12. 73 ◯ 17
13. 21 ◯ 30
14. 17 ◯ 16
15. 81 ◯ 89
16. 32 ◯ 42
17. 63 ◯ 36
18. 22 ◯ 33
19. 89 ◯ 40
20. 25 ◯ 29
21. 57 ◯ 51
22. 48 ◯ 40
23. 48 ◯ 50
24. 96 ◯ 99
25. 15 ◯ 35

Write the numbers in order from least to greatest.

26. 75, 36, 48

___, ___, ___

27. 35, 87, 29

___, ___, ___

28. 23, 57, 45

___, ___, ___

29. 83, 47, 58

___, ___, ___

30. 22, 57, 39

___, ___, ___

31. 18, 81, 88

___, ___, ___

32. 25, 36, 12, 19

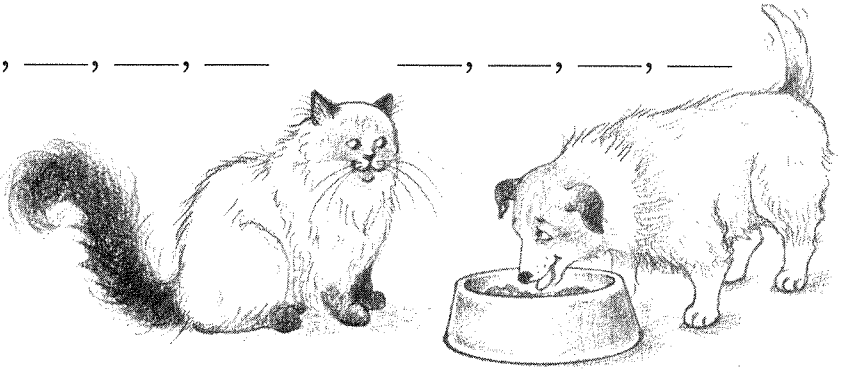
___, ___, ___, ___

33. 47, 58, 75, 21

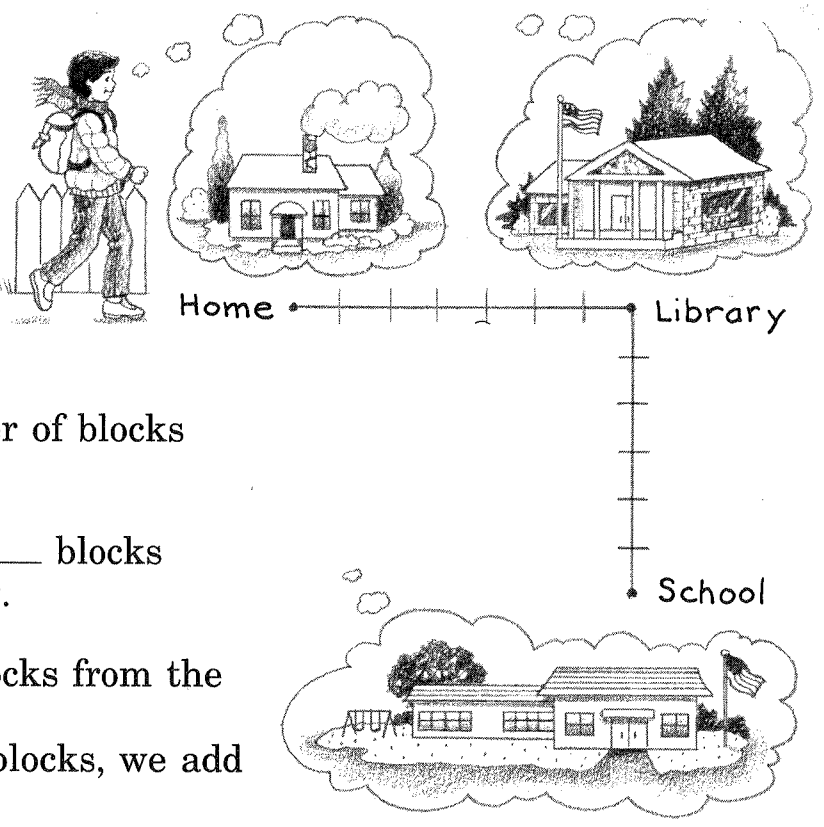
___, ___, ___, ___

34. 67, 9, 42, 83

___, ___, ___, ___



Reviewing Addition Facts



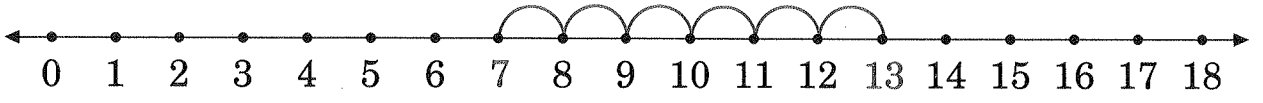
Aaron left home early one morning to walk to the library, before he went to school. How many blocks did he walk on his way to school?

We want to know the number of blocks Aaron walked all together.

We know that he walked _____ blocks from his house to the library.

