

New Mathematics

for Elementary School

2A



TOKYO SHOSEKI

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About the "D" Symbol

* Available in Japanese only.

- Sections marked with this symbol have additional materials available online.
- Tell your teacher or parent before you use the Internet.

To Study Online

Use the URL below or QR code on the right to access online contents.

<https://tsho.jp/02p/m2a/>



Notice to Teachers and Parents

Use of the online contents marked with the "D" symbol is free of charge, if you have Internet access.

Prior learning

1st Grade
Comparing Length,
Amount of Water,
and Area
2nd Grade
4 Units of Length

1st Grade
How to Tell Time

1st Grade
Calculation with
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2nd Grade
2 Addition
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3 Subtraction
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1st Grade
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Addition and Subtraction Algorithms

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Later learning

2nd Grade
14 Units of Length
of Long Objects

5th Grade
How to Show the
Volume of Boxes

3rd Grade
How to Find Time
and Elapsed Time

3rd Grade
Mental Calculation
4th Grade
Properties of
Operations

3rd Grade
Addition and
Subtraction
Algorithms

3rd Grade
Triangles and Shape
of Corners

4th Grade
Quadrilaterals/
Units of Area



New Mathematics 2A Plus 117

Notice to Teachers and Parents

"New Mathematics 2A Plus" is an optional resource for students who want or need to work on additional material.

Not all students need to use "New Mathematics 2A Plus."

2B Table of Contents

11 Multiplication (1)

14 Units of Length of Long Objects

17 Shapes of Boxes

12 Multiplication (2)

15 Addition and Subtraction

13 4-Digit Numbers

16 Fractions

- What if you use the structure or the way to write numbers up to 100?
- What are the characteristics of the shapes of things around you?
- How can you compare lengths and amounts of water?
- How can you grasp the characteristics of events?

Based on what you studied in first grade,
further explore the world of mathematics.



Mathlin

Mathlin gives you some
hints as you study.

Haruto and Shiho are explaining their classmates' ideas.

Misaki

Math sentence:

$$3 + 5 + 1 = 9$$

Answer: 9 students

Kota

Math sentence:

$$3 + 1 + 5 = 9$$

Answer: 9 students

Learn with your classmates.



Haruto

"3" in Misaki's math sentence means ..., and 5 means ...



Shiho

- 3 In what order did Misaki add the numbers?
- 4 Explain Kota's method.
- 5 Look back and summarize today's lesson.

- Can you understand your classmates' ideas based on their math sentences?
- What is common and what is different about your own idea and your classmates' ideas?

Look back and summarize today's lesson.

- What did you learn from today's investigation?
- Which way of thinking was useful?



Summary

A math sentence shows not only an answer but also how we were thinking about the problem?



Riku

What if someone wrote $1 + 3 + 5$? How was she thinking?

The next page shows a photocopy of my notebook page.



Misaki

Keep a Math Notebook



In your math notebook, record your learning process.



Misaki

I wonder what Misaki wrote in her notebook.



10th April

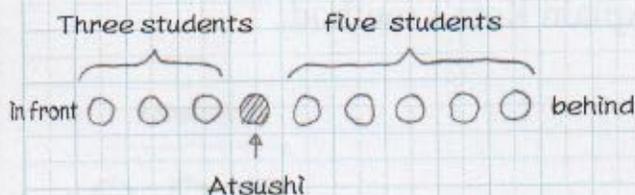
<Problems>

There are 3 students ahead of Atsushi.

There are 5 students behind Atsushi.

How many students are lining up altogether?

<My idea>



$$3 + 5 + 1 = \cancel{9}$$

$$9$$

Answer nine students

- Find out what the math sentence tells you.

<Summary>

A math sentence shows not only an answer but also how we were thinking about the problem?



If your answer is wrong, don't erase it. Just write the correct answer next to it.

Atsushi

$$3 + 5 + 1 = \cancel{10}$$

Answer nine students

Write down today's date and math problem, and grasp the problem.

Write down your idea.

Look back and summarize today's lesson.

Tips for Keeping a Notebook

Your other idea

$$3 + 1 + 5 = 9$$

Once you solve the problem in one way, you can think of another way and write it down.

Friend's ideas

$1 + 3 + 5 = 9$
I calculated by adding Atsushi first.

You can listen to your friends' ideas and write down what you think about them.

My reflection

I thought a diagram made it easier to come up with a math sentence.

At the end of the lesson, write down:

- What you understood
- What you learned to do

You can also write thing like.

Step to Learning

Entry to Learning

Today's Learning

Where do they go and what do they do during recess?

I want to answer for Mr. Words with my classmates.

Some of them play together during lunch break.

In Nani's class, each student writes down where they were and what they did at recess the previous day. Then they put their cards up on the blackboard so that they could get to know more about each other.

20 21 students put up their cards.

Discuss what you notice about how the students spent the lunch break.

When did most students go? Most students seemed to be at the playground. I want to make a game out of this.

Discuss the following with your classmates and set a goal for what to learn:

- Math in your daily life
- What you have studied so far



Today's Problem



Goal of the Lesson



Hint for Your Thinking



Key Viewpoints and Ways of Thinking



Summary

Summary



Practice Problem

Key calculation problems are shaded.

Additional Problems
→ Page 118 A

Addition
Page 131 ①



New Mathematics Plus (Additional Material)

Additional Problems

Similar Problems Slightly Difficult Problems

1 Let's Show Information Clearly Classmate Page 125

Page 10

In Ai's class, to decide who would be in charge of different class jobs, each student wrote down the job they were volunteering for.

Need practice? Try these!
The answers are toward the back of the textbook so that you can check them yourself.

Review Exercises

1 Addition and Subtraction: 1 of Grade 1

◆ $9 + 4$

① 9 is 1 less than 10.
② Split 4 into 1 and 3.
③ Add the 1 to the 9 to make 10.

2 The Structure of Numbers and How to Read Them

◆ 36

Use this section when you want to review what you studied before.



Wrapping Up Your Learning



Wrapping Up Your Learning: Units of Length Use What You Have Learned

Put what you just learned to use.



Wrapping Up Your Learning: Units of Length Check Your Understanding

Review what you just learned and practice.



Wrapping Up Your Learning: Units of Length Grow Your "Eyes for Math" — Key Viewpoints and Ways of Thinking

Summarize key viewpoints and ways of thinking.



Let's Try WONDERful Problems!

2

Let's Think about How to Calculate Addition Classmate Page 129

1 There are 9 cards: 1, 2, 3, 4, 5, 6, 7, 8, and 9.

Use this section to explore more and dig deeper. Answers can be found on later page, so you can check them yourself.

Other Pages

Do You Remember?

Calculate the following using the algorithm.

Ⓐ $76+4$ Ⓑ $18+25$ Ⓒ $49+24$ Ⓓ $7+56$

Review what you studied before.

The answers are toward the back of the textbook so that you can check them yourself.

Share What You Think!



Riku

First, Then,



Ami

I think... because...



Haruto

You can show that in a diagram or a math sentence like this.....

Notice to Teachers and Parents

- Sections marked with **Advanced** include topics not covered by the National Course of Study for second grade. Not all students need to work on these sections. (2B contains such sections, but 2A does not.)
- Do You Remember?** sections are not for studying new topics and not included in the number of class hours. Use these sections for self-study and home learning.

Where do they go and what do they do during recess?



I want to become better friends with my classmates.



Nao



Sota

Some of them play together during lunch break.

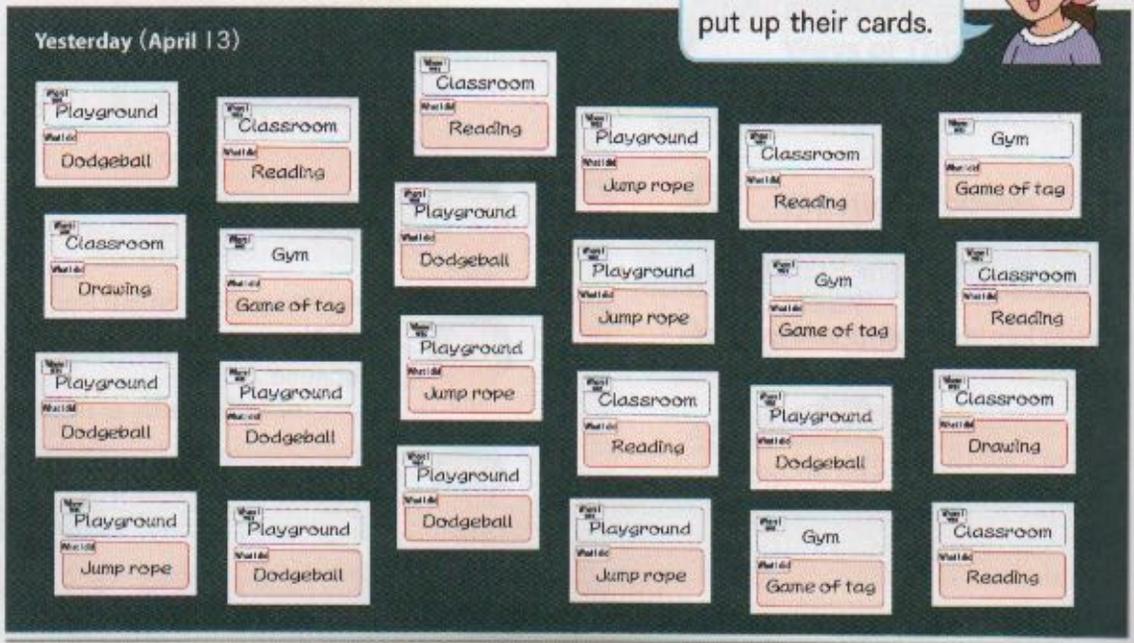
Card

Where I was

What I did

In Nao's class, each student wrote down where they were and what they did at recess the previous day. Then they put their cards up on the blackboard so that they could get to know more about each other.

All 24 students put up their cards.



Discuss what you notice about how the students spent the lunch break.

What did most students do?



Haruto



Shiho

Most students seemed to be on the playground.

I want to make it clear at a glance.

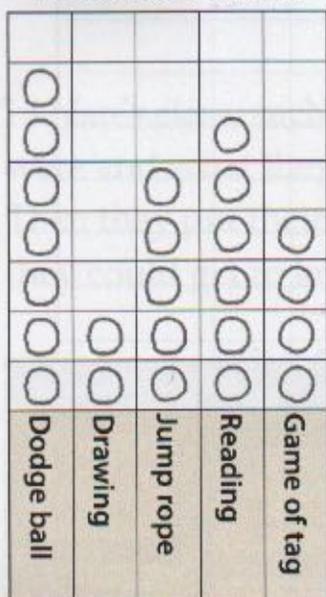


Misaki

2

Look at the graph and the table below and investigate more about what the students did during lunch break.

Lunch Break Activities and Numbers of Students



Lunch Break Activities and Numbers of Students

Activity	Dodge ball	Drawing	Jump rope	Reading	Game of tag
Number of students	7	2	5	6	4

I wonder what most students did.



Kota



Shiho

I wonder what's the difference in number between dodge ball and drawing.

- Discuss with your classmates what you can do to become better friends with each other.

I wonder which activity can be enjoyed as a group and was done by many students.



Misaki



Haruto

Many people read a book, so I'll find out what book is popular.

Let's discuss what becomes easier to understand when you use a graph or a table.

The one that makes it easier to compare which activity had more or fewer students is...



Riku

The one that makes it easier to tell **how many students** there were is...



Ami

Additional Problems

→ Page 118 A

Shiho



If you make a graph or a table about where the students spent the lunch break, what might you be able to find?



Focus on more and fewer, and find out characteristics

Students voted for the type of classroom pet they wanted. The results are shown in the graph on the right.

Haruto, Misaki, and Riku are discussing the results while looking at the graph.

What point is each of the three focusing on?

Select from (A) to (C) below and fill in the

.

Classroom Pet to Have and Numbers of Votes

○			
○			
○			○
○	○		○
○	○	○	○
○	○	○	○
○	○	○	○
Goldfish	Tadpole	Roly-poly	Butterfly larva



Haruto

Goldfish got the most votes.

...



Misaki

Goldfish got 4 more votes than roly-poly.

...



Riku

Roly-poly got the fewest votes.

...

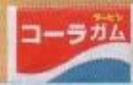
- (A) Focusing on the most votes
- (B) Focusing on the fewest votes
- (C) Focusing on the difference in number of votes

How much will they be?



Bran Cake

1 package 7 yen



Gum

1 package 8 yen



Curry-flavored Crackers

1 package 20 yen



Dried Octopus

1 slice 10 yen



Gummy Candies

1 package 29 yen



Jelly

1 piece 15 yen



Ramune Candies

1 package 32 yen



Candy

1 candy 5 yen



Deep-fried Cutlet

1 slice 30 yen



Doughnuts

1 package 35 yen



Cotton Candy

1 package 12 yen



Chocolate

1 piece 18 yen

Suppose you choose 2 items to buy. Can you tell how much they are going to cost altogether?

Addition
Page 131 ①



Shiori



7 yen and 8 yen
 $7 + 8 = \square$, so
 that'll be
 yen.



Kenji



30 yen and 20 yen
 $30 + 20 = \square$, so
 that'll be
 yen.



Mika

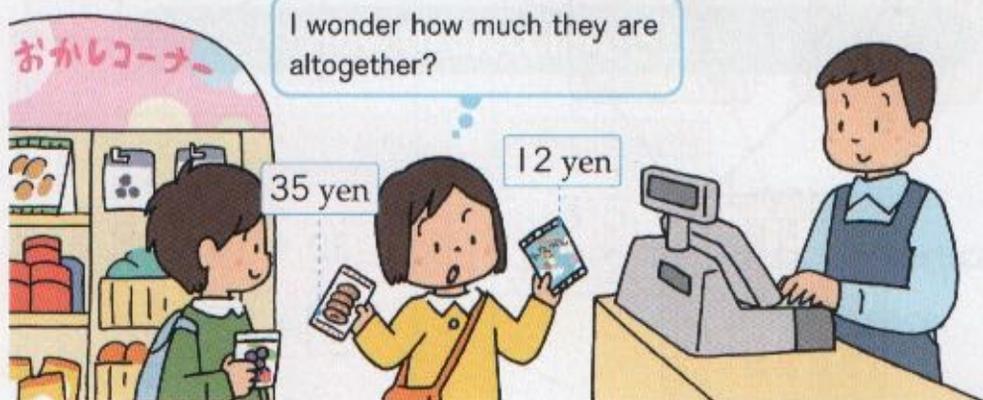
If you buy doughnuts and cotton candy, it's going to cost...



2

Addition Algorithm

Let's Think about How to Calculate Addition



1

Addition (1)

1

Mika buys doughnuts for 35 yen and cotton candy for 12 yen. How much is it going to cost?



1 Write a math sentence.

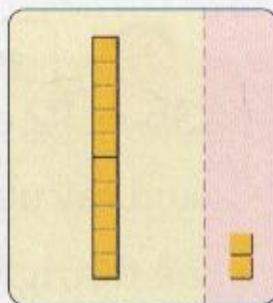
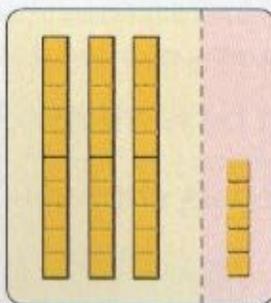
Math Sentence



Can you explain why the math sentence is written like that?



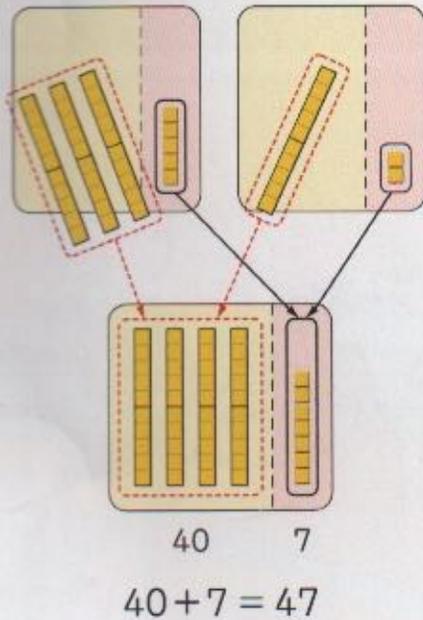
I wonder about how many tens of yen it is going to be.



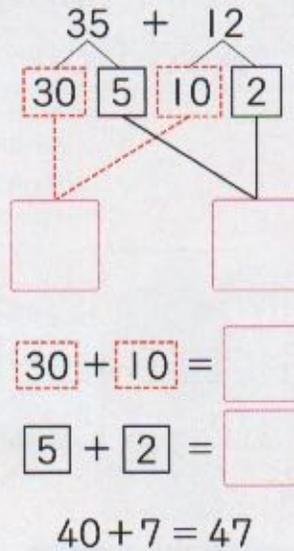
Let's think about how to add 2-digit numbers.



Riku



Ami



$35 + 12 = 47$

Answer 47 yen

2 Explain Riku's and Ami's methods.

3 How are Riku's and Ami's methods similar?

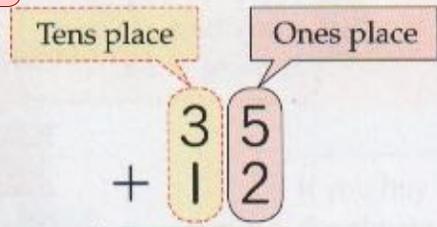


Summary

To add 2-digit numbers, add tens together and ones together.

Se Puede Retomar

35 + 12 can be written and calculated as shown on the right.



Haruto



I wonder how I can calculate this.

A calculation method like the one explained below is called an **algorithm**.

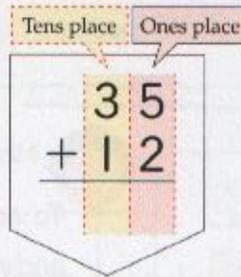
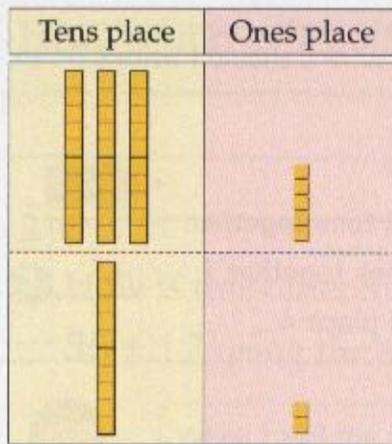
Let's figure out how to calculate using the algorithm.

I wonder if it goes like Riku's and Ami's methods on page 14.



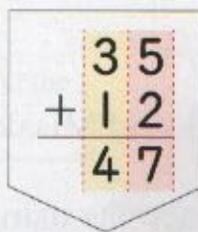
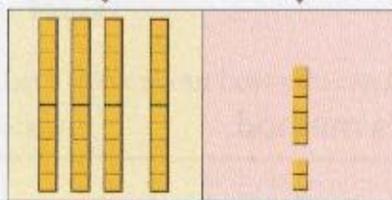
How to calculate $35 + 12$

Algoritmo



Line up the numbers vertically in each place.

Calculate each place separately.



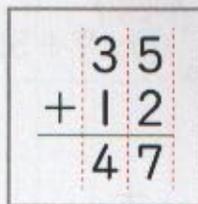
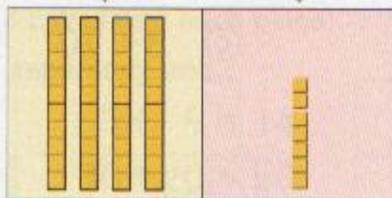
Calculation of the ones place

$$5 + 2 = 7$$

Calculation of the tens place

$$3 + 1 = 4$$

There are 4 tens.



$$35 + 12 = 47$$

Calculating each place separately is based on **the same idea as adding tens together and ones together.**



①

	5	2
+	1	6
<hr/>		

② $27 + 41$

③ $61 + 25$

④ $32 + 40$

⑤ $50 + 26$

Additional Problems

→ Page 118 B

Shiho

I wonder if we can do addition with other numbers using the algorithm.

2

Calculate $32 + 4$ using this algorithm.



I wonder how this is different

from
$$\begin{array}{r} 35 \\ + 12 \\ \hline \end{array}$$



Kota

12 has 2 digits, but 4 has...

Let's think about how to calculate using the algorithm.



Where should I write 4?

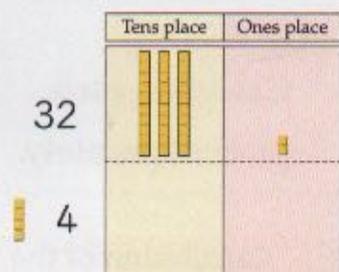


Shiho



Haruto

If you think with blocks...



Misaki

To add tens together and ones together, I should place 4...

	3	2
+		
<hr/>		

1 Complete Haruto's and Misaki's method.

2 Calculate these problems using the algorithm.

(a) $43 + 5$

+		
<hr/>		

(b) $7 + 52$

+		
<hr/>		

(c) $3 + 70$

+		
<hr/>		



When adding a 2-digit number and a 1-digit number together, you line up the numbers vertically in each place and add tens together and ones together, as you did before.



Ami



1 $24 + 5$ 2 $6 + 73$ 3 $40 + 3$ 4 $7 + 90$

Kota



It's important to identify what place each numeral is in.

2

Addition (2)

1

Hiroshi is buying doughnuts for 35 yen and gummy candies for 29 yen. How much is it going to cost?



Math Sentence

I wonder about how much it is going to be.

1 How is this different from calculating $35 + 12$ using the algorithm?

	3	5
+	2	9



When I add the ones, it's $5 + 9$, so

Haruto

Let's think about how you can find the answer.



We know how to calculate each place separately.



Ami



Riku

I calculated each place separately and...

$$5 + 9 = 14$$

$$30 + 20 = 50$$

$$\begin{array}{r} 14 \\ + 50 \\ \hline 64 \end{array}$$



Shiho

I wrote the calculations of each place in a separate line.

$$\begin{array}{r} 35 \\ + 29 \\ \hline 14 \dots 5 + 9 \\ 50 \dots 30 + 20 \\ \hline 64 \end{array}$$



You can find the answer **if you calculate each place separately.**



Kota



Haruto

I wonder if there is a way to use the algorithm without writing down the results of each calculation separately.

Let's think about how to calculate using the algorithm.

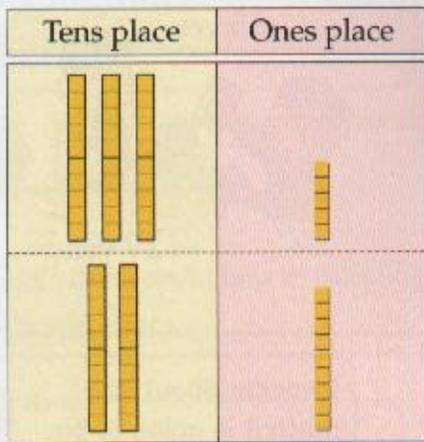


14 is 10 and 4. This 10 should be...



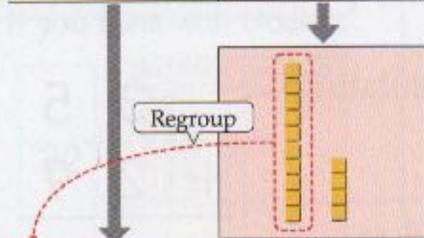
Misaki

How to calculate $35 + 29$



Tens place	Ones place
3	5
+	2
	9
<hr/>	
	4

Line up the numbers vertically in each place.



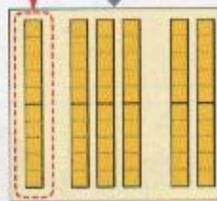
Regroup

3	5
+	2
	9
<hr/>	
	4

Calculation of the ones place

$$5 + 9 = 14$$

Regroup 1 to the tens place.

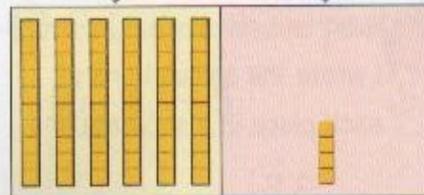


1	3	5
+	2	9
		4
<hr/>		
	6	4

Calculation of the tens place

The regrouped 1 and 3 make 4.

$$4 + 2 = 6$$



3	5
+	2
	9
<hr/>	
6	4

$$35 + 29 = 64$$

When the calculation of the ones place is 10 or more, you regroup 1 ten to the tens place.



Misaki



- ① $23 + 68$ ② $17 + 19$ ③ $35 + 18$ ④ $16 + 49$
 ⑤ $58 + 36$ ⑥ $39 + 48$ ⑦ $25 + 16$ ⑧ $47 + 25$

Additional Problems

→ Page 118 C



2

Calculate the following using the algorithm.

(1) $28 + 32$ (2) $28 + 6$ (3) $3 + 87$

Let's think about how to calculate using the algorithm.

How are these different from the previous calculation done with the algorithm?



Shiho

(1)				(2)				(3)			
	+				+				+		



What was the key idea when you calculated $32 + 4$ using the algorithm?



When using the algorithm to do the calculations above, you **line up the numbers vertically in each place and start calculating from the ones place, as you did before.**



Kota

2

① $24 + 46$ ② $31 + 19$ ③ $67 + 23$ ④ $35 + 45$
 ⑤ $13 + 27$ ⑥ $48 + 22$ ⑦ $36 + 24$ ⑧ $72 + 18$

Additional Problems

→ Page 119 D

3

① $59 + 6$ ② $64 + 7$ ③ $9 + 37$ ④ $8 + 66$
 ⑤ $52 + 8$ ⑥ $74 + 6$ ⑦ $7 + 43$ ⑧ $5 + 65$

Additional Problems

→ Page 119 E

4

Up to yesterday, Miki read 32 pages of a book. Today she read 28 pages.

How many pages has she read altogether?

Ami



$28 + 32$ and $32 + 28$ give the same answer. Is this just a coincidence?

3

Properties of Addition

1

How many books are there in all?

We have 17 encyclopedias.
What about story books?

We have 24 story books.
What about encyclopedias?

17 Encyclopedias

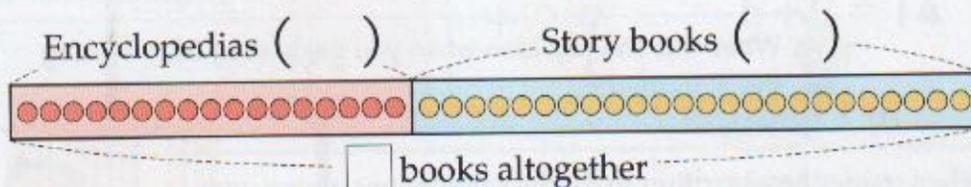
24 Story Books



Ami



Riku



1 Use numbers to fill in the ()s above the diagrams.

2 Write a math sentence and find the answer.



Ami

$$17 + 24 = \square$$

Answer □ books



Riku

$$24 + 17 = \square$$

Answer □ books

Let's compare Ami's and Riku's methods and find out how similar and different they are.

Their answers are both...



Haruto

If I compare their math sentences.



Shiho

Commutatividad de la suma


The number being added to The number being added Answer
 $17 + 24 = \square$

 $24 + 17 = \square$

I wonder what happens to the answer if we switch the numbers that we are adding together.




The number being added to 17 \rightarrow 24
The number being added $+24$ \leftarrow $+17$
Answer $\frac{41}{41}$

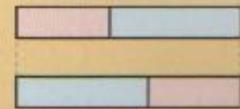
Summary

If you switch the number being added to and the number being added, the answer will be the same.



In a math sentence,
 $17 + 24 = 24 + 17$

In diagrams,



1 Without doing any calculations, find the math sentences with the same answers. Then, draw lines to connect them.

- | | |
|-----------|-------------|
| $43 + 21$ | • $55 + 18$ |
| $26 + 30$ | • $30 + 26$ |
| $78 + 13$ | • $59 + 7$ |
| $18 + 55$ | • $12 + 34$ |
| $7 + 59$ | • $21 + 43$ |
| | • $13 + 78$ |

Commutatividad

Calculate each of the math sentences to see if their answers are the same.



Misaki



By comparing the two math sentences, you have found out a property of addition.

Check Your Understanding

1 Calculate these problems using the algorithm.

- ① $46 + 23$ ② $28 + 30$ ③ $61 + 5$
 ④ $33 + 6$ ⑤ $8 + 81$ ⑥ $6 + 70$

◀ Can you add using the algorithm?

①② Page | 3 1
 ③~⑥ Page | 6 2

2 There are two second grade classes at West Elementary School.

Class A has 34 students and Class B has 35 students.
 How many second grade students are there altogether?

◀ Can you make math sentences out of situations and find the answers?

Page | 3 1

3 Calculate these problems using the algorithm.

- ① $57 + 36$ ② $13 + 29$ ③ $68 + 17$
 ④ $52 + 38$ ⑤ $9 + 43$ ⑥ $24 + 6$

◀ Can you add using the algorithm?

①~③ Page | 7 1
 ④~⑥ Page | 9 2

4 Yuka had 18 pieces of colored paper. She bought 36 more pieces of colored paper today.

How many pieces of colored paper does she have altogether?

◀ Can you make math sentences out of situations and find the answers?

Page | 7 1

5 Which of the following math sentences have an answer of more than 70? **Se Puede Retomar**

- (a) $50 + 18$ (b) $23 + 55$ (c) $14 + 62$
 (d) $43 + 26$ (e) $36 + 37$ (f) $44 + 18$

◀ Can you tell about how large these answers are?

Page | 3 1

Page | 7 1



Haruto

I wonder if I can find the right answers without calculating?

First, I'll focus on the tens place, and then see if the ones place needs regrouping.



Shiho



1 Focus on the structure of numbers and think about how to calculate using the algorithm

Misaki says that the calculation done with the algorithm on the right is wrong. Think about what number fits in to explain why she says so.

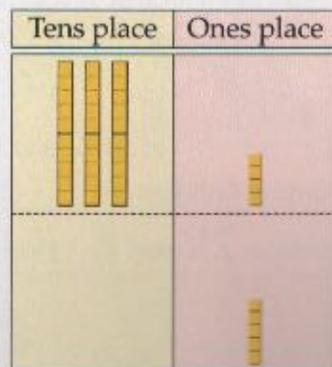
$$34 + 5$$

	3	4
+	5	
	8	4



Misaki

5 needs to be in the ones place. If you put 5 in the tens place, that would mean that there were 5 sets of . So, this calculation is wrong.



2 Estimate answers of addition based on properties of addition

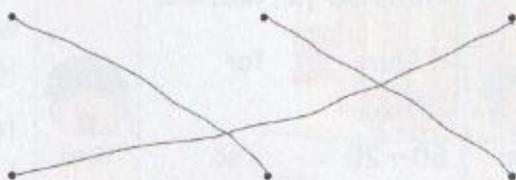
Without doing any calculations, Haruto found the math sentences with the same answers and drew lines to connect them.

How did Haruto find that these sentences had the same answers? Think about what words fit in to explain why.

$35 + 27$

$18 + 43$

$23 + 56$



$56 + 23$

$27 + 35$

$43 + 18$



Haruto

If you switch the number being added to and the number , the answer will be...

Challenge Yourself

→ Page 127



How much will be left?



Bran Cake

1 package 7 yen



Gum

1 package 8 yen



Curry-flavored Crackers

1 package 20 yen



Dried Octopus

1 slice 10 yen



Gummy Candies

1 package 29 yen



Jelly

1 piece 15 yen



Ramune Candies

1 package 32 yen



Candy

1 candy 5 yen



Deep-fried Cutlet

1 slice 30 yen



Doughnuts

1 package 35 yen



Cotton Candy

1 package 12 yen



Chocolate

1 piece 18 yen

Suppose you choose 1 item to buy.

Can you tell how much money will be left?

Subtraction
Page 131 ①



Tsuyoshi

I have 13 yen with me.

If I buy  for

5 yen,

$13 - 5 = \square$, so

yen will be left.



Shiori

I have 50 yen with me.

If I buy  for

20 yen,

$50 - 20 = \square$, so

yen will be left.



Kenji

I have 47 yen with me.

If I buy 

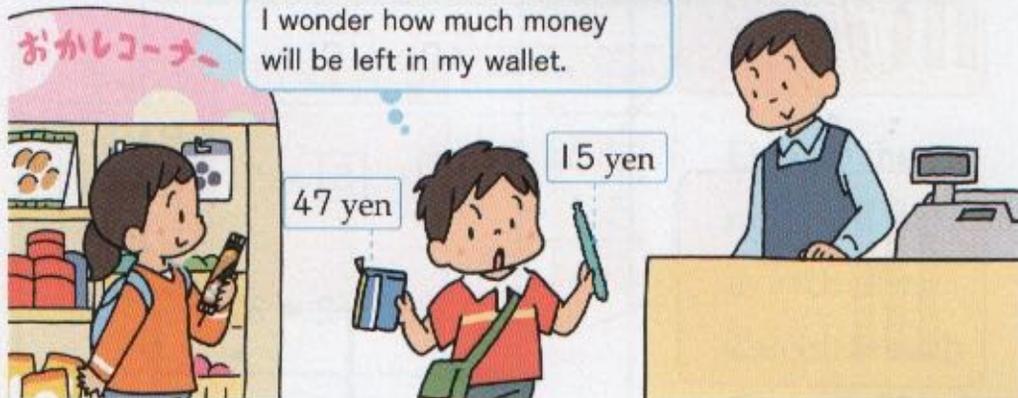
for 15 yen,

I will be left with...

3

Subtraction Algorithm

Let's Think about How to Calculate Subtraction



1

Subtraction (1)

1

Kenji has 47 yen. He is buying jelly for 15 yen. How much money will he have left?

15 yen

1 Write a math sentence.

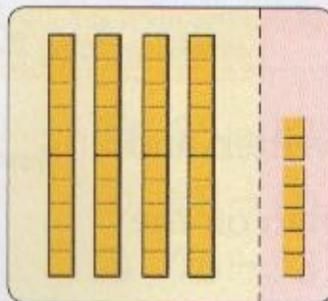
Math Sentence



Can you explain why the math sentence describes the problem?



I wonder about how much it is going to be.



In order to take away 15...



Kota

Let's think about how to do subtraction with 2-digit numbers.

Kota

30 2
30 + 2 = 32

Misaki

$$\begin{array}{r} 47 - 15 \\ \hline \end{array}$$

40 7 10 5

$$40 - 10 = \square$$

$$7 - 5 = \square$$

30 + 2 = 32

$47 - 15 = 32$ Answer 32 yen

2 Explain both students' methods.

3 How are Kota's and Misaki's methods similar?



Summary

To do subtraction with 2-digit numbers, subtract tens from tens and ones from ones.



Calculating each place separately is the same as when adding 2-digit numbers.

$47 - 15$ can be written and calculated as shown on the right.

Tens place Ones place

$$\begin{array}{r} 47 \\ - 15 \\ \hline \end{array}$$


Let's find out how to do subtraction with an algorithm.

I wonder if it goes like Kota's and Misaki's methods on page 26.



Riku

How to calculate $47 - 15$

Algorithmo

Tens place	Ones place

Tens place	Ones place
4	7
-	1

3	2

Tens place	Ones place
4	7
-	1

3	2

Line up the numbers vertically in each place.
Calculate each place separately.

Calculation of the ones place

$$7 - 5 = 2$$

Calculation of the tens place

$$4 - 1 = 3$$

$$47 - 15 = 32$$

Calculating each place separately is based on **the same idea as subtracting tens from tens and ones from ones.**



Haruto



①

	5	8
-	2	7

② $35 - 12$

③ $88 - 16$

④ $76 - 33$

Additional Problems

→ Page 119 F

Misaki



I wonder if we can do subtraction with other numbers using the algorithm.

2

Calculate the following using the algorithm.

- (1) $36 - 26$ (2) $36 - 32$ (3) $36 - 2$

Let's think about how to calculate using the algorithm.

How are these different from

$$\begin{array}{r} 47 \\ -15 \\ \hline \end{array} ?$$



(1)				(2)				(3)			
	—				—				—		

For $36 - 26$, calculation of the ones place will be...



Shiho

For $36 - 32$, calculation of the tens place will be...



Riku

For $36 - 2$, 2 should be written in...



Misaki

When using the algorithm to do the calculations above, you **line up the numbers vertically in each place and calculate each place separately, as you did before.**

As for problem (2), you don't write 0 in the tens place of the answer.



Kota

2

① $84 - 34$

② $92 - 82$

③ $63 - 40$

④ $78 - 50$

⑤ $67 - 64$

⑥ $84 - 80$

3

① $56 - 3$

② $83 - 2$

③ $78 - 6$

④ $68 - 8$

⑤ $27 - 7$

⑥ $95 - 5$

Additional Problems

→ Page 119 G



With the subtraction algorithm, as with addition, it's important to think about what place each numeral is in.

2

Subtraction (2)

1

Hiroko has 47 yen. She is going to buy chocolate for 18 yen.

How much money will she have left?



Math Sense



I wonder about how much it is going to be.

- 1 How is this different from calculating $47 - 15$ with the algorithm?



Ami

Calculation of the ones place will be...

	4	7
-	1	8

Let's think about how you can find the answer.



Misaki

Separate 47 into 30 and 17.

$$\begin{array}{r}
 47 \\
 \swarrow \quad \searrow \\
 30 \quad 17 \\
 \begin{array}{r}
 30 \\
 -10 \\
 \hline
 20
 \end{array}
 \quad
 \begin{array}{r}
 17 \\
 -8 \\
 \hline
 9
 \end{array} \\
 \swarrow \quad \searrow \\
 29
 \end{array}$$

What if it is $17 - 8$?



Riku

Interesante que hagan esta separación

We can find the answer if we use the calculation method we studied before.



Kota

Shiho



How can we do this calculation using the algorithm...

Let's think about how to calculate using the algorithm.

How can we make the calculation of the ones place $17 - 8$?



Ami

How to calculate $47 - 18$

Tens place	Ones place

Tens place	Ones place
4	7
-	1
	8

Line up the numbers vertically in each place.

Tens place	Ones place

Regroup

Calculation of the ones place

	3	7
-	1	8

You can't take 8 from 7, so you need to regroup from the tens place.

Tens place	Ones place

	4	7
-	1	8
		9

$$17 - 8 = 9$$

Calculation of the tens place

Tens place	Ones place

	4	7
-	1	8
	2	9

Since you regrouped, it becomes 3.

Tens place	Ones place

	4	7
-	1	8
	2	9

$$3 - 1 = 2$$

$$47 - 18 = 29$$

For calculating $47 - 18$ using the algorithm, you can't calculate $7 - 8$ in the ones place. So, you need to regroup 1 ten from tens place to make it $17 - 8$.



Shiho

- 1
- ① $52 - 35$
 - ② $63 - 19$
 - ③ $86 - 48$
 - ④ $72 - 26$
 - ⑤ $95 - 69$
 - ⑥ $82 - 44$
 - ⑦ $41 - 23$
 - ⑧ $96 - 57$

Additional Problems
→ Page 120 H

If we start calculating from the ones place, it works well. This is true even when you need to regroup 1 ten from the tens place.



Kota

2

Calculate the following using the algorithm.

(1) $40 - 18$

(2) $45 - 38$

(3) $45 - 8$

(4) $40 - 8$

Let's think about how to calculate using the algorithm.

Compared with the calculations we did with the algorithm before...



Ami

(1)	(2)	(3)	(4)
—	—	—	—

When using the algorithm to do the calculations above, you **line up the numbers vertically in each place and start calculating from ones place, as you did before.**

As for problem (2), you don't write 0 in tens place of the answer.



Riku

2

① $60 - 24$

② $80 - 53$

③ $70 - 12$

④ $50 - 27$

⑤ $34 - 26$

⑥ $57 - 48$

⑦ $61 - 56$

⑧ $90 - 89$

Additional Problems
→ Page 120 I

3

① $55 - 9$

② $31 - 7$

③ $22 - 3$

④ $46 - 8$

⑤ $80 - 6$

⑥ $90 - 5$

⑦ $70 - 2$

⑧ $60 - 4$

Additional Problems
→ Page 120 J

4

There were 60 pieces of colored paper, and 17 pieces were used. How many pieces of colored paper are left?

Haruto



Now we can calculate subtraction using an algorithm.

3

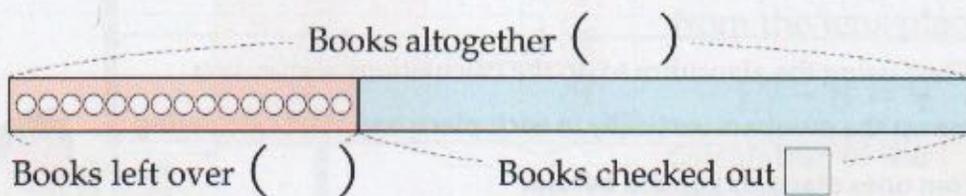
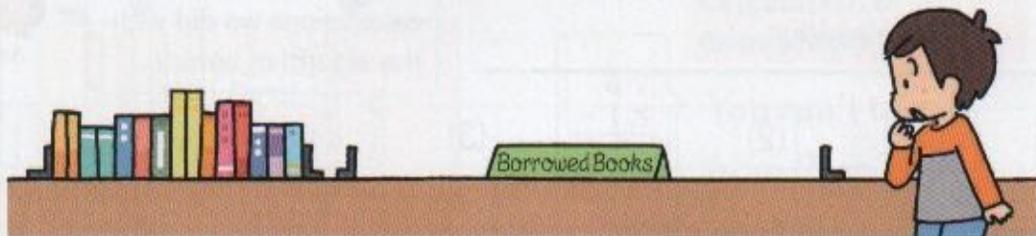
Properties of Subtraction

1

Yuki's class library has 41 books altogether.

Now they have 15 books left.

How many books have been checked out?



The diagram shows the number of borrowed books with an approximate length.

- 1 Fill in the above () with numbers.
- 2 Write a math sentence and find the answer.

Math Sentence 

Answer books



We have calculated the number of borrowed books. Is the answer correct?



They have 15 books left. If we add this to the number of borrowed books...



Let's think about how to check an answer of subtraction.

Resta como el inverso de la suma

3 If you add the number being subtracted to the answer, what number do you get?

The number being subtracted from	The number being subtracted	Answer
41	- 15	= 26
26	+ 15	=

The number being subtracted from	41	↘	26
The number being subtracted	- 15	↙	+ 15
Answer	26		41



Summary

If you add the number being subtracted to the answer, you will get the number you are subtracting from. Based on this fact, you can check the answer of subtraction by doing addition.

1 Find the addition math sentences that can be used to check the answers of the subtraction math sentences below. Then, draw lines to connect them.

58 - 36 ·

93 - 50 ·

34 - 7 ·

72 - 66 ·

· 27 + 7

· 6 + 72

· 6 + 66

· 22 + 36

· 43 + 50

comprobación



Find the answers of the addition math sentences that you connected and check to see if the answers are the same as the numbers that are being subtracted from.

Check Your Understanding



1 Calculate the following using the algorithm.

- ① $34 - 13$ ② $87 - 80$ ③ $63 - 33$
 ④ $98 - 4$ ⑤ $75 - 72$ ⑥ $37 - 7$

◀ Can you subtract using the algorithm?

- ① Page 25 1
 ②~⑥ Page 28 2

2 Yuri is reading a 96 page book. She has already read 52 pages.

How many pages are left?

◀ Can you make math sentences out of situations and find the answers?

Page 25 1

3 Calculate the following using the algorithm.

- ① $87 - 49$ ② $73 - 46$ ③ $40 - 15$
 ④ $42 - 34$ ⑤ $25 - 7$ ⑥ $60 - 6$

◀ Can you subtract using the algorithm?

- ①② Page 29 1
 ③~⑥ Page 31 2

4 Yuta and his elder sister went to the beach to dig for clams. Yuta got 63 clams and his sister got 57 clams.

Who got more clams? How many more?

◀ Can you make math sentences out of situations and find the answers?

Page 31 2

5 With 80 yen, we are going to buy a lollipop for 26 yen and one more item below. Which one can we buy?



◀ Can you solve this problem using what you have studied?

Page 31 2



1 Focus on the structure of numbers to think about how the algorithms work

Ami and Haruto are comparing the following two calculations made with the algorithm and explaining how the calculations are similar to each other.

Write a word or a phrase that fits in each .

	4	5
+	1	8
<hr/>		
	6	3

	6	2
-	4	9
<hr/>		
	1	3



Ami

In both cases, numbers are lined up vertically to calculate.



Haruto

With $45 + 18$, 1 is regrouped to the place.

With $62 - 49$, 1 is regrouped from the place.

In both cases, a group of ten is moved.

2 Check your answer based on properties of subtraction

Shiho calculated $82 - 35$ as shown on the right.

Then, to check her answer, she calculated $47 + 35$.

Explain what property of subtraction Shiho used.

8	2
-	3 5
<hr/>	
4	7



Shiho

To my subtraction answer, I [...] the number subtracted.

Which Calculation
Should We Use?

1

There are 12 red flowers and 24 yellow flowers. How many flowers are there altogether?