He walked another _____ blocks from the library to school.
To find the total number of blocks, we add

_____ and _____.



7 + 6 = _____
addends sum

7
+ 6 ← **addends**
← **sum**

7 + 6 = 13 is called a **number sentence.**

Aaron walked _____ blocks from his home to school.

Getting Started

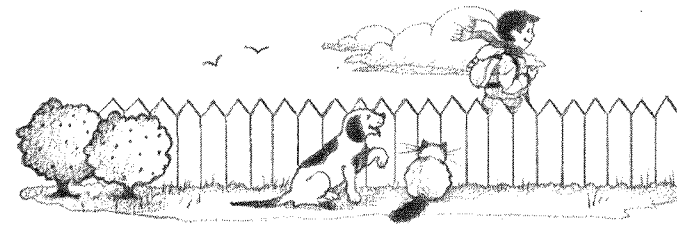
Complete the number sentences.

1. 4 + 2 = _____
2. 7 + 9 = _____
3. 8 + 3 = _____
4. 2 + 9 = _____
5. 5 + 6 = _____
6. 8 + 8 = _____

Add.

7.	8.	9.	10.	11.	12.
8	4	9	5	3	9
+ 7	+ 1	+ 9	+ 5	+ 6	+ 4

Practice



Complete the number sentences.

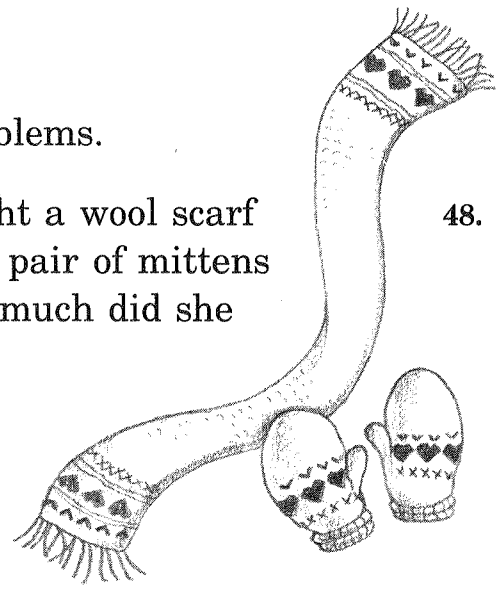
1. $7 + 1 =$ ____
2. $7 + 7 =$ ____
3. $2 + 1 =$ ____
4. $6 + 9 =$ ____
5. $8 + 5 =$ ____
6. $4 + 4 =$ ____
7. $1 + 1 =$ ____
8. $5 + 9 =$ ____
9. $9 + 3 =$ ____
10. $6 + 8 =$ ____
11. $8 + 2 =$ ____
12. $7 + 6 =$ ____
13. $7 + 8 =$ ____
14. $2 + 4 =$ ____
15. $8 + 9 =$ ____
16. $8 + 4 =$ ____

Add.