3

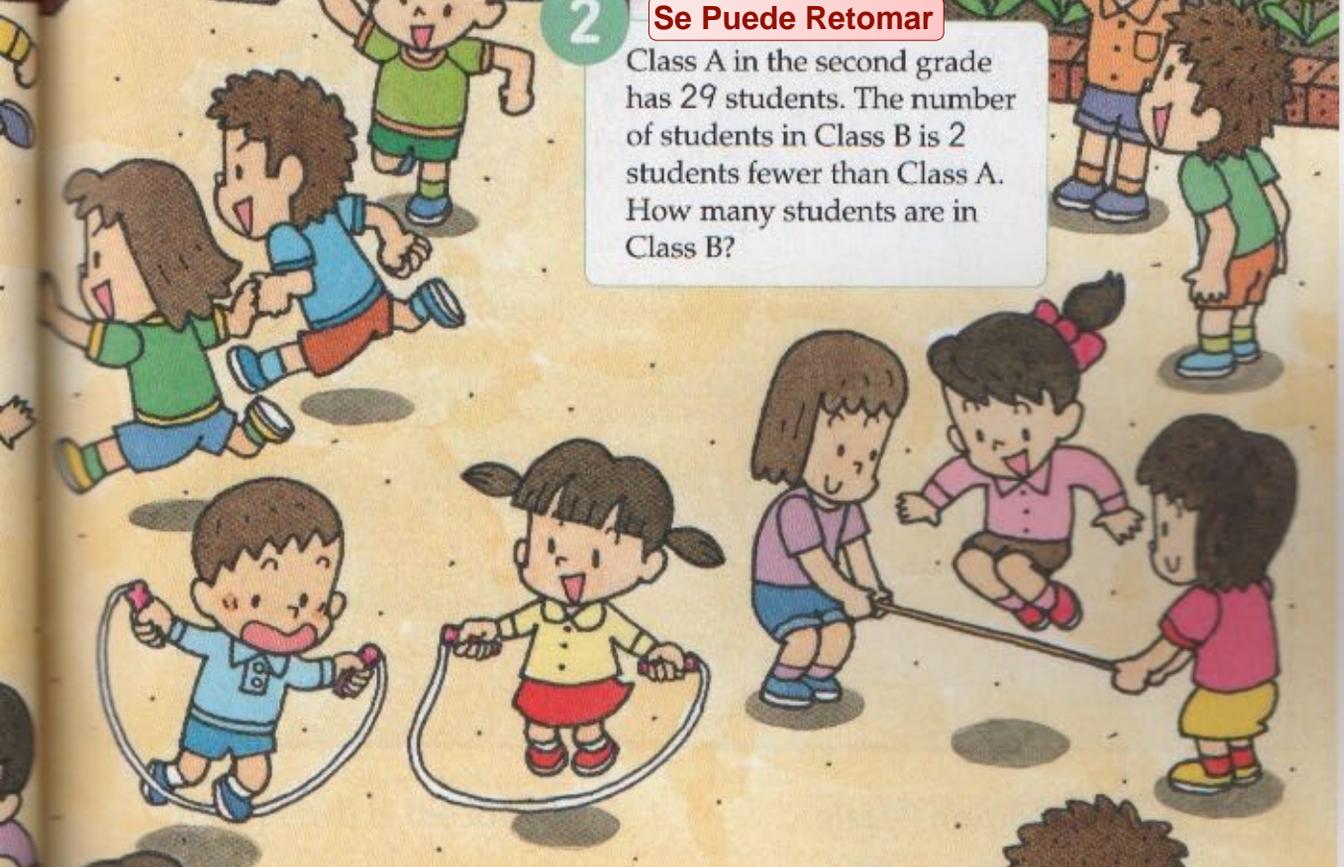
There are 7 children riding unicycles. There are 24 more unicycles. How many unicycles are there altogether?



2

Se Puede Retomar

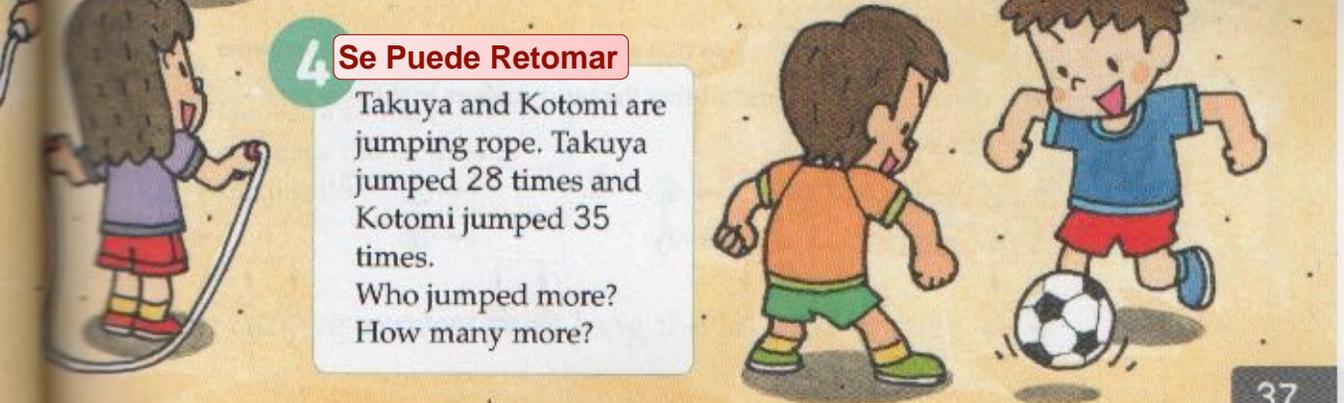
Class A in the second grade has 29 students. The number of students in Class B is 2 students fewer than Class A. How many students are in Class B?



4

Se Puede Retomar

Takuya and Kotomi are jumping rope. Takuya jumped 28 times and Kotomi jumped 35 times. Who jumped more? How many more?





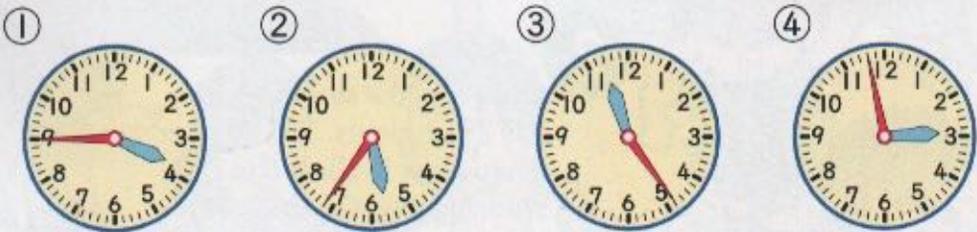
Do You Remember?

1 Calculate the following using the algorithm.

- ① $76 + 4$
- ② $18 + 25$
- ③ $49 + 24$
- ④ $7 + 56$
- ⑤ $58 - 16$
- ⑥ $62 - 39$
- ⑦ $30 - 4$
- ⑧ $27 - 7$

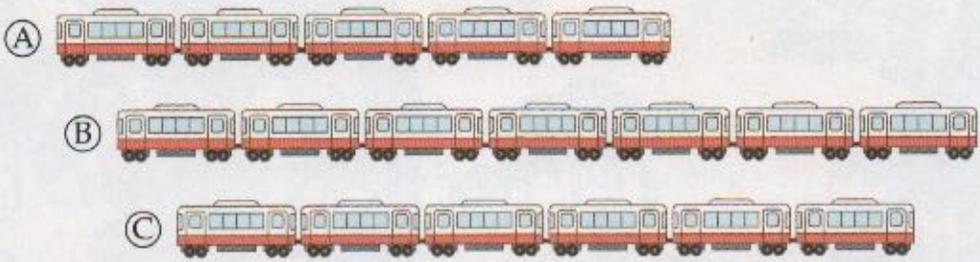
2 What time is it?

How to Tell Time
Page 131 ③



Warm-up

3 Arrange the following from the longest to the shortest:



Playing with
Numbers and
Calculations

Addition Puzzle

Se Puede Retomar

Place cards 1, 2, 3, and 4 in

 so that adding the two numbers in the same column makes the number in and adding the two numbers in the same row makes the number in .

(Example)

1	2	→	3
3	4	→	7
↓	↓		
4	6		

①

3	1	→	4
2	4	→	6
↓	↓		
5	5		

②

0	3	→	3
5	2	→	7
↓	↓		
5	5		

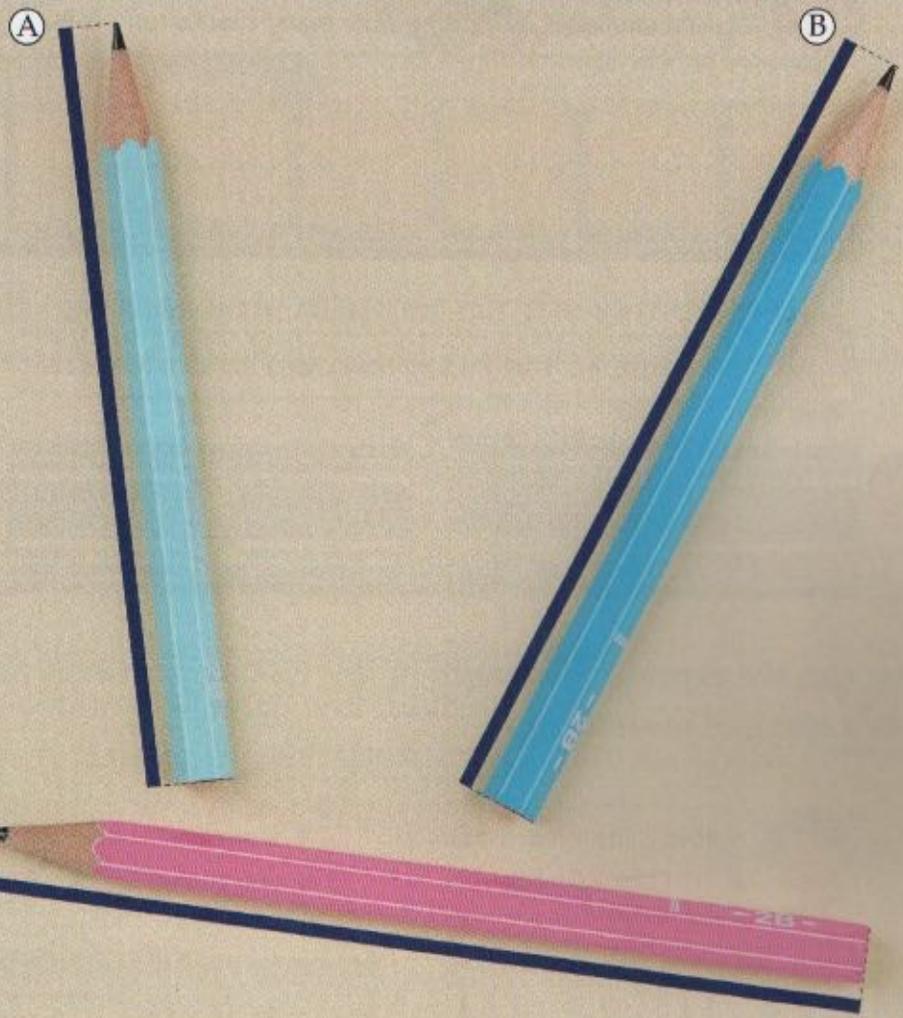
③

3	1	→	4
	6	→	6
↓	↓		
3	7		

Rompecabezas matemáticos Estos sí hay que retomarlos



If we compare lengths?



Which pencil is the longest?



Guess first, then compare the lengths of the lines.

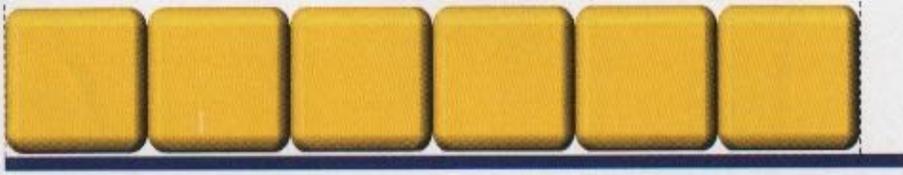


How can we express how long the longest line is?

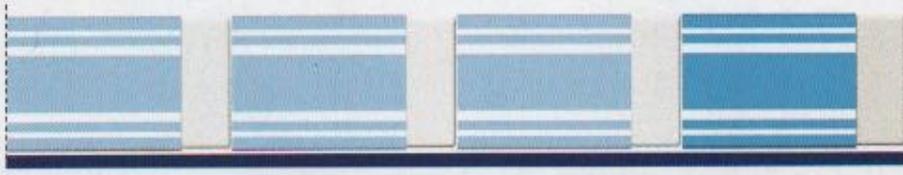
Shiho and Kota measured line ③ the following ways.



I measured it by finding how many blocks long it is.



I measured it by finding how many erasers long it is.



How can we express the length of line ③ using Shiho's and Kota's ways of measuring?



It is a little more than blocks long.

It is exactly erasers long.



Why do Shiho's method and Kota's method give two different numbers to express the length?

Discuss with your classmates.



Both of them need to measure using identical objects.

If they don't have identical objects...





4

Units of Length

Let's Measure Lengths and Record Them

1

Units of Length

Riku



I wonder if it is possible that everyone will express the same length with the same number.

1

How can we express the length so that everyone will use the same number for the same length?

Let's figure out how to express length.

What if all of us use identical objects to measure lengths and show them?



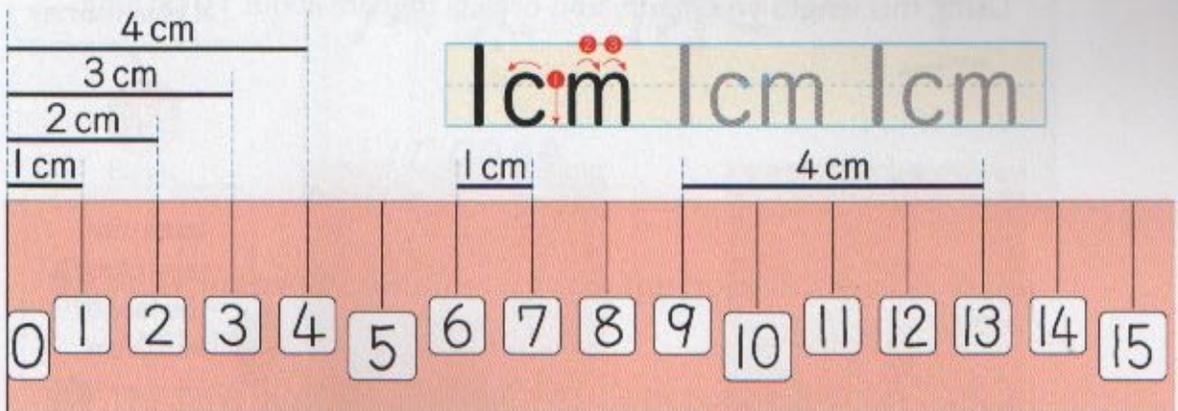
Haruto

Length can be expressed by how many

1-centimeter units will fill the length.

A centimeter is a standard unit used to measure length. It is written, **cm**.

1 cm



You can express a length by telling how many centimeter units will fill the length.

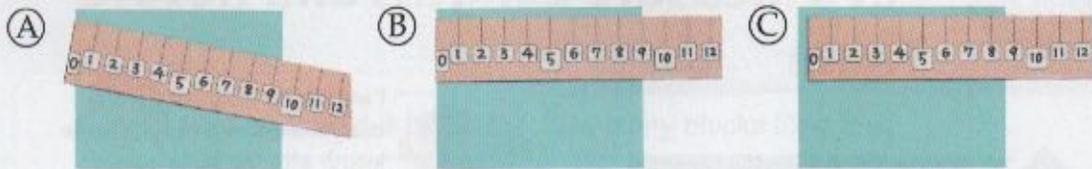


Shiho

You can find the same paper ruler as the one above on page 135.



1 Which picture below shows the correct way to measure?

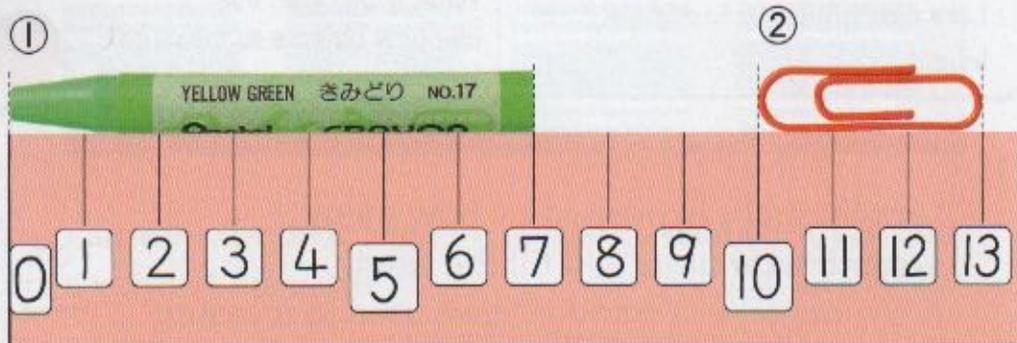


2 Use the paper ruler to measure the lengths of the three lines on page 39.



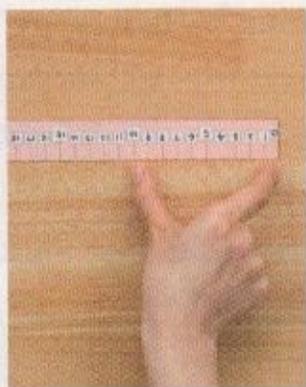
How many 1 cm units are in each length?

3 How many cm are the items below?



4 Make a length of 10 cm.

Using this length you made, find objects that are about 10 cm long.



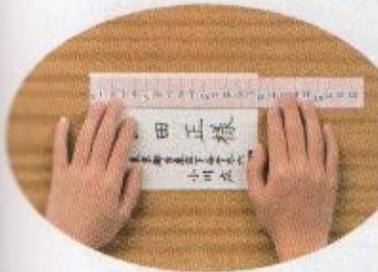
Learn to reproduce the length of 10 cm.



2

Measure the lengths of the horizontal and vertical sides of the postcard below.

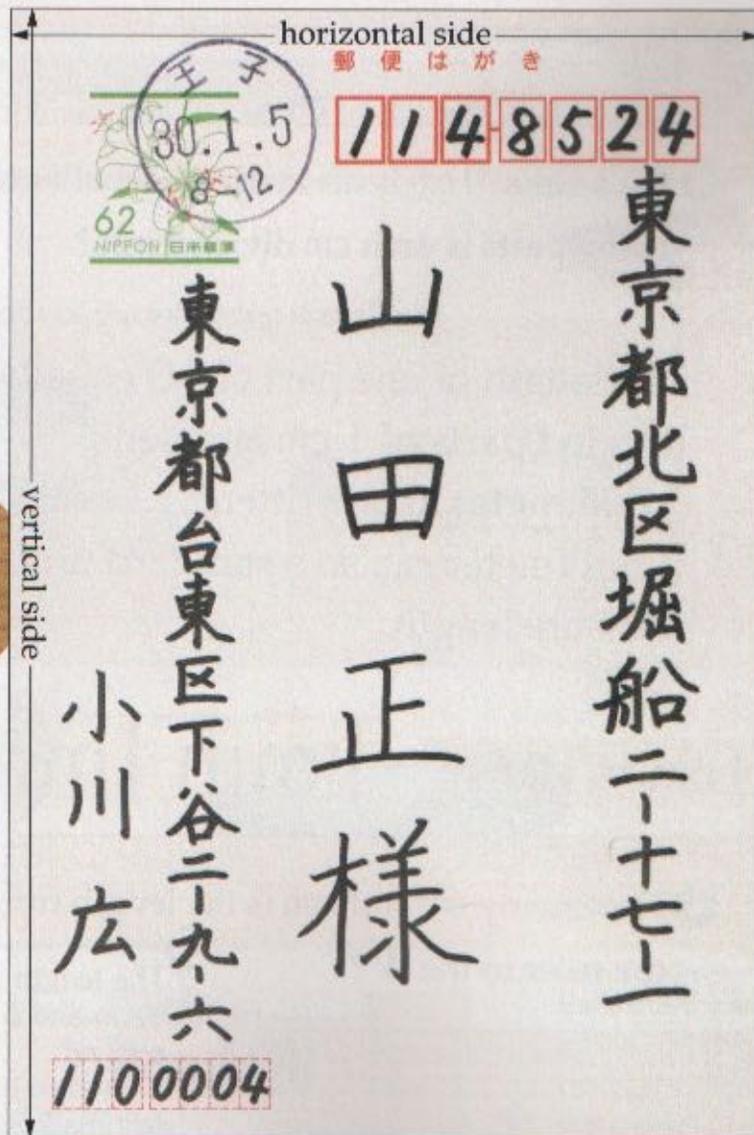
Estimate the length before you measure.



The length of the horizontal side is exactly cm.
The length of the vertical side is...



Haruto



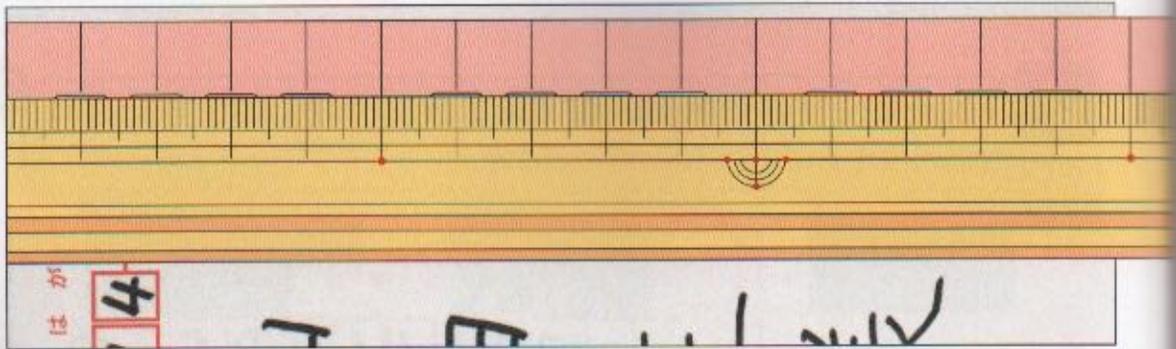
- 1 How many centimeters long is the horizontal side of the postcard?
- 2 The length of the vertical side is in between how many cm and how many cm?

Let's find out how to express lengths that are shorter than 1 cm.

If we have a ruler with smaller tick marks...

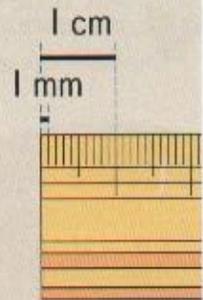


Riku



- 3 On a ruler, 1 cm is divided into smaller tick marks. How many parts is each cm divided into?

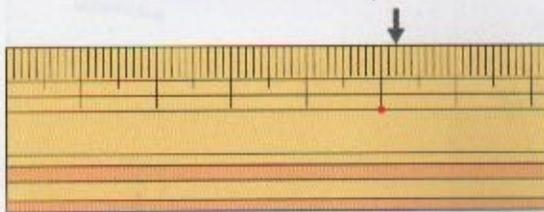
The length of one part of 10 equally divided parts of 1 cm is called **1 millimeter**. It is written as 1 mm. A millimeter is also a standard unit to measure length.



$$1 \text{ cm} = 10 \text{ mm}$$



- 4 How many cm and mm is the length from the left edge of the ruler to the ↓ ?



The length is in between 5 cm and 6 cm so it is 5 cm and... There are two more small tick marks so the length is 5 cm and mm.

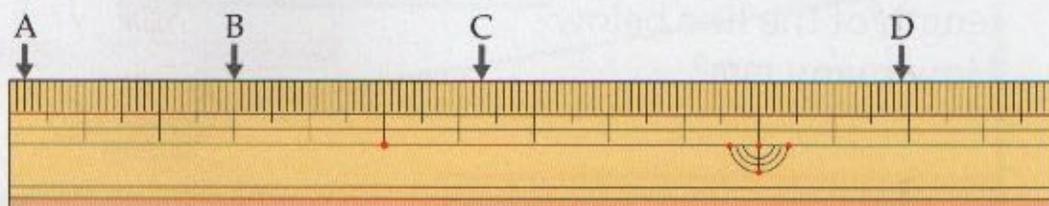


- 5 How many cm and mm is the length of the vertical side of the postcard?

A length that is shorter than 1 cm can be expressed by telling **how many 1-millimeter units will fill the length.**

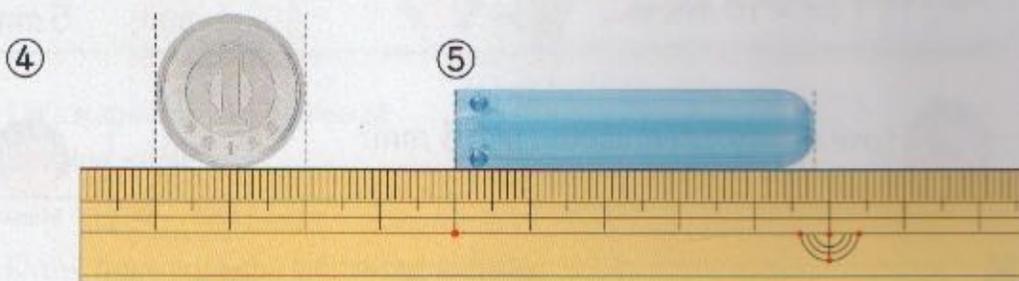
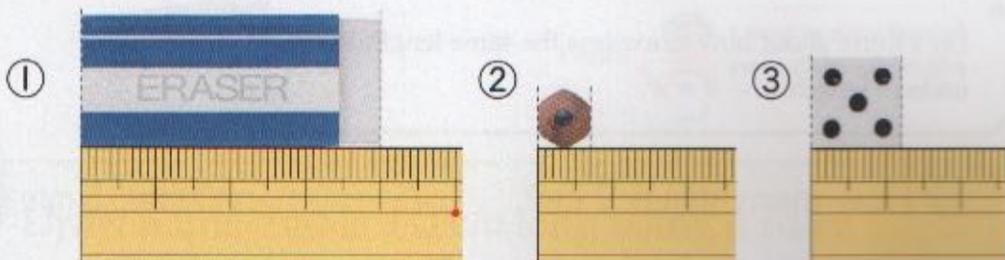


- 5 Measuring from the left edge of the ruler, what are the lengths to points A, B, C, and D?



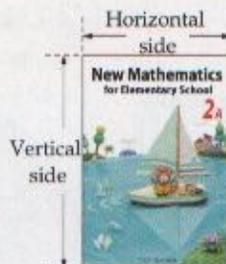
Additional Problems
→ Page 120 K

- 6 What are the lengths of the following items?



Estimate the length of the line below the glue stick, and then measure it using the ruler.

- 7 How many cm and mm are the lengths of the horizontal and vertical sides of this mathematics textbook?



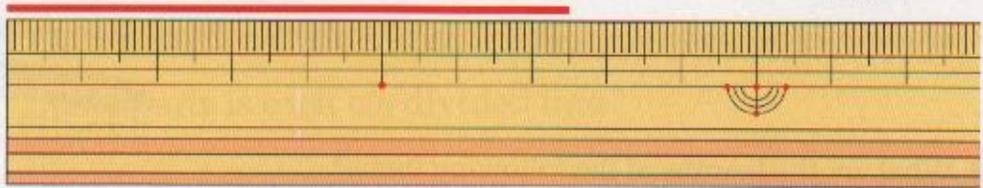
Riku You can tell the length of the die above in two ways: 1 cm 2 mm and 12 mm.

3

A path that does not bend or curve is called a **line**.

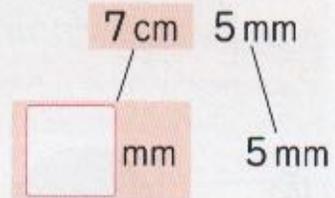
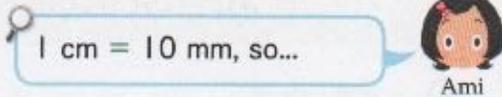
How many cm and mm is the length of the line below?

How many mm?

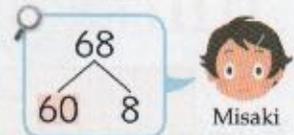


Let's think about how to express the same length using different units of length.

1 How many mm is 7 cm?



2 How many cm and mm is 68 mm?



Based on the fact that $1 \text{ cm} = 10 \text{ mm}$, you can express the same length in two units.



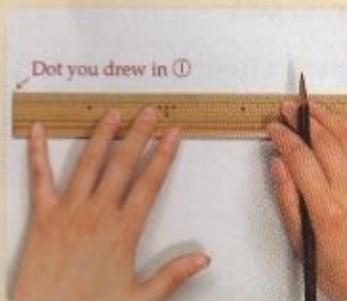
How to draw a line



1 Draw a dot.



2 Line the ruler up to the point.



3 Draw another dot 10 cm from the original dot.



8 How many cm and mm are the lines below?



- 9
- ① $5 \text{ cm} = \square \text{ mm}$ ② $30 \text{ mm} = \square \text{ cm}$
 ③ $4 \text{ cm } 7 \text{ mm} = \square \text{ mm}$ ④ $23 \text{ mm} = \square \text{ cm } \square \text{ mm}$

Additional Problems
 → Page 121 L

Haruto I want to draw lines of many different lengths.

4 Draw a line that is 10 cm long using a ruler.

Look at **How to draw a line.**

Let's summarize the process of drawing a line.

Locate both ends of the line to draw, and



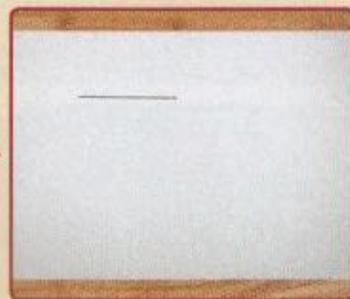
10 Draw lines with the following lengths.

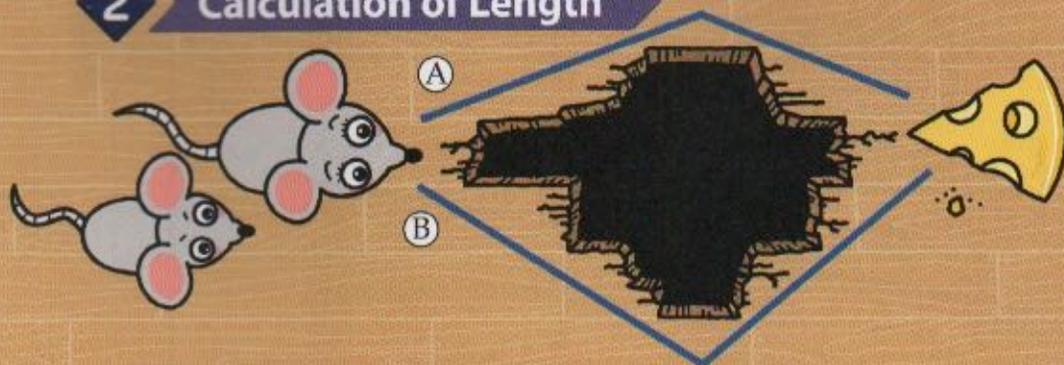
- ① 8 cm ② 9 cm 5 mm ③ 12 cm 3 mm ④ 78 mm

Kota Rulers are useful. You can measure length and draw lines with a ruler.

4 Using the side of the ruler that does not have scales, connect both dots.

5 Make sure to press the ruler firmly down and draw a line.





1

Compare the lengths of path ① and path ②.

1 How long is path ①?

$$4 \text{ cm} + 3 \text{ cm} = \square \text{ cm}$$



Kota

4 and 3 in centimeters makes...

2 How long is path ②?

$$\square \text{ cm } \square \text{ mm} + \square \text{ cm} = \square \text{ cm } \square \text{ mm}$$



Let's think about how to calculate with lengths.



Numbers in the same unit...



Shiho

3 Which path is longer? How much longer?

$$\square \text{ cm } \square \text{ mm} - \square \text{ cm} = \square \text{ cm } \square \text{ mm}$$



You need to calculate with **numbers in the same unit.**



Haruto

1

① $12 \text{ cm } 5 \text{ mm} + 4 \text{ cm}$

② $15 \text{ cm } 8 \text{ mm} - 6 \text{ cm}$

③ $5 \text{ mm} + 2 \text{ cm } 3 \text{ mm}$

④ $3 \text{ cm } 6 \text{ mm} - 4 \text{ mm}$



Use What You Have Learned

It's useful to know the lengths of some objects around you. Then, you can estimate how long other things are based on the lengths of those objects.

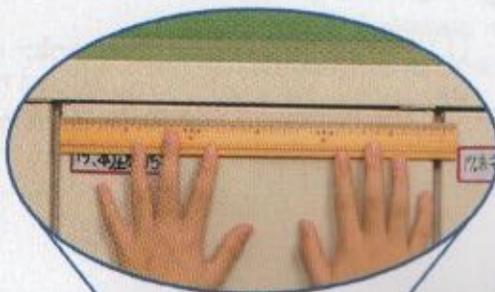
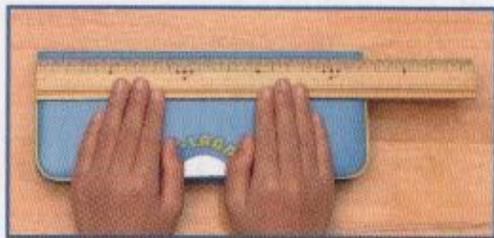
- Find the lengths of many different objects using a 30 cm ruler.

Estimate the lengths before measuring them.



Ami

Width of the desk is a little less than 3 pencil boxes long. So, I guess the desk is about 60 cm wide.



Investigating lengths		
Item	Estimation	Result
width of a locker	30 cm	28 cm
Length of a pencil case	20 cm	22 cm 5 mm
Height of a milk pack	10 cm	10 cm 6 mm



How to Draw a Long Line

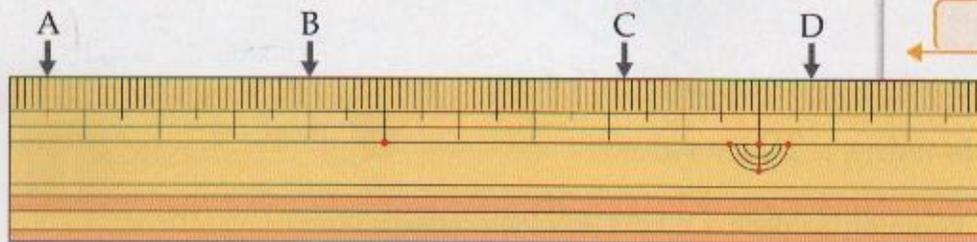
You can't use rulers to draw long lines on roads or playgrounds. How do people do that?

Just as in the picture on the right, a string is stretched out tightly and a line is drawn using it as a guide.



Check Your Understanding

- 1 What are the lengths from the left edge of the ruler to points A, B, C, and D?



◀ Can you read the tick marks on the ruler?

Page 43 2

- 2 Fill in the () with the units of length.

- ① the thickness of a notebook: 4 ()
 ② the length of a pencil: 15 ()



◀ Do you know how large the units of length are?

① Page 43 2

② Page 41 1

- 3 Fill in the □ with numbers.

- ① 1 mm is one out of □ divided parts of 1 cm.
 ② 8 cm has □ 1 cm units.
 ③ The length of 5 cm and 4 mm added together is

Ⓐ □ cm Ⓑ □ mm, or Ⓒ □ mm.

◀ Do you know the structure of the units of length?

① Page 43 2

② Page 41 1

③ Page 46 3

Page 48 1

- 4 Calculate the following.

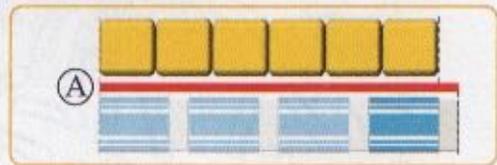
- ① $2\text{ cm } 5\text{ mm} + 3\text{ cm}$
 ② $5\text{ cm } 8\text{ mm} - 2\text{ cm}$

◀ Can you calculate with lengths?

Page 48 1

Focus on the lengths of objects and express the lengths with units

- ① Misaki is stuck on how to express the length of line ①. Why is Misaki stuck?



Write the word that fits in the .



Misaki

I measured the length of line ①. It's a little more than 6 blocks long, and it's exactly 4 erasers long. These measurements differ in the of length.



Riku

You can express a length by telling how many centimeter units fill the length.

- ② Haruto says that it's useful if you use both centimeters and millimeters.

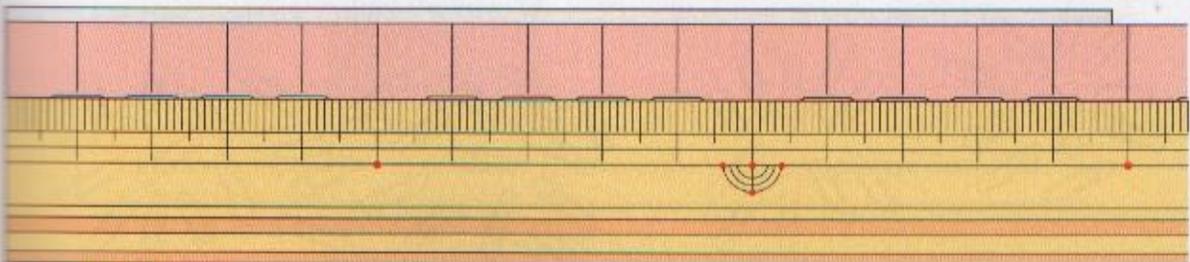
What does he mean?

Write the word that fits in the .



Haruto

For example, the vertical length of a postcard is between 14 cm and 15 cm, a little more than 14 cm. If you use millimeters, then you can express the little bit of extra length by telling how many units fit.





Let's Investigate Numbers Greater Than 100



We each took a handful of paper clips.



I wonder how many clips we took.

To count how many clips we have, we...



The structure of numbers and how to read them
Page 131 ②

1 How to Express Numbers and Their Structure

1 How many paper clips are there?

① How many groups of 10 paper clips are there?

② How many groups of 100 paper clips are there?

When you have ten 10's, it becomes 100, doesn't it?

Ami

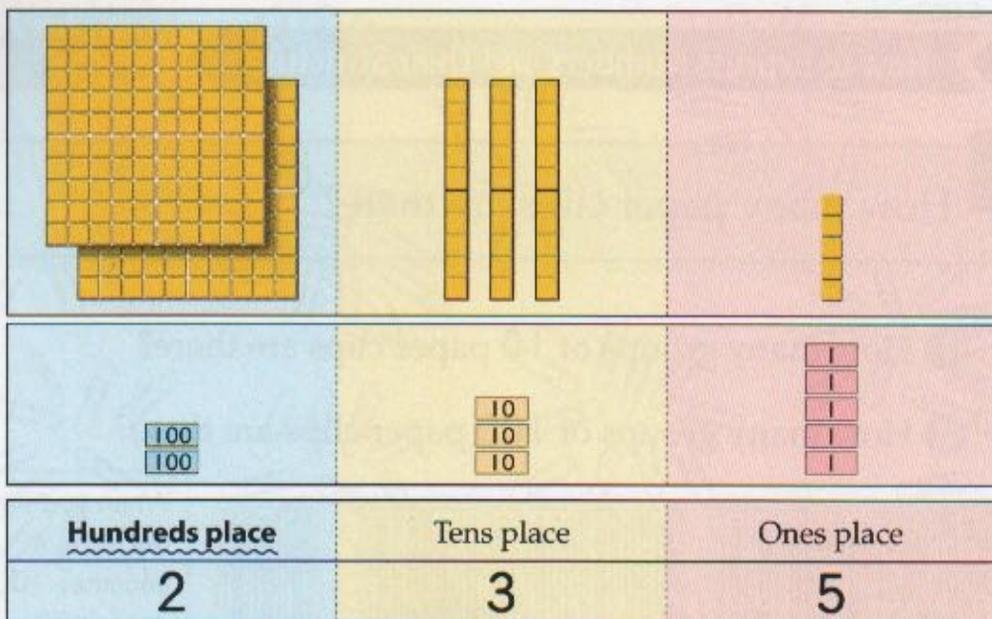
100's 10's 1's

Let's investigate how to read and write numbers that are greater than 100.

When you have 2 groups of a hundred, the number is called **two hundred**.

When you put two hundred and thirty-five together, the number is called **two hundred thirty-five**.

3 Write two hundred thirty-five using numerals.



Two hundred thirty-five is written as 235.

You can read and write the number of clips if you view it as made of 2 **hundreds**, 3 **tens**, and 5 **ones**.



Misaki

4 The numeral 235 has the numeral in its hundreds place, the numeral in its tens place, and the numeral in its ones place.

Shiho



I wonder if we can read and write other numbers greater than 100.

2

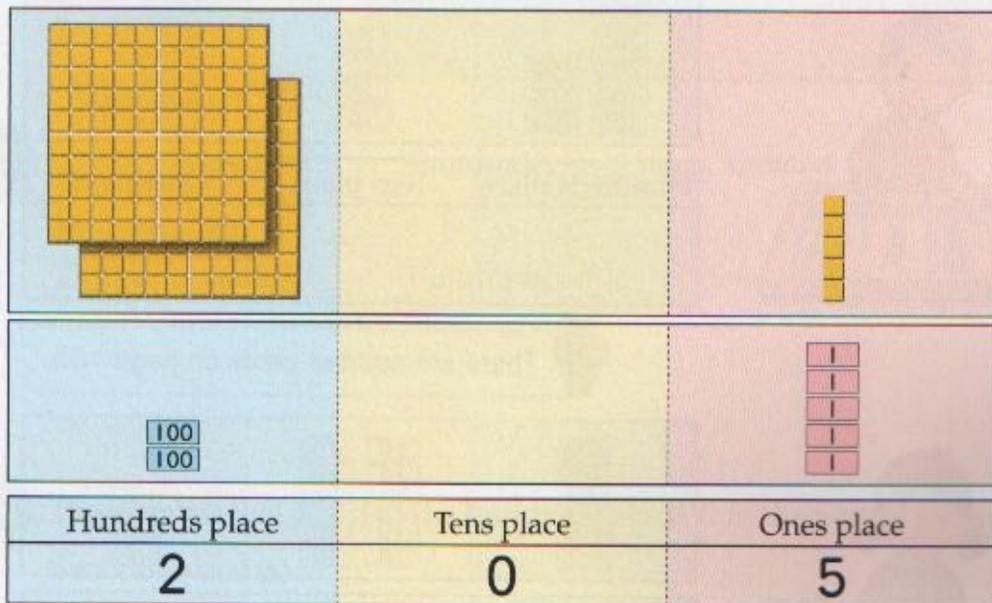
Write the number of  with numerals.

What should I do with the tens place?

Let's find out how to write numbers.



Haruto



Two hundred five is written as 205.

There are no tens, so the numeral in the tens place will be 0.



Ami

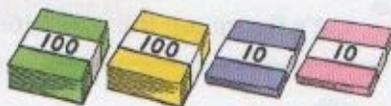
1

Write the number of sticks and colored paper.

①



②



2

Read the following numbers in ① to ⑤.

① 153 ② 614 ③ 509 ④ 760 ⑤ 800

3

Write the following numbers using numerals.

- ① One hundred seventy six ② Eight hundred five
 ③ Nine hundred twenty ④ Six hundred

Riku



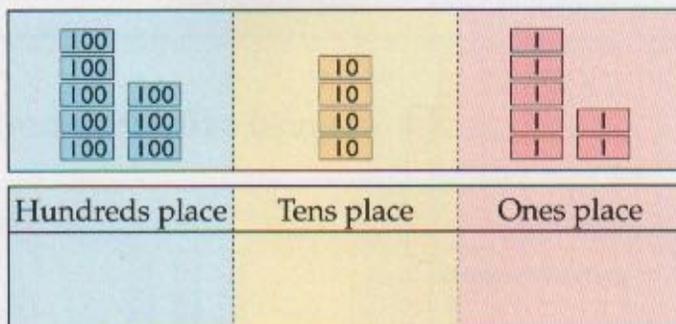
Now I know how to express numbers greater than 100.

3

We created numbers by laying down number cards. What numbers are shown below?



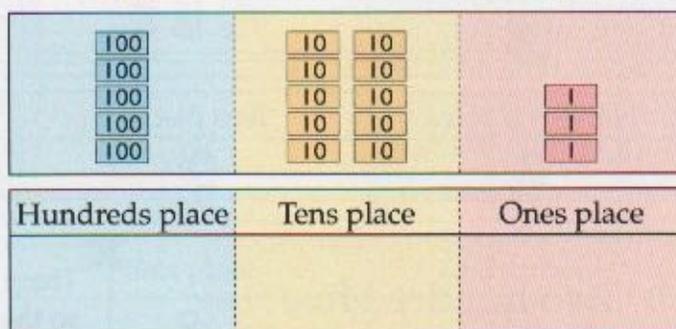
Taichi



There are number cards on page 135.



Yukino



- 1 How many 's, 's, and 's are there?

Yukino has ten 's in the tens place...



Kota

Let's figure out the structure of numbers.

- 2 Fill in numerals in each hundreds, tens, and ones place.

If there are ten 's, you put them together to make one and move it into the hundreds place.



Shiho



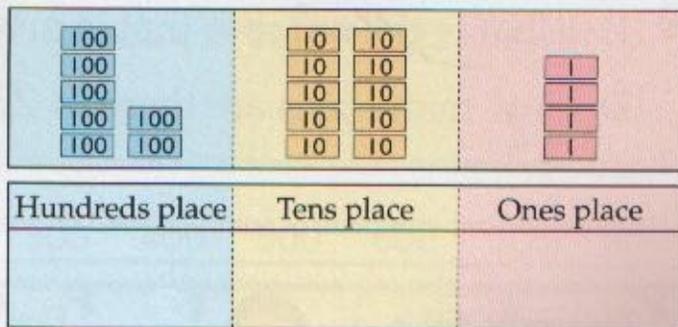
(Move)

- 3 Show 684, 710, and 308 with number cards.



Ten 's makes one . Ten 's makes one . These systems look similar.

- 4 Write the appropriate numeral in each place.



- 5
- ① 321 is made of hundreds, tens, and ones.
- ② 630 is made of hundreds, and tens.