17. $\begin{array}{r} 7 \\ +\ 4 \\ \hline \end{array}$	18. $\begin{array}{r} 5 \\ +\ 2 \\ \hline \end{array}$	19. $\begin{array}{r} 4 \\ +\ 3 \\ \hline \end{array}$	20. $\begin{array}{r} 9 \\ +\ 5 \\ \hline \end{array}$	21. $\begin{array}{r} 2 \\ +\ 6 \\ \hline \end{array}$	22. $\begin{array}{r} 1 \\ +\ 8 \\ \hline \end{array}$
23. $\begin{array}{r} 3 \\ +\ 8 \\ \hline \end{array}$	24. $\begin{array}{r} 5 \\ +\ 4 \\ \hline \end{array}$	25. $\begin{array}{r} 9 \\ +\ 1 \\ \hline \end{array}$	26. $\begin{array}{r} 9 \\ +\ 8 \\ \hline \end{array}$	27. $\begin{array}{r} 2 \\ +\ 7 \\ \hline \end{array}$	28. $\begin{array}{r} 9 \\ +\ 7 \\ \hline \end{array}$
29. $\begin{array}{r} 1 \\ +\ 3 \\ \hline \end{array}$	30. $\begin{array}{r} 5 \\ +\ 7 \\ \hline \end{array}$	31. $\begin{array}{r} 1 \\ +\ 6 \\ \hline \end{array}$	32. $\begin{array}{r} 3 \\ +\ 9 \\ \hline \end{array}$	33. $\begin{array}{r} 3 \\ +\ 3 \\ \hline \end{array}$	34. $\begin{array}{r} 4 \\ +\ 9 \\ \hline \end{array}$
35. $\begin{array}{r} 2 \\ +\ 8 \\ \hline \end{array}$	36. $\begin{array}{r} 1 \\ +\ 7 \\ \hline \end{array}$	37. $\begin{array}{r} 1 \\ +\ 2 \\ \hline \end{array}$	38. $\begin{array}{r} 8 \\ +\ 6 \\ \hline \end{array}$	39. $\begin{array}{r} 1 \\ +\ 9 \\ \hline \end{array}$	40. $\begin{array}{r} 3 \\ +\ 4 \\ \hline \end{array}$
41. $\begin{array}{r} 3 \\ +\ 2 \\ \hline \end{array}$	42. $\begin{array}{r} 6 \\ +\ 1 \\ \hline \end{array}$	43. $\begin{array}{r} 8 \\ +\ 1 \\ \hline \end{array}$	44. $\begin{array}{r} 2 \\ +\ 2 \\ \hline \end{array}$	45. $\begin{array}{r} 4 \\ +\ 7 \\ \hline \end{array}$	46. $\begin{array}{r} 5 \\ +\ 8 \\ \hline \end{array}$

Apply

Solve these problems.



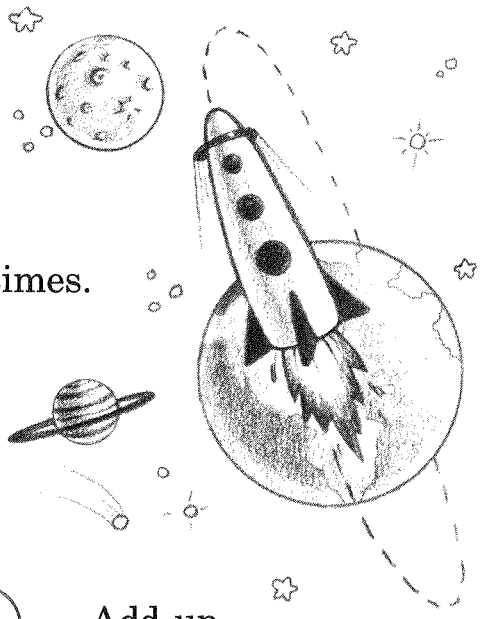
47. Megan bought a wool scarf for $7 and a pair of mittens for $6. How much did she spend?

48. Earle's club has 9 members. Each member has asked one friend to join the club. How many members will there be?

Column Addition

Date	Astronaut	Orbits
February 20	John Glenn	3
May 24	Scott Carpenter	3
October 3	Wally Schirra	6

The first United States astronauts orbited the earth in 1962.
How many orbits did these Americans complete in that year?