- 6 The number that has 8 in the hundreds place, 0 in the tens place, and 5 in the ones place is .

- 7 Show the math sentence that is explained in the .

- ① A number made of 200 and 50 is 250.

Se Puede Retomar

$$\boxed{} + \boxed{} = 250$$

- ② 738 is a number made of 700 and 30 and 8.

$$738 = \boxed{} + \boxed{} + \boxed{}$$

- ③ 403 is a number made of 400 and 3.

$$403 = \boxed{} + \boxed{}$$



You can call math sentences the "language of math."



4

- (1) What is the number that is made of 14 tens?
 (2) How many tens are there in 230?

Let's expand our viewpoint of numbers based on tens.

The number that is made of ten 10s is...



Ami

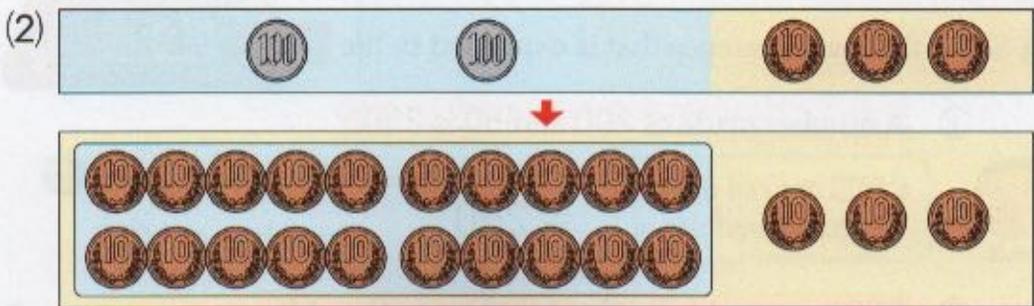
First, split 230 into 200 and 30.



Riku



14 tens $\left\langle \begin{array}{l} 10 \text{ tens} \rightarrow 100 \\ 4 \text{ tens} \rightarrow 40 \end{array} \right\rangle$



230 $\left\langle \begin{array}{l} 200 \rightarrow 20 \text{ tens} \\ 30 \rightarrow 3 \text{ tens} \end{array} \right\rangle$ tens



You can think about how big a number is based on tens, too.



Kota

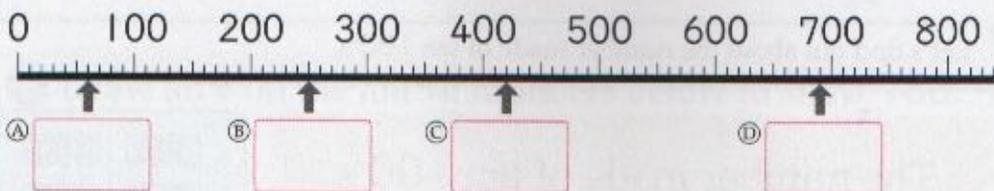
8

- ① What is the number that is made of 48 tens?
 ② How many tens are in 360?



5

Look at the line of numbers below and answer the questions.



Let's think about how to read numbers greater than 100 on a line of numbers.

- 1 What does the smallest interval between the tick marks show?

The part between 0 and 100 is divided into segments.



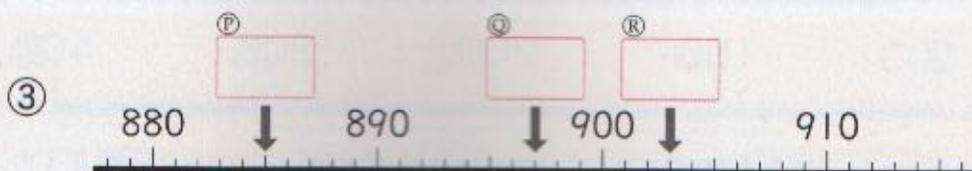
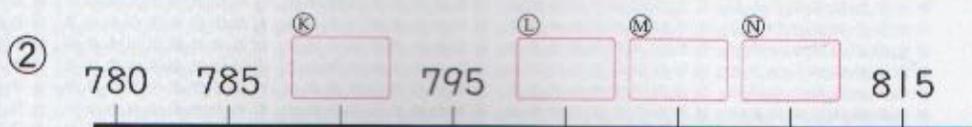
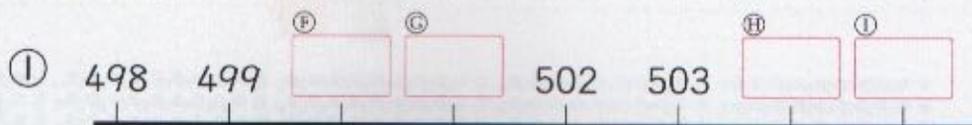
When reading a line of numbers, first think about what the smallest interval between the tick marks shows.

- 2 Write the numbers that fit in the under the line of numbers above.
- 3 Draw \uparrow s on the line of numbers to show where 550 and 790 are.

If you focus on what the smallest interval between the tick marks shows, you can read numbers on the line of numbers like you read numbers up to 100.



- 9 Fill in the with numbers.



Additional Problems

→ Page 122 ○

Haruto



If you extend the line of numbers to the right, I wonder if there are even larger numbers.

6

How many ● are there altogether?

① How many 100's are there?

Let's find out about the number made of ten 100's.

The number made of ten 100's is called a **thousand** and it is written as 1000.

100	100
100	100
100	100
100	100
100	100

10 tens makes 100, and 10 hundreds makes 1000.



Ami

↓
1000

10

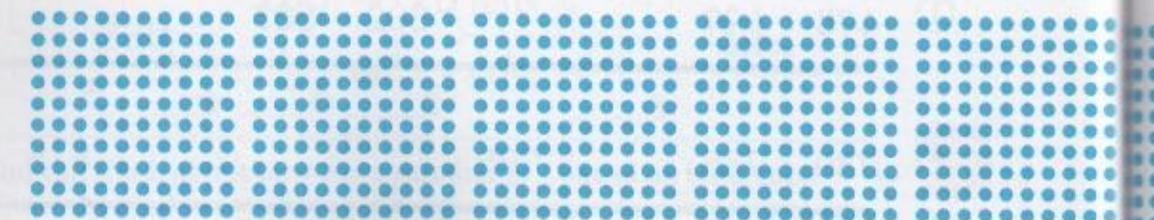
Look at the line of numbers below and answer the questions.

- ① How many more does 900 need to make 1000?
- ② What is the number that is 300 less than 1000?
- ③ What is the number that is 70 less than 1000?
- ④ What is the number that is 1 less than 1000?
- ⑤ How many 10's do you need to make 1000?

Kota



1, 10, 100... then 1000!



0 100 200 300 400

I wonder what the smallest interval between the tick marks shows.

Fill in the on the right.

7

Explain what 780 is made of.

Let's think about in what ways we can view the same number.

1 Draw an \downarrow on the line of numbers below to show 780.

2 Fill in the with numbers.



Shiho

780 is made of
 and 80.



Riku

780 is 20
less than .



Misaki

780 is made of
 tens.

3 Express Shiho's idea with a math sentence.

Shiho's idea: $780 = \text{} + \text{$



You can view the same number **in different ways**.



Haruto

Ami



Math sentences and lines of numbers are also useful when you view the same number in different ways.

600

700

800

900

1000

990

A

995

B

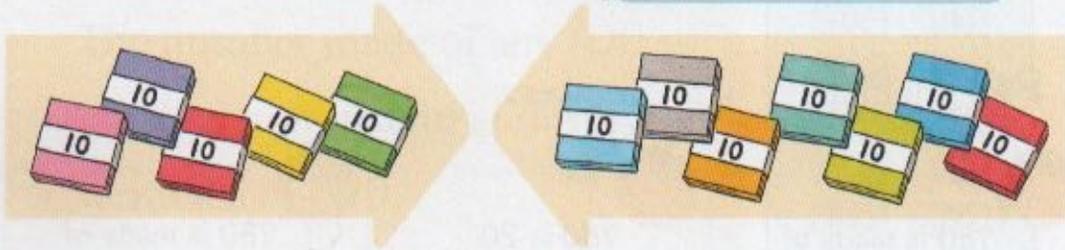
1000

1

What is the answer of $50 + 70$?

Let's figure out how to calculate it.

How did you think when you calculated $30 + 20$ and $50 - 20$?



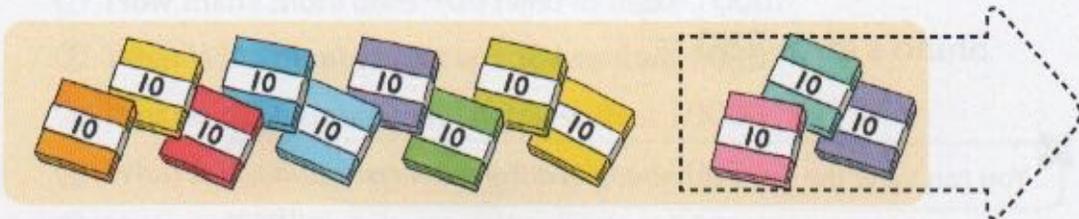
How many bundles of ten are there?

+ = , so there are bundles.



Kota

1 Explain how to calculate $120 - 30$.



① $30 + 80$

② $90 + 50$

③ $110 - 40$

④ $150 - 90$

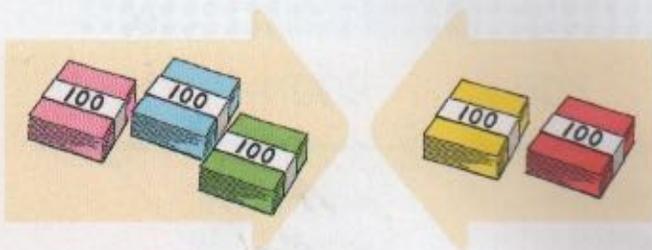
⑤ $170 - 80$

Additional Problems

→ Page 122 P

2

Think about how to calculate $300 + 200$.



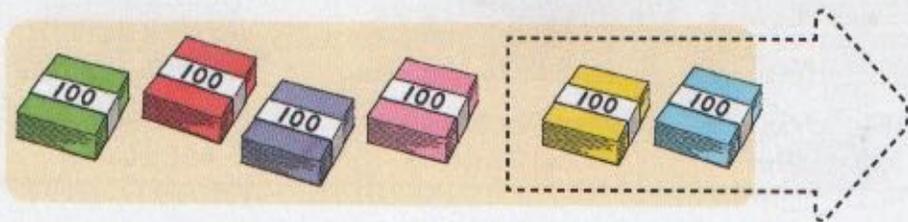
We can calculate it like we did with bundles of ten.



Shiho

1 How many bundles of 100 are there altogether?

2 Explain how to calculate $600 - 200$.



2

- ① $400 + 400$ ② $100 + 800$ ③ $300 + 700$
④ $700 - 300$ ⑤ $500 - 200$ ⑥ $1000 - 600$



If you think with bundles of ten or 100, you can do addition and subtraction of tens and hundreds like you learned to add and subtract in first grade.



Misaki

3

Think about how to calculate the following.

(1) $500 + 30$

(2) $530 - 30$

Hundreds place	Tens place	Ones place
5	3	0

3

- ① $200 + 80$ ② $280 - 80$
③ $600 + 7$ ④ $607 - 7$

Riku



Thinking how many hundreds and how many tens there are in a number is also useful when you calculate.

3

Comparing Numbers

muy numérico pero estructural, aunque con algunos referentes cuantitativos.

1

Compare the number of students in 3 schools.



East School
398 students



West School
412 students



South School
465 students

Let's think about how to compare numbers.

1 Compare the number of students in East School to the number of students in West School.

2 Compare the number of students in West School to the number of students in South School.

	Hundreds	Tens	Ones
East School	3	9	8
West School	4	1	2
South School	4	6	5

To compare numbers, which part of numbers should you pay attention to?



First, you should compare **the numerals in the highest place, or the hundreds**. If the numerals are the same, **then** you should compare **the numerals in the second highest place, or the tens**.



Haruto

The relative size of numbers, greater or less, can be expressed using one of the following signs: $>$ and $<$.

Greater $>$ Less

Less $<$ Greater



$412 > 398$ 412 is greater than 398

$412 < 465$ 412 is less than 465

1 Fill in the below with the appropriate sign ($<$ or $>$).

① 289 307

② 798 789

③ 607 602

④ 91 103

Misaki



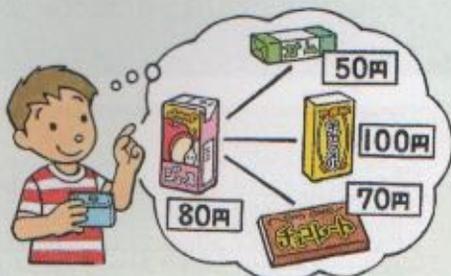
The signs $>$ and $<$ are useful to show which number is greater or less.

2

Hiroshi has 150 yen.

He is going to buy an
80 yen juice box and a
snack.

Which snack can he buy?



1 Can Hiroshi buy gum? Explain why.

Let's find out how to express that 150 is greater than
 $80 + 50$ using a math sentence.

I wonder if I can use
> or <.



Riku

You can express that 150 is greater than $80 + 50$
by using the math sentence $150 > 80 + 50$.

2 Suppose Hiroshi is going to buy one of the other snacks
instead. For each case, use a math sentence to show that
what will cost him is greater or less than 150 yen.

$150 > 80 + 50$ 150 is greater than $80 + 50$.

$150 < 80 + 100$ 150 is less than $80 + 100$.

$150 = 80 + 70$ 150 is equal to $80 + 70$.

Using > or <, you can write a math sentence to show
the situation where two amounts are different.



Shiho

2 Fill in the below with the appropriate sign (>, <, or =).

① 120 $60 + 70$

② 800 $850 - 50$

③ $20 + 90$ 102

Additional Problems

→ Page 122 Q

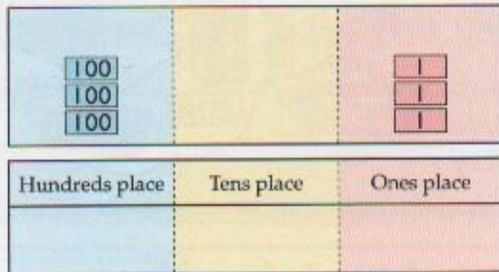
Kota



Now we can express more situations with math sentences than before.

Check Your Understanding

- 1 What are the following numbers? Write them using numerals.



- 2 Show the following sentence in a math sentence:

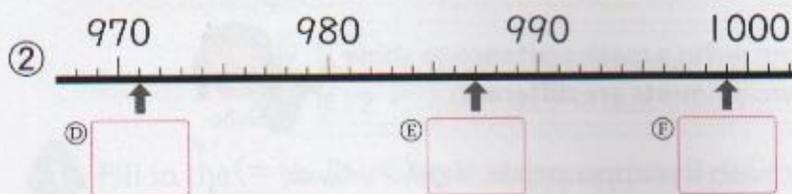
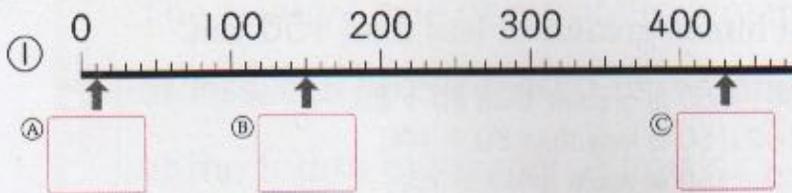
The number made of 300 and 7 is 307.

$$\square + \square = \square$$

- 3 ① The number made of 24 tens is .

- ② 350 is made of tens.

- 4 Write the numbers that the ↑s are pointing to.



- 5 Write a numeral that can go in the ?

$$367 < 3\square 7$$



I wonder if there is only one answer...

- ◀ Do you understand the structure of 3-digit numbers?

Page 55 2

- ◀ Can you show the structure of a number in a math sentence?

Page 56 3

- ◀ Can you tell how large numbers are based on units of 10?

Page 58 4

- ◀ Can you identify numbers on a line of numbers?

① Page 59 5

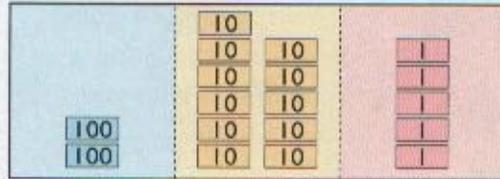
② Page 60 6

- ◀ Can you tell which number is greater or less?

Page 64 1

1 Focus on the structure of numbers and think about how to express numbers

We created a number by laying down number cards. What is the number?



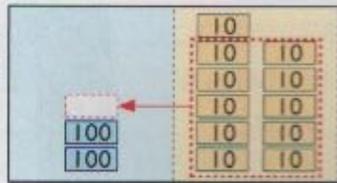
Complete Riku's idea and write a numeral in each place.

Hundreds place	Tens place	Ones place



Riku

If there are bundles of ten, you put them together to make 100 and move it into the place to the left.



2 Focus on bundles of ten and think about how to calculate

Look at calculations ① to ④. If you focus on bundles of ten, which calculations on the right can be used to think about calculations ① to ④?

Draw lines to connect each pair of calculations.

① $80 + 50$ • $7 + 9$

② $70 + 90$ • $16 - 9$

③ $120 - 60$ • $8 + 5$

④ $160 - 90$ • $12 - 6$

Which one holds more?



Tomorrow we are going on a field trip. Bring a water bottle with you.

Let's compare how much water our water bottles can hold.



Masashi

Sayaka

They checked their water bottles using cups they have at their homes.



Masashi

Hello. Mine holds 4 cups of water.



Sayaka

Mine holds more. It holds 5 cups of water.



The next day...

What? It looks like mine holds more water.



Masashi

Yes, it does.



Sayaka

Masashi's water bottle holds fewer cups of water but looks like it holds more water than Sayaka's. How can that be? Discuss with your classmates.



Misaki

Masashi and Sayaka used different cups.



Haruto

The cups are different in .

6

Units for Amount of Water

Let's Measure Amounts of Water and Record Them

They are using the same sized cups.



A



cups using



B



cups using



1

Compare the amounts of water the water bottles shown above can hold?

Let's think about how to compare amounts of water.

1 Which water bottle holds more water?

2 For the bottle which holds more water, how much more does it hold?

Explain using  shown above.

If you use cups of the same size, you can use numbers to show which water bottles holds more water and how much more it holds.



Kota



Shiho

If we don't have the same sized measuring container, we will have difficulty...

Riku



In the case of length, we thought about...

Esto son de capacidad. Interesante que metan otras magnitudes, además de longitud. Nosotros le apostamos a longitud antes que a las otras unidades.

2

How can we express the amount of water or other liquid so that everyone will use the same number for the same amount?

Let's find out how to express amounts of water or other liquid.

A length is expressed by telling how many centimeter and millimeter units fill the length.



Haruto

We express an amount of a liquid such as water, by telling how many 1-deciliter it is. A deciliter is a standard unit to measure amounts of liquid, and it is written as dL.



1 dL



We can express an amount of water or other liquid by telling how many 1-deciliter it is. This system is similar to how we express a length by telling how many 1-centimeters it is.



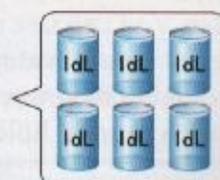
Ami

1 How many 1-deciliter units of water do these water bottles hold? How many dL of water is in each water bottle?

A



B



Water bottle ① holds 2 dL more than water bottle ②.

1 Find the amount of water of many different containers using a 1 dL measuring cup.

Estimate the amount before finding it out.



Shiho



It would be a bother to use a 1 dL container to measure and express the amount of water that a much bigger container holds.

3

Find the amount of water that the carton holds.



1 How many 1 dL measuring cups of water does the carton hold? How many dL of water is in the carton?

I wonder if there is a unit that shows a larger amount.

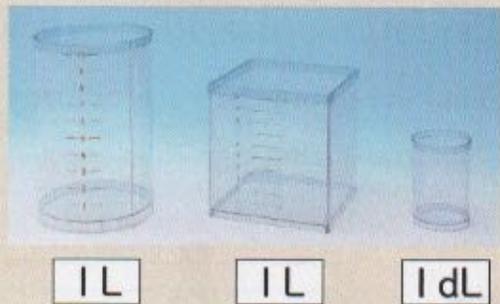


Kota

Let's find out about a unit that shows a larger amount.

When showing a large amount of liquid, use a unit called a liter.

Liters are written as L
and 1 L is the same as
10 dL.



$$1 \text{ L} = 10 \text{ dL}$$

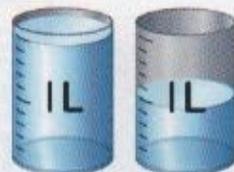


- 2 Check to see if a 1 L measuring cup holds ten 1 dL measuring cups of water.



Does each mark on a 1 L measuring cup show how many dL?

- 3 How many L and dL is the amount of water held in the carton on the previous page?



One mark on the 1 liter measuring cup is 1 dL, and it shows 5 so...



Riku

- 4 How many 1 L units is equal to 5 L?



You can express large amounts of liquids by telling how many 1 L units.



Misaki

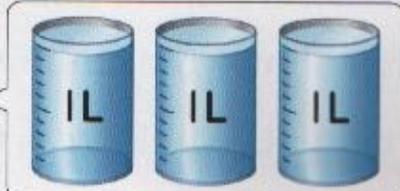


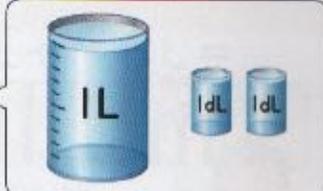
2 Fill in the with numbers.

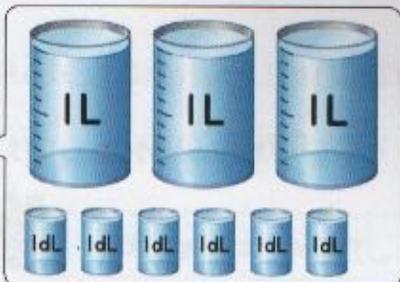
① 1 L is the amount that is made of dL.

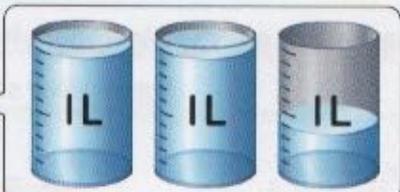
② 4 L is the amount that is equal to 1 L units.

3 Express the amount of water of each of the following containers in two ways, (A) and (B).

①   (A) L
(B) dL

②   (A) L dL
(B) dL

③   (A) L dL
(B) dL

④   (A) L dL
(B) dL

Additional Problems
→ Page 123 R

Ami  I wonder if there are other units of amount of liquid.

4

Measure the amount of water of this plastic bottle.



It holds dL and a little more.
I wonder if there is a smaller
unit of amount of liquid than dL.



Shiho

Let's find out how to show the amount of liquid that is smaller than 1 dL.

The unit milliliter shows the amount of liquid that is smaller than dL. Milliliter is written as mL. 1000 mL is 1 L.

$$1 \text{ L} = 1000 \text{ mL}$$



- Put water in a 1000 mL carton and move it to a 1 L measuring cup.