We want to find the total number of orbits all the astronauts made in 1962.

We know that Glenn orbited _____ times;

Carpenter, _____ times; and Schirra, _____ times.

To find this **total** or **sum,** we add _____,

_____ and _____.

We can add only two numbers at a time.

Add down.

$$\begin{array}{r} 3 \\ 3 \\ +\,6 \\ \hline \end{array}$$

Add up to check.

$$\begin{array}{r} 3 \\ 3 \\ +\,6 \\ \hline \end{array}$$

The American astronauts completed ____ orbits in 1962.

Getting Started

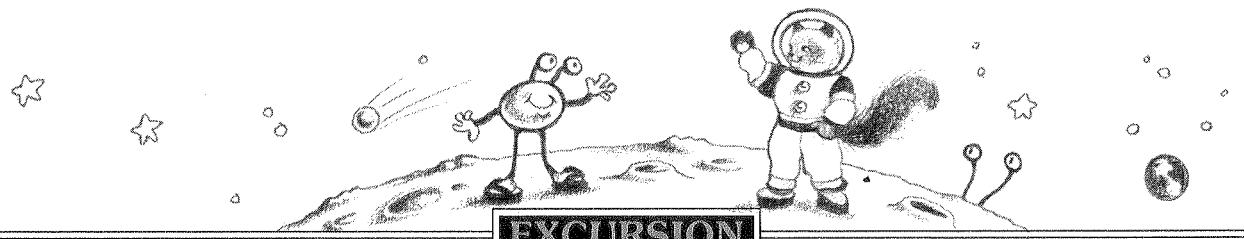
Add and check.

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

Practice

Add and check.

1. 6 3 + 6	2. 2 3 + 4	3. 2 7 + 2	4. 8 1 + 4	5. 6 3 + 2
6. 4 5 + 3	7. 1 6 + 3	8. 5 2 + 5	9. 5 2 + 1	10. 7 2 + 6
11. 2 5 + 3	12. 6 2 + 3	13. 4 2 + 7	14. 3 1 + 6	15. 9 1 + 5
16. 8 1 5 1 + 4	17. 1 6 3 + 7	18. 5 3 4 + 1	19. 5 1 6 + 2	20. 6 1 3 5 + 3



EXCURSION

Complete the boxes by adding each number at the top to each number on the left. Look for patterns.