It is 1 cup exactly.



You can express small amounts of liquid by telling how many 1 mL units.



Misaki

- Fill in the with numbers.

1 L is the amount of liquid that is made of mL.



5

Water bottle (A) holds 1 L
3 dL of water. Water bottle
(B) holds 1 L of water.

Answer the following questions.



- (1) Water bottles (A) and (B) are both filled with water.
How much water is there altogether?

Let's think about how to calculate with amounts of water.

$$\square \text{ L } \square \text{ dL} + \square \text{ L} = \square \text{ L } \square \text{ dL}$$

Numbers in the same unit...



Riku

- (2) What is the difference in amounts of water
between the two containers?

$$\square \text{ L } \square \text{ dL} - \square \text{ L} = \square \text{ dL}$$

You can calculate with **numbers in the same unit,**
just like you calculate with length.



Ami

5

① $2\text{L} + 1\text{L} 5\text{dL}$

② $4\text{L} 5\text{dL} - 3\text{L}$

③ $3\text{L} 4\text{dL} + 2\text{dL}$

④ $2\text{L} 7\text{dL} - 6\text{dL}$

Additional Problems

→ Page 123 S



Use What You Have Learned

The units of amount of water you have just learned are used for many objects around you.

- Find other familiar containers that use units such as mL and L.

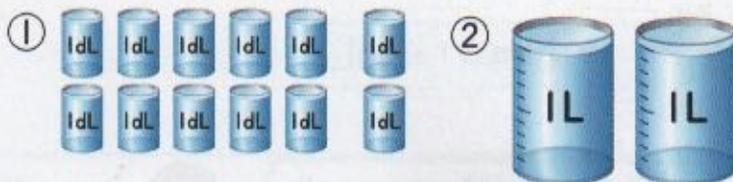


Sometimes you will see ml or mL being used instead of mL, and ℓ instead of L.



Check Your Understanding

- 1 What are the amounts of water shown?



◀ Can you show amounts of water?

Page 71 3

- 2 Fill in the with numbers.

① 8 L is the amount of liquid that is equal to L units.

② 1 L = mL

◀ Can you tell the structure of the units of amounts of liquid?

① Page 71 3

② Page 74 4

3 Place the appropriate units in the ().

① The amount of beverage in a plastic bottle ... 500 ()



② The amount of water in a bucket 8 ()



③ The amount of yogurt drink in a bottle 150 ()



◀ Can you tell how large the units of amounts of liquid are?

① Page 74 4

② Page 71 3

③ Page 74 4

4 Calculate the following:

① $4\text{L}3\text{dL} + 2\text{L}$ ② $6\text{L}5\text{dL} - 3\text{L}$

◀ Can you calculate with amounts of water?

Page 75 5

Wrapping Up Your Learning: Units for Amount of Water

Grow Your "Eyes for Math" — Key Viewpoints and Ways of Thinking

Focus on the amount of water and express it with units

Haruto thinks that the way of expressing amount of liquid is similar to that of expressing length.



Think about what words fit in the below and complete Haruto's idea.



Ⓐ We show by telling how many units such as dL it is.

Ⓑ We show by telling how many units such as cm fill it.

In both cases, you tell how many units of a given amount...



Do You Remember?

1 Fill in the with numbers.

① $14 \text{ cm} = \text{ mm}$

② $90 \text{ mm} = \text{ cm}$

③ $105 \text{ mm} = \text{ cm mm}$

2 Mika and her brother go to buy some snacks. Mika has 52 yen, and her brother has 46 yen.

① How much money do they have altogether?

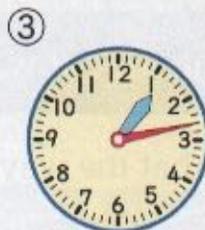
② Which one has more money?
How much more?



Warm-up

3 What time is it?

How to Tell Time
Page 131 ③



Playing with
Numbers and
Calculations

What numbers are hidden?

Se Puede Retomar

What numerals are hidden in the following calculations?

①
$$\begin{array}{r} 4 \text{ (A)} \\ + 8 \\ \hline \text{(B) } 8 \end{array}$$

②
$$\begin{array}{r} 2 \text{ I} \\ + \text{(C) } 9 \\ \hline 6 \text{ 0} \end{array}$$

③
$$\begin{array}{r} 4 \text{ (D)} \\ + 2 \text{ 7} \\ \hline \text{(E) } 3 \end{array}$$

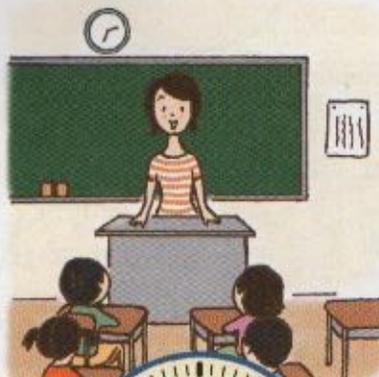
④
$$\begin{array}{r} 4 \\ + 7 \text{ (F)} \\ \hline \text{(G) } 3 \end{array}$$

⑤
$$\begin{array}{r} \text{(H) } 9 \\ + \text{(I)} \\ \hline 9 \text{ 7} \end{array}$$

What time is it?



 :



 :



Review how to read a clock with long and short hands.

How to Tell Time
Page 131 ③

When do you read a clock in your daily life?

Discuss with your classmates.



Misaki

We have a clock in our classroom.
I read the clock when the class started.

I have a clock in my home.
I went to bed at 9 o'clock last night and woke up at 6 o'clock this morning.



Haruto

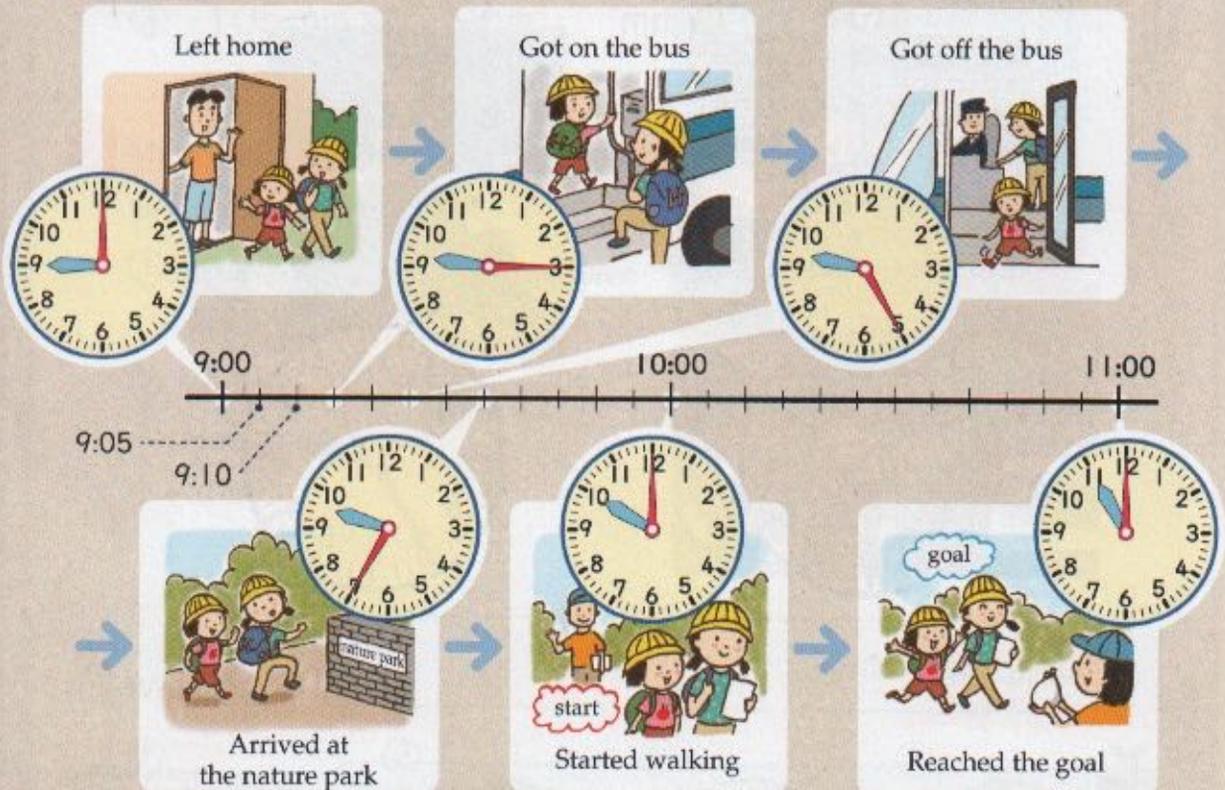


Shiho

We read a clock in many situations of our daily lives.

Let's Use Clocks in Our Everyday Life

Rie and her classmates participated in a walking event at the nature park.

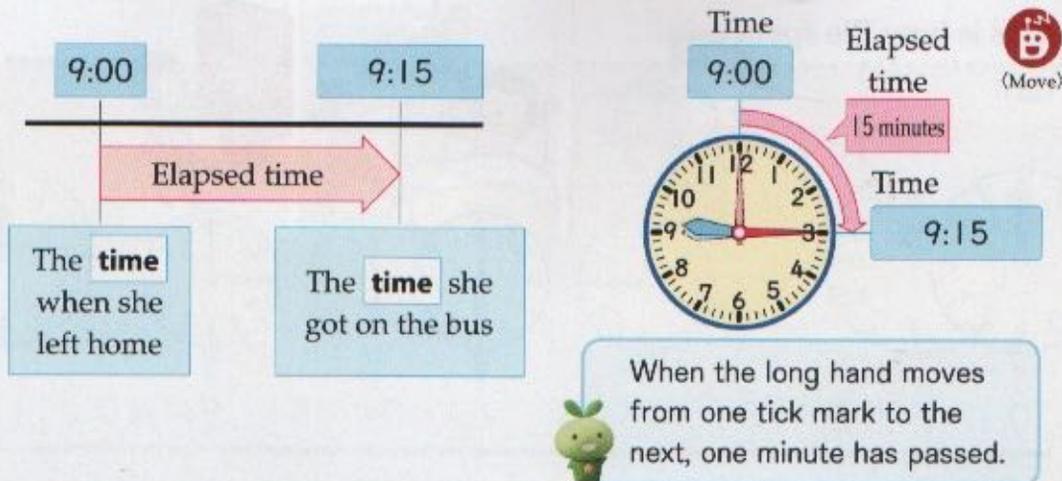


1

Look at the pictures above and answer the following questions:

- 1 The time Rie left home was 9 o'clock. Look at each of the clocks above and tell the time.
- 2 How many minutes did it take from the time Rie left her house to the time she got on the bus?

Let's think about time and elapsed time.



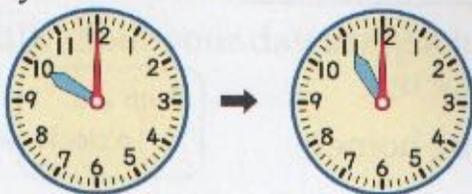
3 How many minutes was Rie on the bus?

Elapsed time is the period between two points in time.



4 How long did it take from the time Rie started walking to the time she reached the goal?

The time it takes for the long hand to move all the way around the clock is one hour.



1 hour = 60 minutes

1 It is 9:40 now. Tell the time using the information below.

- ① 1 hour after ② 1 hour before
③ 30 minutes before ④ 20 minutes after



Additional Problems
→ Page 123 T

2 ① 1 hour 20 minutes = minutes

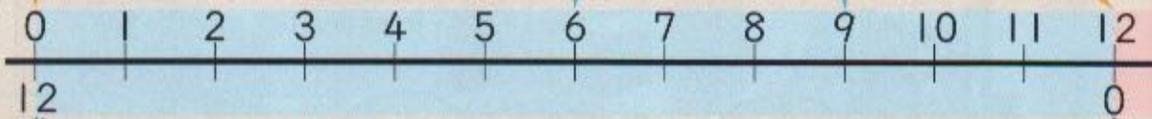
② 90 minutes = hour minutes

Kota



It was 9 o'clock when I went to bed last night. It was also 9 o'clock when Rie and her classmates left their homes. But I know they aren't the same time.

This is how Rie spent a day.



a.m.
(Morning)

Noon

2

Look at the pictures above and answer the following questions:

Let's use time and elapsed time in our daily life.

- 1 What time did Rie wake up?
What time did she come home?

Both are o'clock.



- 2 Tell each time using a.m. and p.m.



She mailed a postcard at 9 a.m.

- 3 How many hours are there in the a.m.?
How many in the p.m.?

- 4 How many hours are there in a day?

1 day = 24 hours

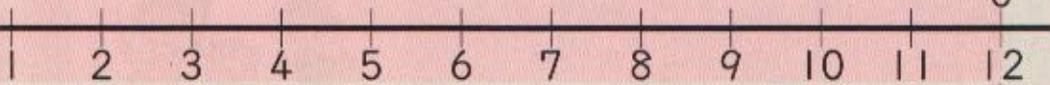


How many times does the short hand go around the clock in a day?

Came home



Went to bed



p.m.
(Afternoon)

5 How many hours was Rie awake?

I wonder if I can talk about my life using time and elapsed time.



Riku

6 Talk about your day using a.m. and p.m.



Shiho

I got to school at 8:15 a.m.
I left school at 3 p.m.
I went shopping with my family from 4 p.m. to 6 p.m.



Kota

I woke up at 6 a.m.
I went to bed at 8 p.m.
I was awake for hours.



How many hours did Shiho spend shopping with her family?



It looks like you can make your everyday life better **if you think about time and elapsed time.**



Haruto

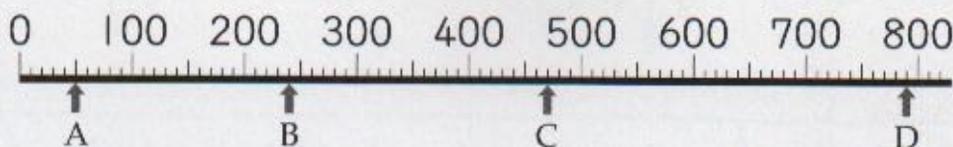
Challenge Yourself

→ Page | 28



Do You Remember?

1 What does the smallest interval between the tick marks on the line of numbers below show?
Write the numbers the ↑s are pointing at.



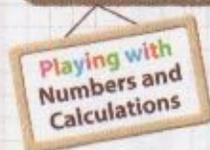
2 Arrange Ⓐ, Ⓑ, Ⓒ, and Ⓓ below from the largest to the smallest amounts of liquid.

- Ⓐ 5 dL Ⓑ 40 dL Ⓒ 3 L Ⓓ 200 mL

- 3** ① $41 + 32$ ② $38 + 50$ ③ $19 + 27$
 ④ $87 + 6$ ⑤ $300 + 40$ ⑥ $59 - 25$
 ⑦ $72 - 40$ ⑧ $91 - 68$ ⑨ $60 - 7$

Warm-up

- 4** ① $8 + 2 + 5$ ② $3 + 7 + 6$
 ③ $9 + 4 + 6$ ④ $7 + 1 + 9$



What numbers are hidden?

What numerals are hidden in the following calculations?

①	$\begin{array}{r} 87 \\ - \text{A} \\ \hline 80 \end{array}$	②	$\begin{array}{r} 59 \\ - \text{B} 5 \\ \hline 34 \end{array}$	③	$\begin{array}{r} 40 \\ - \text{C} 1 \\ \hline 9 \end{array}$	④	$\begin{array}{r} \text{D} 3 \\ - 2 \text{E} \\ \hline 27 \end{array}$	⑤	$\begin{array}{r} 9 \text{F} \\ - \text{G} 8 \\ \hline 42 \end{array}$
---	--	---	--	---	---	---	--	---	--

8

Better Ways to Calculate

Let's Think about Better Ways to Calculate

Formas condensadas de calcular

Students are playing.

First-graders



First-graders



Second-graders



1

Properties of Addition

1

7 first-graders are playing on the playground. 12 more first-graders and 8 second-graders come and join them. How many students are on the playground now?

1 Write a math sentence.

Math Sentence 

2 Think about how to calculate.



Shiho

$$7 + 12 + 8$$

First, I'll calculate the number of first-graders.

① $7 + 12 = 19$

② $19 + 8 = \square$



Kota

$$7 + 12 + 8$$

First, I'll calculate the number of students who joined later.

① $12 + 8 = 20$

② $7 + 20 = \square$



The order of the addends is...



Haruto



Let's find out what will happen to the answer if you change the order of the calculation.

- 3 Find the answer based on each of their methods, and compare the answers.



Summary

When using addition, the answers are the same even if the order of calculation is changed.

You can show Shiho's method using parentheses "(" and ") " as shown on the right.

$$(7 + 12) + 8 = 27$$

Number of first-graders

The part in parentheses shows a group of numbers and is calculated first.

- 4 Based on Kota's method, add () to the math sentence on the right.

$$7 + 12 + 8 = 27$$

Number of students who joined later



The answer is the same if the order of calculation is changed. So, $(7 + 12) + 8 = 7 + (12 + 8)$.



1 Look carefully at the numbers, think about ways to calculate and then do the calculations.

① $6 + 12 + 8$

② $9 + 34 + 6$



2 Think about ways to calculate $27 + 18 + 3$, and then do the calculation.

Misaki



If you think about which two numbers to add first, sometimes the calculations become easier, don't they?



Maki bought a lollipop for 15 yen and an eraser for 40 yen. She forgot to buy a pencil. She returned to the store and bought a pencil for 30 yen. How much does she spend altogether?



Ami

$$(15 + 40) + 30 = 85$$



Riku

$$15 + (40 + 30) = 85$$



Let's look at these math sentences and guess Ami's and Riku's ideas.

1 Explain Ami's and Riku's ideas.

If you pay attention to the parentheses...



Kota



Shiho

Pencils and erasers what Riku...

By using parenthesis, you can show your idea more clearly.



Haruto

Kota



You can call math sentences the "language of math".

2

Addition and Subtraction

1

Calculate $26 + 7$.

Let's look carefully at the numbers, think about ways to make the calculation simpler, and then calculate.



Haruto

$$\begin{array}{r} 26 + 7 \\ \swarrow \quad \searrow \\ 20 \quad 6 \end{array}$$

- ① 6 and 7 make 13.
- ② 20 and 13 make 33.



Ami

$$\begin{array}{r} 26 + 7 \\ \swarrow \quad \searrow \\ 4 \quad 3 \end{array}$$

- ① 26 and 4 make 30.
- ② 30 and 3 make 33.

Se Puede Retomar



- ① $44 + 8$
- ② $39 + 2$
- ③ $68 + 4$
- ④ $25 + 5$
- ⑤ $6 + 37$
- ⑥ $5 + 56$
- ⑦ $7 + 64$
- ⑧ $9 + 21$

Shiho



I wonder if we can make subtraction simpler.

2

Calculate $42 - 7$.

Let's look carefully at the numbers, think about ways to make the calculation simpler, and then calculate.



Misaki

$$\begin{array}{r} 42 - 7 \\ \swarrow \quad \searrow \\ 30 \quad 12 \end{array}$$

- ① Subtract 7 from 12 and get 5.
- ② 30 and 5 make 35.



Kota

$$\begin{array}{r} 42 - 7 \\ \swarrow \quad \searrow \\ 2 \quad 5 \end{array}$$

- ① Subtract 2 from 42 and get 40.
- ② Subtract 5 from 40 and get 35.



- ① $65 - 6$
- ② $76 - 8$
- ③ $52 - 9$
- ④ $33 - 5$
- ⑤ $51 - 3$
- ⑥ $43 - 4$
- ⑦ $72 - 3$
- ⑧ $40 - 7$



There can be many ways to calculate.



1

Find better ways to calculate based on properties of addition

Think about how to calculate $17 + 29 + 1$ easily, then answer the following questions:

- ① Calculate it from left to right and find the answer.

$$(17 + 29) + 1$$

- ② Shiho looked at the numbers carefully, found another way to calculate it, and did the calculation.

Write the word that fits in the below.



Shiho

When adding numbers, the answer are the even if the order of the calculation is changed. Based on this property, I added 29 and 1 first.

2

Focus on how we thought about the problem and show it in a math sentence.

- ③ Add parentheses to the math sentence below to show Shiho's order of calculation.

$$17 + 29 + 1$$

- ④ Calculate using Shiho's idea and find the answer.

Then, check if the answer is the same as the one you found in ①.



How many are there?

We have been making medals for the party since the day before yesterday. Let's think about the number of medals.



I wonder how many medals we made through yesterday.

Number of Medals We Made

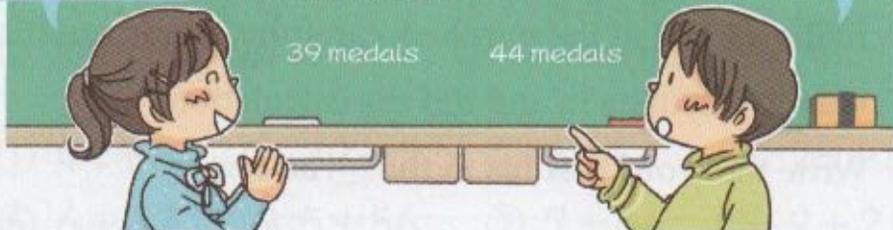
Day before yesterday

Yesterday

39 medals

44 medals

I wonder how many more medals we made yesterday than the day before yesterday.



The total number of medals we made through yesterday

Math Sentence 

+		

medals

The difference between the number of medals yesterday and the number of medals the day before yesterday

Math Sentence 

-		

medals

Explain how to do the addition and subtraction above using the algorithms.

Do you think you can do the same no matter what numbers are?



Shiho

$9 + 4 = 13$. 13 is greater than 10, so [...] to the tens place.

You can't subtract 9 from 4, so [...] from the tens place.



Haruto



Ami

I wonder if we can still calculate using the algorithm in the same way even when the numbers become much larger.



Let's Think about How to Calculate Using the Algorithms



1 Addition Algorithm

1 In Yuki's class, the students made 83 medals through yesterday. They made 46 medals today. How many medals did they make altogether?

Medals made through yesterday: () medals Medals made today: () medals

Altogether: medals

- 1 Fill in the () with numbers.
- 2 Write a math sentence.

Math Sentence



I wonder about how many medals it will be.



Kota

I wonder if I can find the answer using the algorithm.



Calculation of the tens place will be...



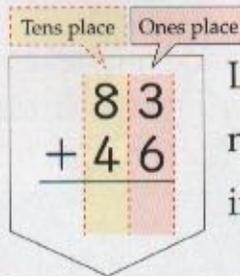
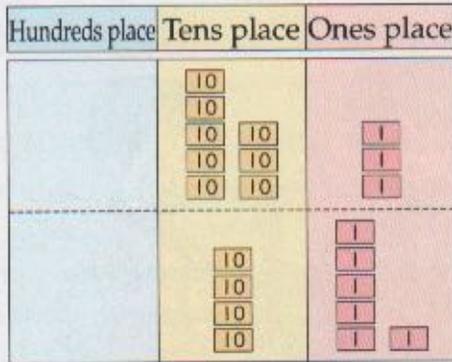
Ami

	8	3
+	4	6

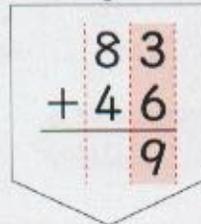
Let's figure out how to calculate using the algorithm.

Algoritmo

How to calculate $83 + 46$

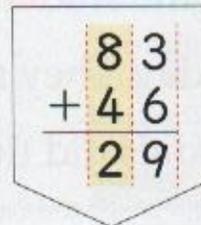
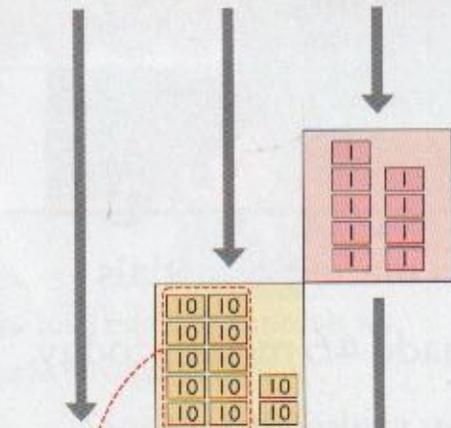


Line up the numbers vertically in each place.



Calculation of the ones place

$$3 + 6 = 9$$



Calculation of the tens place

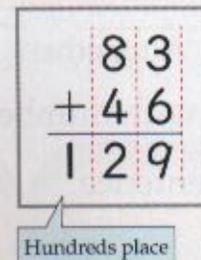
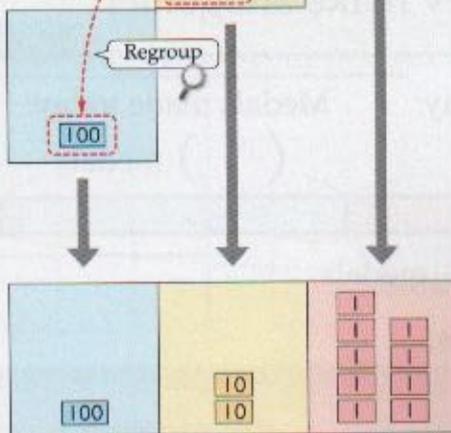
$$8 + 4 = 12$$

Write a 2 in the tens place.

Regroup 1 to the hundreds place.

Write a 1 in the hundreds place.

$$83 + 46 = 129$$



Hundreds place

1 Explain how to calculate $62 + 74$ using the algorithm.

2 ① $27 + 91$ ② $80 + 67$ ③ $54 + 55$

Additional Problems
→ Page 124 U

2

Calculate $76 + 58$ using the algorithm.

	7	6
+	5	8

Let's think about how to calculate using the algorithm.

I wonder how this is different from

$$\begin{array}{r} 83 \\ + 46 \\ \hline \end{array}$$



Haruto

Calculation of the ones place will be...



Riku

$$\begin{array}{r} 76 \\ + 58 \\ \hline \end{array}$$

$$\begin{array}{r} 76 \\ + 58 \\ \hline 4 \end{array}$$

Calculation of the ones place

$$6 + 8 = 14$$

Regroup 1 to the tens place.

Calculation of the tens place

The 1 that has been regrouped and 7 makes 8.

$$8 + 5 = 13$$

$$76 + 58 = 134$$

$$\begin{array}{r} 76 \\ + 58 \\ \hline 134 \end{array}$$

1 Think about how to do the calculations on the right using the algorithm.

(A)	4	6	(B)	9	3
	+	5	7	+	8

3

① $86 + 67$ ② $48 + 94$ ③ $75 + 36$

④ $52 + 78$ ⑤ $91 + 99$ ⑥ $74 + 46$

Additional Problems

→ Page 124 V

4

① $75 + 29$ ② $58 + 44$ ③ $17 + 83$

④ $98 + 7$ ⑤ $5 + 96$ ⑥ $97 + 3$

Additional Problems

→ Page 124 W

Shiho



Even if we have to regroup more than once, what you need to do remains the same line up the numbers vertically in each place and start calculating from the ones place.

1 Calculate using the algorithm.

- ① $95 + 53$ ② $48 + 71$ ③ $57 + 66$ ④ $69 + 47$
 ⑤ $43 + 67$ ⑥ $59 + 81$ ⑦ $63 + 87$ ⑧ $37 + 64$
 ⑨ $55 + 45$ ⑩ $98 + 9$ ⑪ $6 + 94$ ⑫ $1 + 99$

2 She had 76 pieces of colored paper.

Later, she bought 48 pieces of colored paper.

How many pieces of colored paper does she have now?



3 Wakako is going to buy an eraser for 55 yen and a pencil for 47 yen.

- ① Guess whether she can buy them or not if she has 100 yen.
 ② Calculate how much it is going to cost and check if you guessed right in ①.

4 In the math sentence below, what can go in the ?

Select from (A), (B), (C), (D), and (E).

$$64 + \square > 100$$



I wonder if there is only one answer.

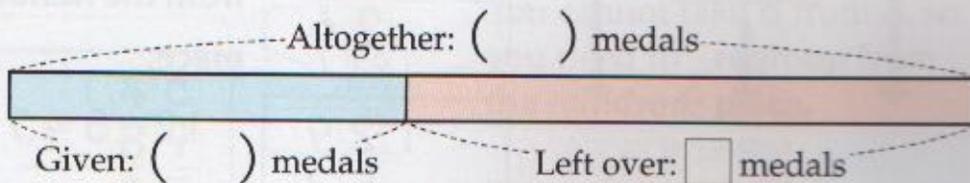
- (A) 26 (B) 28 (C) 32 (D) 38 (E) 40



3 Subtraction Algorithm

1

We made 129 medals altogether. If we give 53 medals to the guests, how many medals will be left?



- 1 Fill in the () with numbers.
- 2 Write a math sentence.

I wonder about how many medals will be left.

Math Sentence



Haruto

Maybe we can also use the algorithm to subtract...

Calculation of the tens place...



Misaki

	1	2	9
—		5	3

Let's think about how to calculate using the algorithm.

How to calculate $129 - 53$

Hundreds place	Tens place	Ones place	Hundreds place	Tens place	Ones place
100	10 10	1 1 1 1 1	1 — 29 — 53		
		1 1 1 1 1	1 — 29 — 53 6		
Regroup 100	10 10 10 10 10 10 10 10 10 10		1 — 29 — 53 6		
	10 10 10 10 10 10 10		1 — 29 — 53 76		
	10 10 10 10 10 10	1 1 1 1 1	1 — 29 — 53 76		
			129 — 53 76		$129 - 53 = 76$

Line up the numbers vertically in each place.

Calculation of the ones place
 $9 - 3 = 6$

Calculation of the tens place
You cannot take 5 from 2, so you need to **regroup from the hundreds place.**

$12 - 5 = 7$

3 Check if your answer is correct.

1	2	9
—	5	3
	7	6

7	6
+	5
	3

1 Explain how to calculate $145 - 71$ using the algorithm.

2 ①
$$\begin{array}{r} 134 \\ - 62 \\ \hline \end{array}$$

②
$$\begin{array}{r} 157 \\ - 95 \\ \hline \end{array}$$

③
$$\begin{array}{r} 163 \\ - 80 \\ \hline \end{array}$$

④ $117 - 37$

⑤ $172 - 81$

⑥ $109 - 72$

Additional Problems
→ Page 124 X

Haruto



100 is made of ten 10's, so when you regroup 1 to the tens place, you have ten 10's.

2

Calculate $145 - 89$ using the algorithm.

	1	4	6
-		8	9

Let's think about how to calculate using the algorithm.

I wonder how this is different from

$$\begin{array}{r} 129 \\ - 53 \\ \hline \end{array}$$



Shiho

Both the tens and the ones places...



Kota

	1	4	6
-		8	9
			7

		3	4	6
-		8	9	7

Calculation of the ones place

You cannot take 9 from 6, so you need to **regroup from the tens place.**

$$16 - 9 = 7$$

Calculation of the tens place

Since you regrouped, it became 3.

You cannot take 8 from 3, so you need to **regroup from the hundreds place.**

$$13 - 8 = 5$$

$$146 - 89 = 57$$

	1	4	6
-		8	9
		5	7

		3	4	6
-		8	9	7

3

① $125 - 49$

② $113 - 65$

③ $154 - 97$

④ $163 - 74$

⑤ $134 - 39$

⑥ $120 - 26$

Additional Problems

→ Page 125 Y

Misaki



Even if we have to regroup more than once, what you need to do remains the same line up the numbers vertically in each place and start calculating from the ones place.

3

Calculate $102 - 65$ using the algorithm.

	1	0	2
-		6	5

Let's think about how to calculate using the algorithm.

How to calculate $102 - 65$

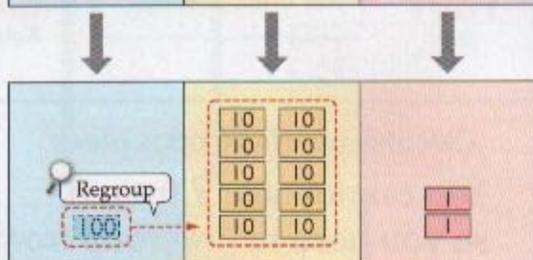
Hundreds place Tens place Ones place



$$\begin{array}{r} 102 \\ - 65 \\ \hline \end{array}$$

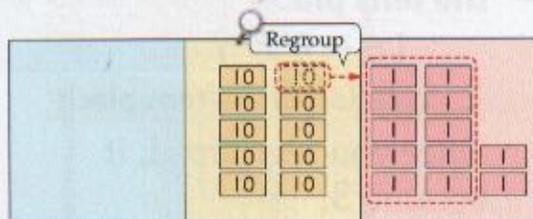
Line up the numbers vertically in each place.

Calculation of the ones place



$$\begin{array}{r} 102 \\ - 65 \\ \hline \end{array}$$

You cannot regroup from the tens place, so you need to **regroup from the hundreds place** first.



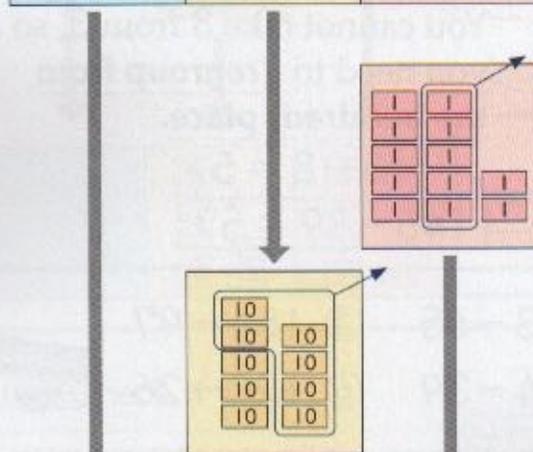
$$\begin{array}{r} 102 \\ - 65 \\ \hline \end{array}$$

Then, you need to **regroup from the tens place**.

$$\begin{array}{r} 102 \\ - 65 \\ \hline 7 \end{array}$$

$$12 - 5 = 7$$

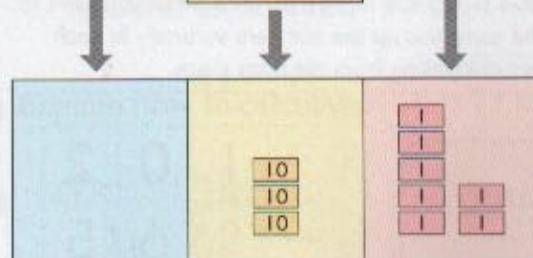
Calculation of the tens place



$$\begin{array}{r} 102 \\ - 65 \\ \hline 37 \end{array}$$

Since you regrouped, it becomes 9.

$$9 - 6 = 3$$



$$\begin{array}{r} 102 \\ - 65 \\ \hline 37 \end{array}$$

$$102 - 65 = 37$$

4 Calculate $103 - 47$ using the algorithm.

- ① To find the answer, fill in the with numbers and do the calculation of each place.

—			

Calculation of the ones place... - =

Calculation of the tens place... - =

In the ones place, you [...] 7 from 3.



Ami

- ② What is the answer of $103 - 47$?



Kota

Even if the numeral in the tens place is 0, the way to calculate using the algorithm is the same.

5 Calculate $105 - 8$ using the algorithm.



What will happen to the calculation in the tens place?

- 6
- | | | |
|--------------|--------------|--------------|
| ① $105 - 36$ | ② $101 - 74$ | ③ $106 - 29$ |
| ④ $100 - 58$ | ⑤ $103 - 9$ | ⑥ $100 - 8$ |
| ⑦ $102 - 6$ | ⑧ $101 - 7$ | ⑨ $108 - 9$ |

- 7 Maki has 106 sunflower seeds.
She gave 16 seeds to her brother today.
How many seeds does she have left?



8 Fill the with numerals to make a math sentence.

$$10 \square - 9 \square = 3$$



You can make more than one math sentence.

Riku



I wonder if we can add or subtract even larger numbers using the algorithm.

Additional Problems

→ Page 125 Z

4

Algorithms for Calculations with Large Numbers

Choose 4 cards from the following 6 cards:

0 1 2 3 4 5 and place them in the boxes of the calculations below.

$$\square \square + \square \square$$

$$\square \square - \square \square$$



You cannot place a 0 in the tens places for either calculation.

For the subtraction calculation, make sure

the number being subtracted from
> the number being subtracted



Kota

$$15 + 32$$



Ami

$$45 - 21$$

We can do both calculations because we have studied them previously.



Haruto

Now what if we put a numeral in the hundreds place of the number being added to and the number being subtracted from?



$$415 + 32 \quad 345 - 21$$



Even with larger numbers, I wonder if we can still calculate using the algorithms.....

1

Calculate using the algorithms.

(1) $415 + 32$

(2) $345 - 21$

Let's think about how to calculate with large numbers using the algorithms.

Based on the way we have used the algorithms to calculate ...



Misaki

- 1 Calculate (1) and (2) using the algorithms.

(1)					(2)				
	+					-			
<hr/>					<hr/>				



Even with larger numbers, it seems that we can still calculate using the algorithms like we have done up to now.

2

Calculate using the algorithms.

(1) $18 + 345$

(2) $526 + 9$

(3) $483 - 27$

(4) $524 - 6$



$$\begin{array}{r} 18 \\ +45 \\ \hline \end{array}$$

(1)					(2)				
	+					+			
<hr/>					<hr/>				
(3)					(4)				
	-					-			
<hr/>					<hr/>				



$$\begin{array}{r} 83 \\ -27 \\ \hline \end{array}$$

1

① $546 + 28$

② $69 + 307$

③ $104 + 26$

④ $873 + 9$

⑤ $8 + 134$

⑥ $207 + 3$

2

① $594 - 68$

② $951 - 32$

③ $735 - 26$

④ $345 - 7$

⑤ $264 - 9$

⑥ $612 - 4$



Even with larger numbers, we still can calculate using the algorithms if we line up the numbers vertically in each place and start calculating from the ones place.





Check Your Understanding

- 1 East Elementary School has 84 first-graders and 82 second-graders.

How many first-graders and second-graders are there altogether?

◀ Can you make math sentences out of situations and find the answers?

Page 91 1

- 2 Calculate using the algorithm.

- ① $137 - 54$ ② $169 - 83$
 ③ $181 - 92$ ④ $125 - 48$
 ⑤ $130 - 75$ ⑥ $160 - 81$

◀ Can you tell how to subtract using the algorithm?

①②

Page 95 1

③~⑥

Page 97 2

- 3 There were 120 sheets of drawing paper. Today, we used 36 pieces. How many pieces of drawing paper are left?

◀ Can you make math sentences out of situations and find the answers?

Page 97 2

- 4 Calculate using the algorithm.

- ① $104 - 38$ ② $102 - 76$
 ③ $108 - 49$ ④ $105 - 9$

◀ Can you tell how to subtract using the algorithm?

Page 97 3

- 5 Yuta paid 100 yen to buy snack food for 67 yen and gum for 23 yen.
How much was his change?



◀ Can you make math sentences out of situations and find the answers?

Page 97 3



Focus on the structure of numbers and think about how to calculate using the algorithm

- ① Misaki says that the calculation done with the algorithm on the right is wrong.

Think about what numbers fit in the below and explain why.

$$103 - 26$$

		10	
	1	0	3
-		2	6
		8	7

The calculation of the tens place is wrong.

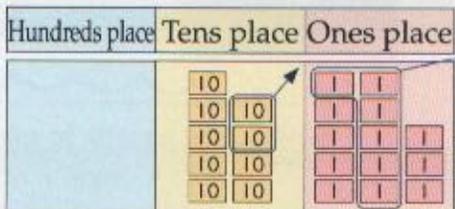
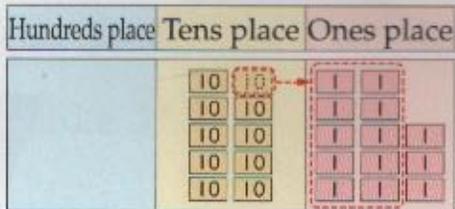
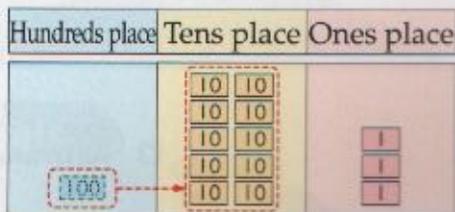
When you regroup 1 from the hundreds place to the tens place, you have 10's.

Next, when you regroup 1 from the tens place to the ones place, you have 10's in the tens place.

So, calculation of the tens place will be - 2, not 10 - 2.



Misaki

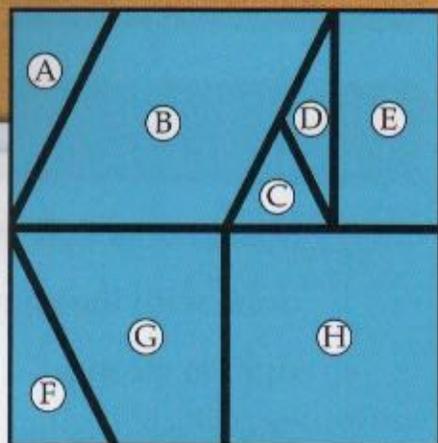


- ② What is the correct answer of $103 - 26$?

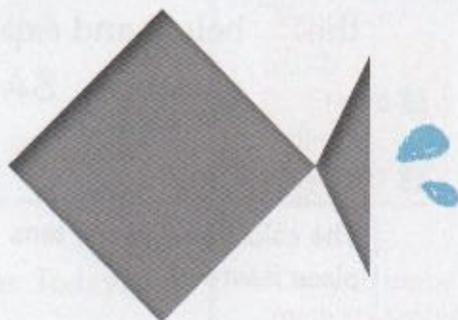
Can you make these shapes?



Cut out the puzzle pieces on page 133 and make the shapes shown below.



Which pieces should you use?
You can arrange pieces in many ways.



Discuss what you notice about shapes **A** through **H**.



They have 3 lines or 4 lines.



E is long and thin.



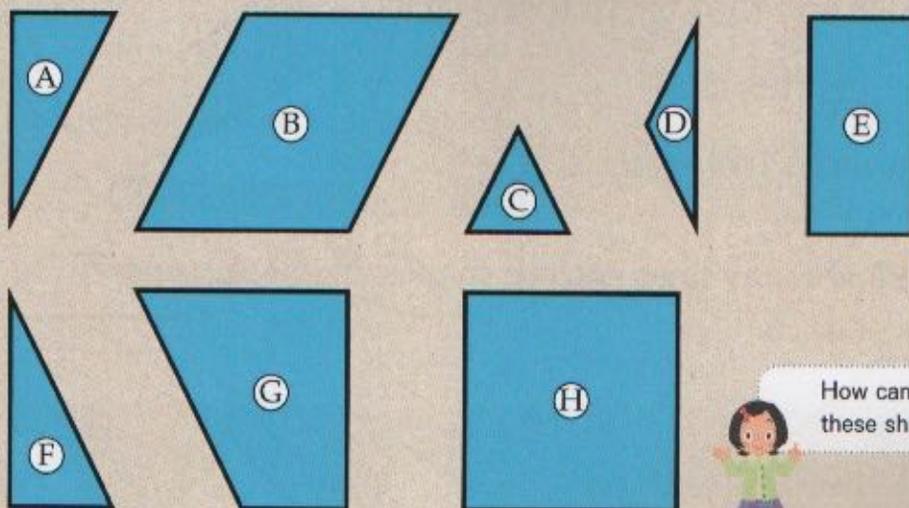
There are many different kinds of shapes with 3 or 4 lines, but...



10

Rectangles and Squares

Let's Investigate the Shapes of Triangles and Quadrilaterals



How can we describe these shapes?



Ami

1 Triangles and Quadrilaterals

1

We are going to divide shapes (A) through (H) into 2 groups of shapes that are alike. How should we divide them?



Haruto

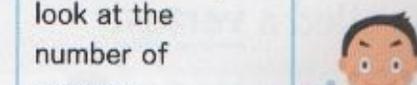
I think we can make a group of shapes with 3 lines and a group of shapes with 4 lines.

Let's find the characteristics of these shapes.



Shiho

If you carefully look at the number of lines...

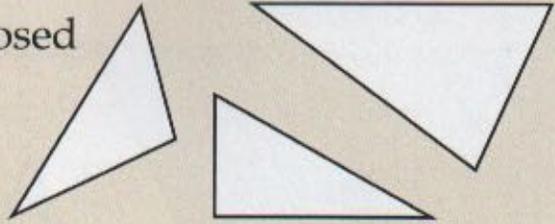


Kota

If you carefully look at the number of corners...

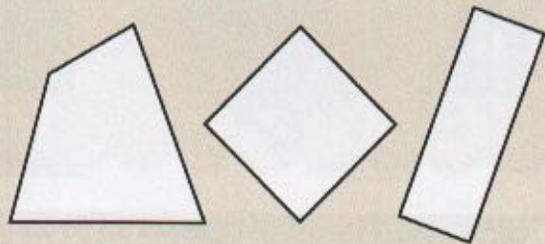
1 How many lines enclose shapes (A), (C), (D), and (F)?

A shape that is enclosed
by 3 lines is
called a **triangle**.



2 How many lines enclose shapes (B), (E), (G), and (H)?

A shape that is
enclosed by 4
lines is
called a **quadrilateral**.



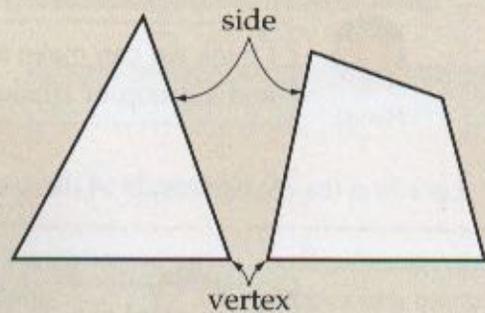
3 How many corner points do
triangles and quadrilaterals have?