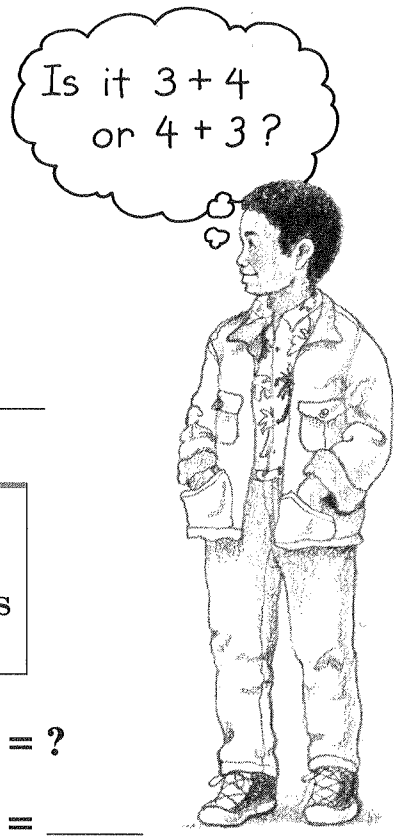
+	5	3	7
8			
18			
28			
38			
48			
58			

+	2	6	4
9			
19			
29			
39			
49			
59			

+	9	7	5
7			
27			
47			
67			
87			
97			

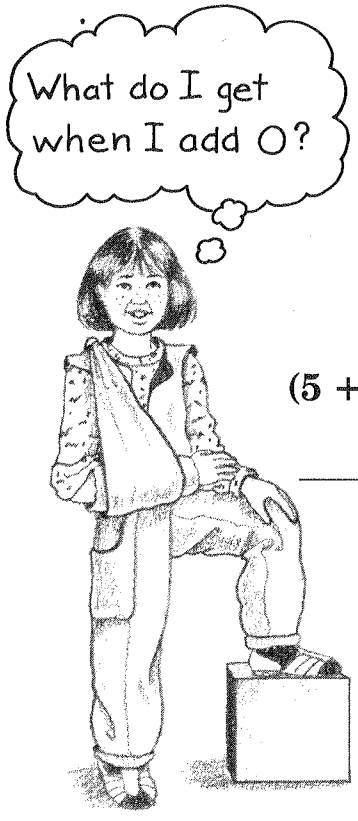
Understanding Addition Properties

Understanding the basic properties of addition can help you find sums more easily.



Order Property
We can add in any order.

3 + 4 = _____ **4 + 3 = _____**



Grouping Property
We can change the grouping. Remember to add the numbers in the parentheses first.

(5 + 3) + 6 = ? **5 + (3 + 6) = ?**

_____ + 6 = _____ **5 + _____ = _____**

Zero Property
Adding zero does not affect the answer.

6 + 0 = _____ **0 + 3 = _____**

Getting Started

Complete the number sentences.

1. 5 + 0 = _____
2. (6 + 3) + 2 = _____
3. 0 + 9 = _____
4. 4 + (0 + 6) = _____
5. (2 + 7) + 0 = _____
6. 5 + (3 + 5) = _____

Add and check.

7.
$$\begin{array}{r} 6 \\ 2 \\ +\ 4 \\ \hline \end{array}$$

8.
$$\begin{array}{r} 3 \\ 9 \\ +\ 4 \\ \hline \end{array}$$

9.
$$\begin{array}{r} 9 \\ 3 \\ 0 \\ +\ 2 \\ \hline \end{array}$$

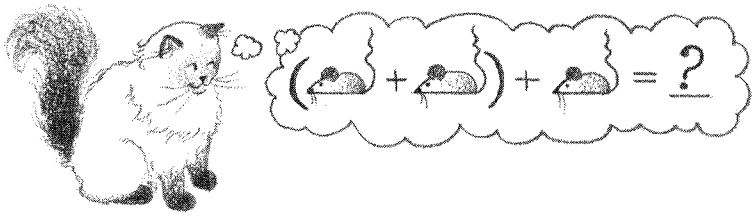
10.
$$\begin{array}{r} 1 \\ 4 \\ 5 \\ 3 \\ +\ 4 \\ \hline \end{array}$$

11.
$$\begin{array}{r} 7 \\ 5 \\ 0 \\ 3 \\ +\ 2 \\ \hline \end{array}$$

Practice

Complete the number sentences.

1. $7 + 0 =$ ____
2. $(4 + 2) + 7 =$ ____
3. $0 + 8 =$ ____
4. $(8 + 0) + 2 =$ ____
5. $5 + (8 + 1) =$ ____
6. $(7 + 2) + 3 =$ ____
7. $(0 + 6) + 9 =$ ____
8. $(6 + 0) + 9 =$ ____
9. $4 + (6 + 3) =$ ____
10. $(2 + 5) + 8 =$ ____
11. $8 + (5 + 2) =$ ____
12. $3 + (4 + 5) =$ ____
13. $6 + (2 + 0) =$ ____
14. $4 + (3 + 6) =$ ____
15. $(5 + 0) + 5 =$ ____



Add and check.

16. $\begin{array}{r} 5 \\ 3 \\ +\ 2 \\ \hline \end{array}$
17. $\begin{array}{r} 2 \\ 7 \\ +\ 0 \\ \hline \end{array}$
18. $\begin{array}{r} 0 \\ 8 \\ +\ 6 \\ \hline \end{array}$
19. $\begin{array}{r} 1 \\ 7 \\ +\ 2 \\ \hline \end{array}$
20. $\begin{array}{r} 6. \\ 0 \\ +\ 8 \\ \hline \end{array}$

21. $\begin{array}{r} 4 \\ 0 \\ +\ 7 \\ \hline \end{array}$
22. $\begin{array}{r} 3 \\ 8 \\ +\ 0 \\ \hline \end{array}$
23. $\begin{array}{r} 8 \\ 1 \\ +\ 5 \\ \hline \end{array}$
24. $\begin{array}{r} 7 \\ 1 \\ +\ 8 \\ \hline \end{array}$
25. $\begin{array}{r} 9 \\ 0 \\ +\ 4 \\ \hline \end{array}$

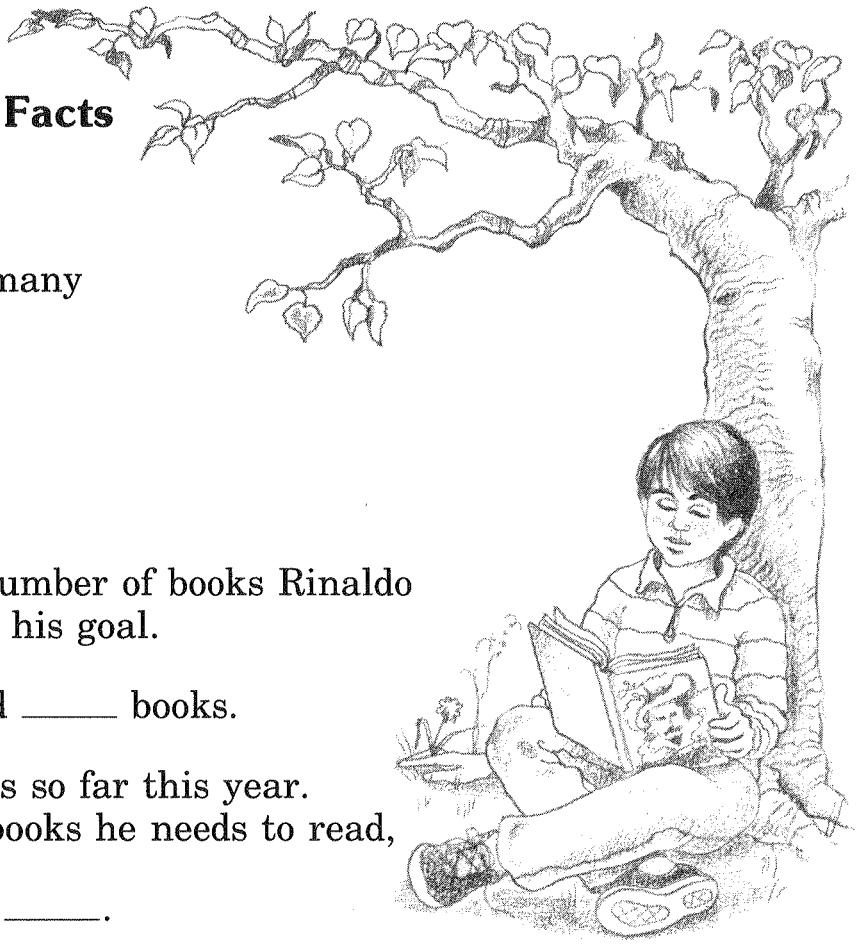
26. $\begin{array}{r} 0 \\ 5 \\ +\ 0 \\ \hline \end{array}$
27. $\begin{array}{r} 3 \\ 6 \\ +\ 1 \\ \hline \end{array}$
28. $\begin{array}{r} 5 \\ 9 \\ +\ 1 \\ \hline \end{array}$
29. $\begin{array}{r} 2 \\ 2 \\ +\ 5 \\ \hline \end{array}$
30. $\begin{array}{r} 8 \\ 0 \\ +\ 6 \\ \hline \end{array}$

31. $\begin{array}{r} 9 \\ 0 \\ 6 \\ +\ 4 \\ \hline \end{array}$
32. $\begin{array}{r} 1 \\ 4 \\ 3 \\ +\ 0 \\ \hline \end{array}$
33. $\begin{array}{r} 4 \\ 5 \\ 3 \\ +\ 2 \\ \hline \end{array}$
34. $\begin{array}{r} 6 \\ 8 \\ 0 \\ +\ 5 \\ \hline \end{array}$
35. $\begin{array}{r} 7 \\ 2 \\ 5 \\ +\ 2 \\ \hline \end{array}$

36. $\begin{array}{r} 3 \\ 0 \\ 8 \\ 2 \\ +\ 4 \\ \hline \end{array}$
37. $\begin{array}{r} 2 \\ 4 \\ 3 \\ 4 \\ +\ 2 \\ \hline \end{array}$
38. $\begin{array}{r} 5 \\ 4 \\ 2 \\ 1 \\ +\ 6 \\ \hline \end{array}$
39. $\begin{array}{r} 1 \\ 0 \\ 5 \\ 8 \\ +\ 2 \\ \hline \end{array}$
40. $\begin{array}{r} 4 \\ 4 \\ 3 \\ 3 \\ +\ 3 \\ \hline \end{array}$

Reviewing Subtraction Facts

Rinaldo's goal for this year is to read 12 books. So far, he has read 5 books. How many books must Rinaldo read to reach his goal?

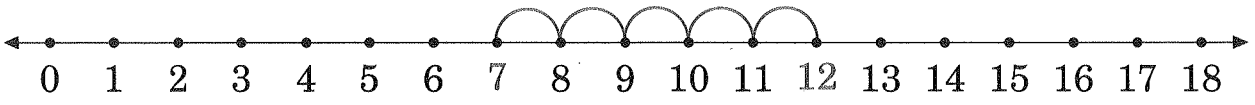


We want to know the number of books Rinaldo must still read to reach his goal.

Rinaldo's goal is to read _____ books.

He has read _____ books so far this year.
To find the number of books he needs to read,

we subtract _____ from _____.



$12 - 5 = \_\_\_$
↑ ↑ ↑
minuend subtrahend difference

$$\begin{array}{r} 12 \\ -\ 5 \\ \hline \end{array}$$
12 ← minuend
5 ← subtrahend
← difference

Rinaldo wants to read _____ more books this year.

Getting Started

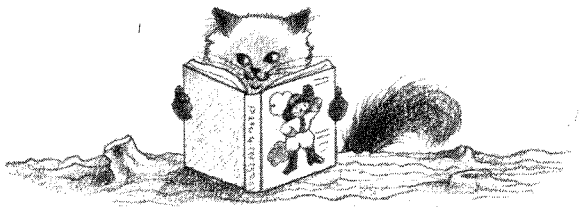
Complete the number sentences.

1. $8 - 7 = \_\_\_$
2. $11 - 3 = \_\_\_$
3. $15 - 9 = \_\_\_$
4. $12 - 5 = \_\_\_$
5. $10 - 8 = \_\_\_$
6. $8 - 6 = \_\_\_$
7. $18 - 9 = \_\_\_$
8. $13 - 4 = \_\_\_$

Subtract.

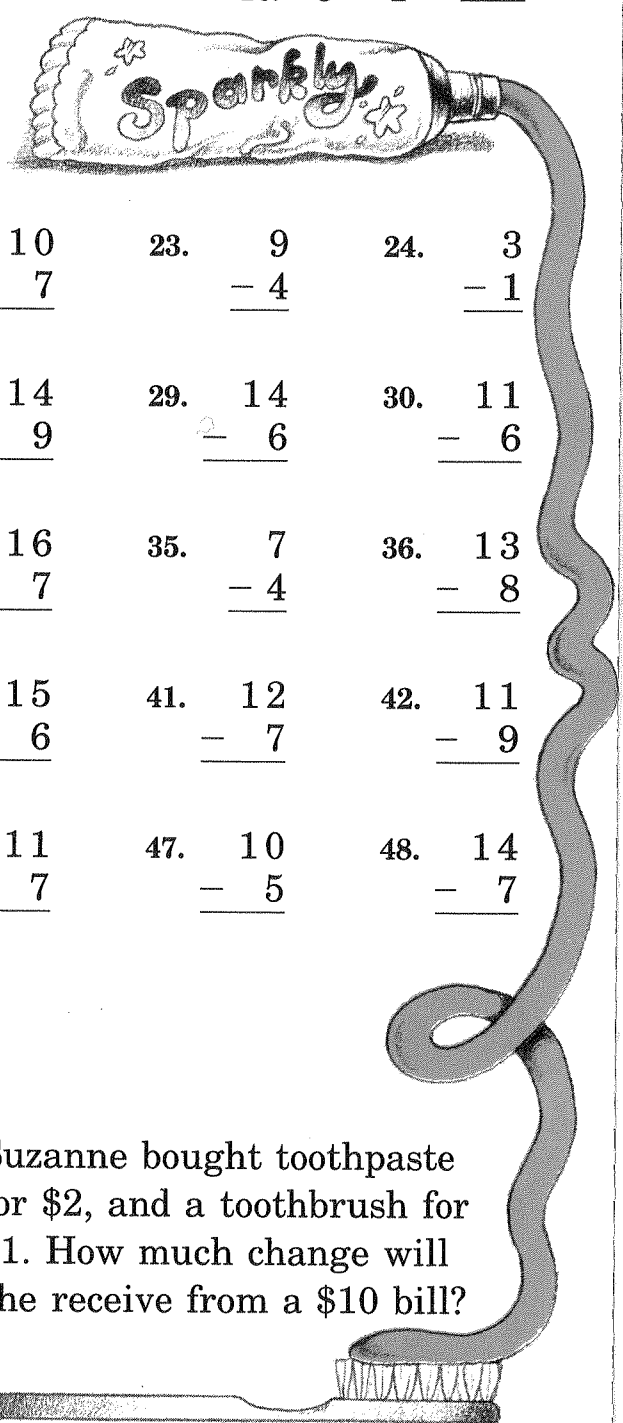
9. $\begin{array}{r} 11 \\ -\ 4 \\ \hline \end{array}$
10. $\begin{array}{r} 5 \\ -\ 3 \\ \hline \end{array}$
11. $\begin{array}{r} 8 \\ -\ 3 \\ \hline \end{array}$
12. $\begin{array}{r} 14 \\ -\ 8 \\ \hline \end{array}$
13. $\begin{array}{r} 6 \\ -\ 3 \\ \hline \end{array}$
14. $\begin{array}{r} 10 \\ -\ 4 \\ \hline \end{array}$

Practice



Complete the number sentences.

1. $9 - 2 =$ ___
2. $6 - 2 =$ ___
3. $4 - 1 =$ ___
4. $7 - 3 =$ ___
5. $15 - 8 =$ ___
6. $4 - 3 =$ ___
7. $11 - 8 =$ ___
8. $13 - 5 =$ ___
9. $2 - 1 =$ ___
10. $10 - 3 =$ ___
11. $5 - 1 =$ ___
12. $6 - 5 =$ ___
13. $9 - 8 =$ ___
14. $13 - 9 =$ ___
15. $14 - 5 =$ ___
16. $8 - 1 =$ ___
17. $15 - 6 =$ ___
18. $9 - 9 =$ ___



Subtract.

19. 10 − 1	20. 9 − 6	21. 12 − 8	22. 10 − 7	23. 9 − 4	24. 3 − 1
25. 12 − 4	26. 11 − 2	27. 4 − 2	28. 14 − 9	29. 14 − 6	30. 11 − 6
31. 17 − 8	32. 9 − 1	33. 10 − 2	34. 16 − 7	35. 7 − 4	36. 13 − 8
37. 16 − 9	38. 10 − 6	39. 9 − 7	40. 15 − 6	41. 12 − 7	42. 11 − 9
43. 10 − 9	44. 7 − 6	45. 12 − 3	46. 11 − 7	47. 10 − 5	48. 14 − 7

Apply

Solve these problems.

49. Butch made 9 sandwiches. His brothers ate 7 of them for lunch. How many sandwiches does Butch have left to eat?

50. Suzanne bought toothpaste for $2, and a toothbrush for $1. How much change will she receive from a $10 bill?