The number
of lines and
the number of
corners are...



Misaki

A line in a triangle or
quadrilateral is called a
side. A corner point of a
triangle or quadrilateral
is called a **vertex**.



4 How many sides and vertices do triangles and quadrilaterals have?

You can find triangles and quadrilaterals **if you focus on the numbers of sides or vertices.**



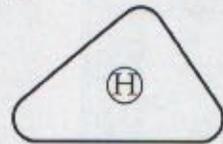
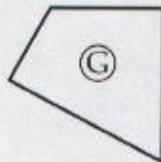
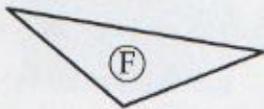
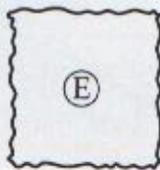
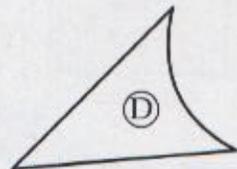
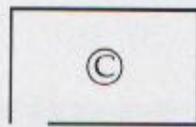
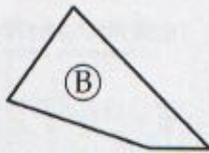
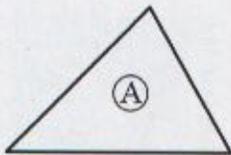
Riku



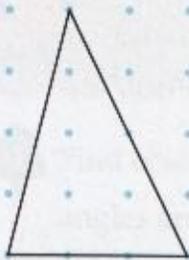
Ami

The lines and corner points of the shapes have names.

1 Find the triangles and quadrilaterals.



2 Draw 2 more sides to make triangles.



3 Draw 3 more sides to make quadrilaterals.

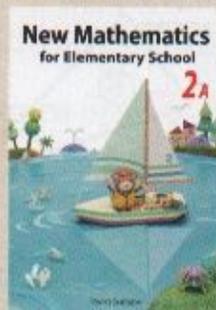
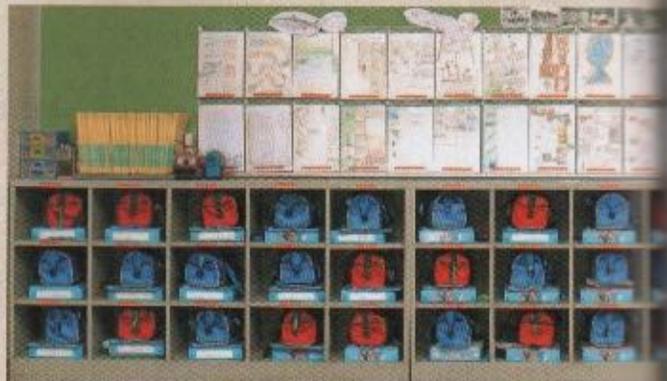
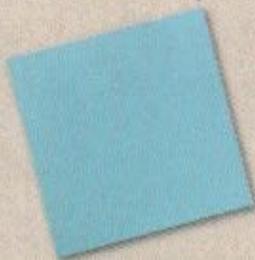


4 What shape are textbooks and notebooks?





What types of quadrilaterals are there around you?



How are these similar to each other?



Misaki

2

Rectangles and Squares

1

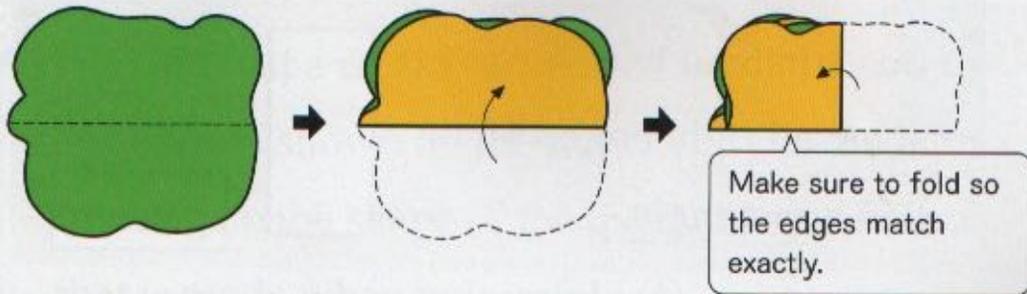
Let's investigate the shape of the corners of our textbook and notebook.



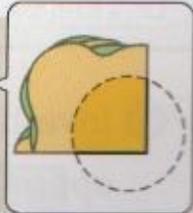
Let's identify the characteristics of corner shapes.

1 Fold a piece of paper as shown on the following page to make this corner shape.

Then place the corner of your folded paper on the corners of your textbook and notebook.



The corner shape that is made this way is called a **right angle**.

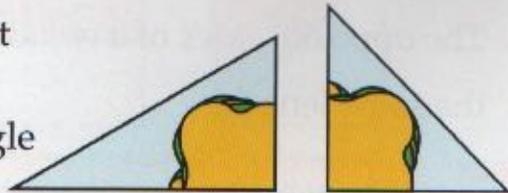


Both textbooks and notebooks have corners that are right angles.



Ami

- 2 One of the corners of a set square is a right angle. Check using the right angle you created.



- 1 Find objects that have right angles around you.

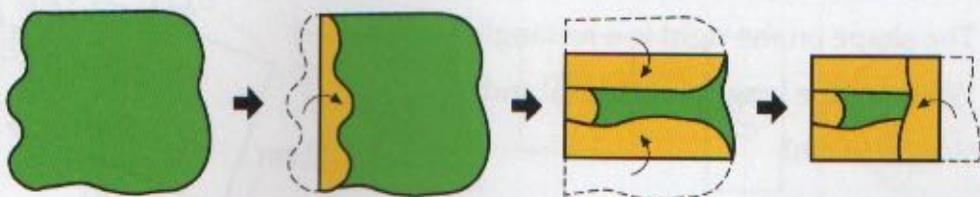
Kota



Many quadrilaterals around us have corners that are right angles, don't they?

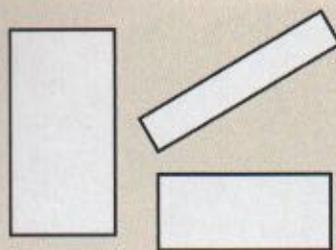
2

Fold a piece of paper as shown below. Investigate the corners of the quadrilateral you made.



- 1 How many of the corners are right angles?

A quadrilateral with 4 corners that are all right angles is called a **rectangle**.



Let's find the characteristics of rectangles.

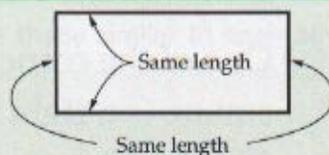
2 Investigate the lengths of the opposite sides of a rectangle.

Fold the paper and compare the lengths of the sides.



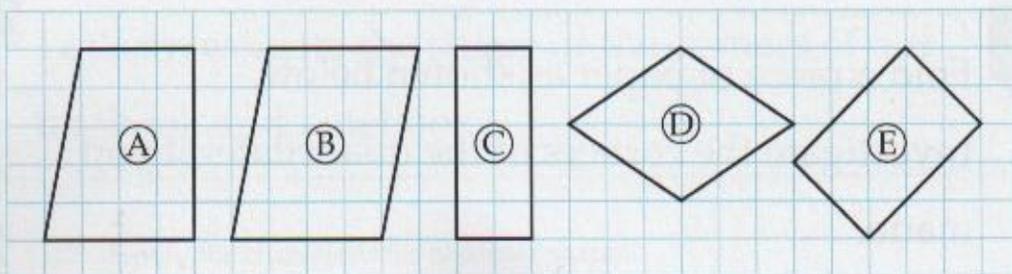
Summary

The opposite sides of a rectangle are the same length.

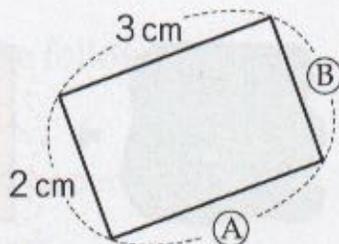


You can make characteristics of shapes clear if you look carefully at the lengths of the sides.

2 Which of the following are rectangles?



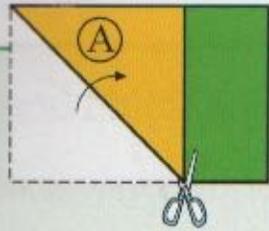
3 The shape on the right is a rectangle. What are the lengths of side A and side B in cm?



3

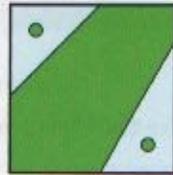
Fold and cut a rectangular piece of paper as shown on the right.

Investigate the shape of the quadrilateral that is made when you unfold (A).

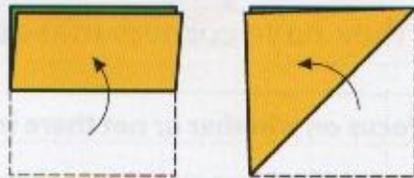


Let's make the characteristics of the shape clear.

1 Using a set square, investigate the shapes of all 4 corners.



2 Investigate the lengths of all 4 sides.

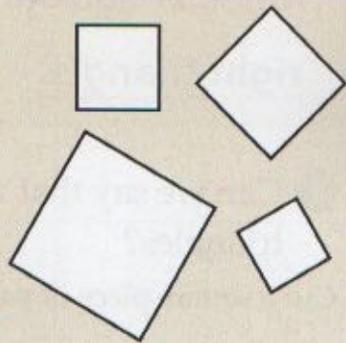


When you **focus on the corner shapes and side lengths** of the quadrilateral that is made when you unfold (A), you see that 4 corners are all right angles and all 4 sides are the same length.



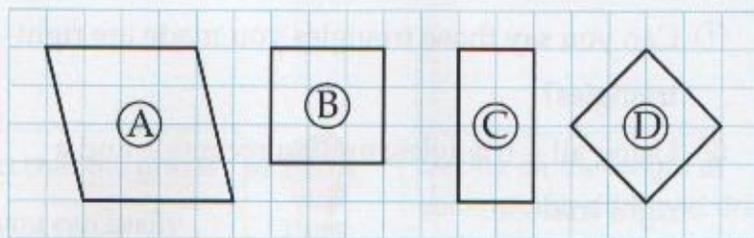
Shiho

A quadrilateral with 4 corners that are all right angles and with 4 sides that are all the same length is called a **square**.



4

Which of the following are squares?



Riku

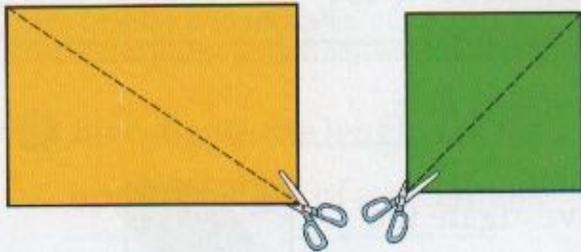


I wonder if a triangle with a right angle also has a special name.

4

Fold and cut a rectangular piece of paper and a square piece of paper as shown below.

What kind of shape can you make?



Kota

In both of them, you can make 2 s of the same shape.



Let's make the characteristics of the shape clear.

1 Do they have corners that are right angles?

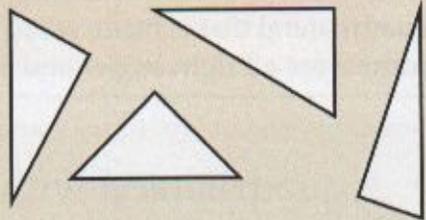


If you focus on whether or not there is a right angle corner, you see that both triangles have one corner that is a right angle.



Riku

A triangle that has a right angle is called a right triangle.

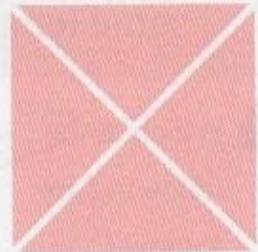


2 Can we say that the shapes of the set squares are right triangles?

5

Cut a square piece of paper as shown on the right to make triangles.

- ① Can you say those triangles you made are right triangles?
- ② Using all 4 triangles, make a rectangle and a right triangle.



Ami



I want to draw rectangles, squares, and right triangles myself.

5

Draw the following shapes on the grid below.

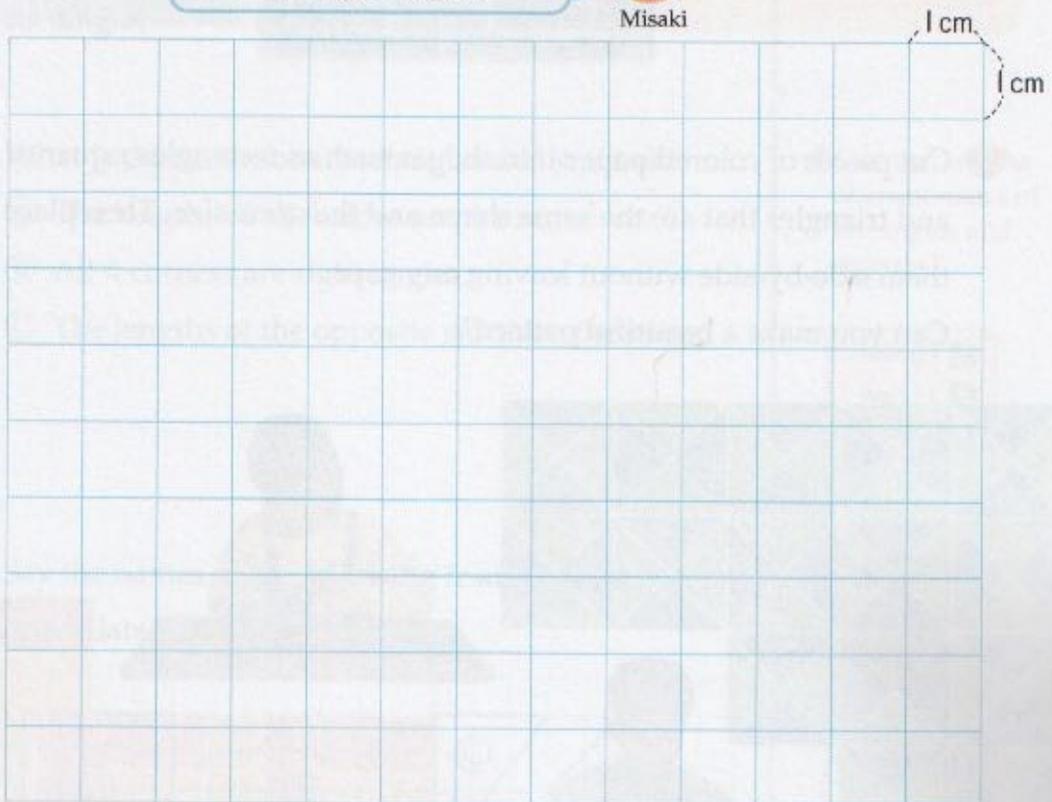
- ① A rectangle with a 3 cm vertical side and a 5 cm horizontal side.
- ② A square with sides of 4 cm.
- ③ A right triangle that has a right angle between 3 cm and 4 cm sides

On the grid below, let's draw a shape that has a right angle.

To draw a right angle...



Misaki



If you use the fact that the grid is **made of squares**, you can easily draw a shape that has a right angle.



Haruto

Decide on the length of some of the sides and draw rectangles, squares, and right triangles.





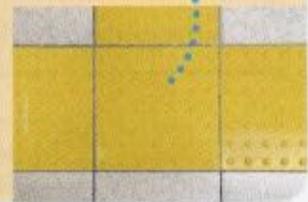
Use What You Have Learned

- You have many rectangles and squares around you. Find some.



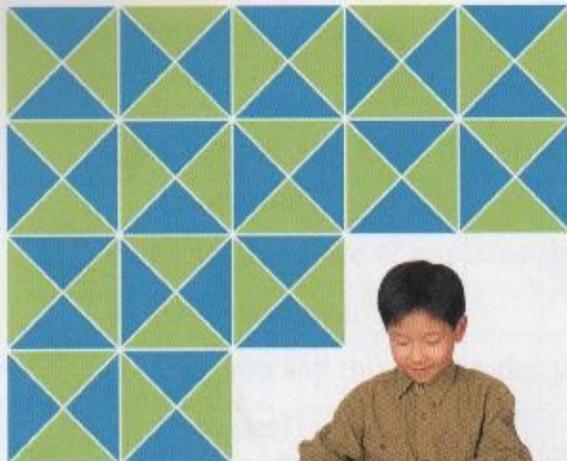
▲ Sagami-hara,
Kanagawa Pref.

Look at the
pictures on
page 108, too.



- Cut pieces of colored paper into shapes such as rectangles, squares, and triangles that are the same shape and the same size. Then place them side-by-side without leaving any gaps.

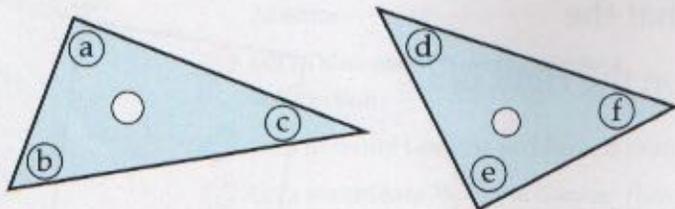
Can you make a beautiful pattern?





Check Your Understanding

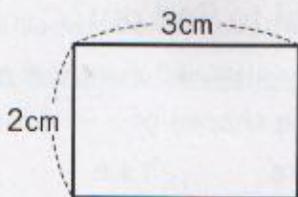
1 Which corners of these set squares are right angles?



◀ Can you identify right angles?

Page 108 1

2 The quadrilateral on the right is a rectangle. How many cm is the length around the rectangle?



◀ Can you tell the lengths of the sides of a rectangle?

Page 109 2

3 What is the same about rectangles and squares?

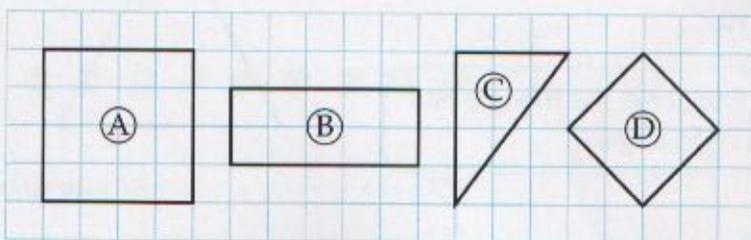
- (A) The lengths of all 4 sides are the same.
- (B) All 4 corners are right angles.
- (C) The lengths of the opposite sides are the same.

◀ Can you tell the characteristics of rectangles and squares?

Page 109 2

Page 111 3

4 Say the names of the following triangles and quadrilaterals.



◀ Can you tell what these triangles and quadrilaterals are called?

Page 109 2

Page 111 3

Page 112 4



Examine shapes by carefully looking at how their corners are shaped and how long their sides are

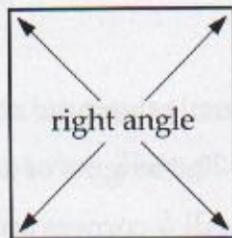
- ① Ami guesses that the quadrilateral on the right is a rectangle.
To see if her guess is correct, what do you need to find out?



Ami

Check the shapes of .
If all 4 are , it's a rectangle.

- ② To see if the quadrilateral on the right is a square, the shapes of the 4 corners were checked. They were all right angles.



What else do you need to find out?



Haruto

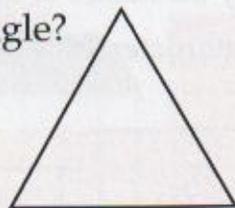
If the lengths of the 4 are the same, the quadrilateral is a square.

- ③ Is the triangle on the right a right triangle?
Explain why.



Misaki

I wonder if the triangle has a right angle....





Additional Problems

Need more practice?
Try these!

1	Let's Show Information Clearly	118
2	Let's Think about How to Calculate Addition	118
3	Let's Think about How to Calculate Subtraction	119
4	Let's Measure Lengths and Record Them	120
5	Let's Investigate Numbers Greater Than 100	121
6	Let's Measure Amounts of Water and Record Them	123
7	Let's Use Clocks in Our Everyday Life	123
9	Let's Think about How to Calculate Using the Algorithms	124
●	Answers	125



Let's Try WONDERful Problems!

These problems are for you to explore wider and dig deeper. Try them, think hard, and enjoy!

2	Let's Think about How to Calculate Addition	127
3	Let's Think about How to Calculate Subtraction	127
5	Let's Investigate Numbers Greater Than 100	128
7	Let's Use Clocks in Our Everyday Life	128
9	Let's Think about How to Calculate Using the Algorithms	129
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Review Exercises	131
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Notice to Teachers and Parents

"New Mathematics 2A Plus" is an optional resource for students who want or need to work on additional material. Not all students need to use "New Mathematics 2A Plus."

1 →

- C** Suppose you wish to buy two types snacks, one pack each, with 75 yen. Which two snacks can you buy with 75 yen?

There is more than one combination.

Cookies ····· 53 yen	Candy ····· 25 yen
Chocolate ··· 46 yen	Crackers ··· 38 yen

2 →

- D** ① $38 + 12$ ② $54 + 16$ ③ $19 + 61$ ④ $47 + 43$
 ⑤ $11 + 39$ ⑥ $33 + 17$ ⑦ $65 + 25$ ⑧ $26 + 14$

- D** Yuki, Miki, Takuya, and Chie counted the number of marbles they each had.

Yuki ····· 42 marbles	Miki ··· 38 marbles
Takuya ··· 57 marbles	Chie ··· 33 marbles

Which two children have 80 marbles altogether?

3 →

- E** ① $85 + 6$ ② $18 + 5$ ③ $7 + 15$ ④ $9 + 42$
 ⑤ $25 + 5$ ⑥ $43 + 7$ ⑦ $9 + 31$ ⑧ $2 + 78$

- E** Fill in the with numerals to make the calculations correct.

$$\begin{array}{r} \textcircled{1} \quad \square \\ + 34 \\ \hline 41 \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad 5 \square \\ + \quad 8 \\ \hline \square 4 \end{array}$$

3

Let's Think about How to Calculate Subtraction

Answers → Page 125~126

1 →

- F** ① $96 - 42$ ② $57 - 24$ ③ $82 - 31$ ④ $93 - 42$
 ⑤ $67 - 56$ ⑥ $66 - 45$ ⑦ $49 - 36$ ⑧ $78 - 16$

- F** Fill in the with numbers.

In the calculation on the right, "5" shows that there are 5 , and "6" shows that there are 6 .

$$\begin{array}{r} 87 \\ - 31 \\ \hline 56 \end{array}$$

2 →

- G** ① $82 - 62$ ② $95 - 35$ ③ $39 - 19$ ④ $58 - 30$
 ⑤ $98 - 40$ ⑥ $78 - 30$ ⑦ $58 - 51$ ⑧ $79 - 70$

- G** There are three cards: , , and . Place them in the to make the calculations correct.

$$\begin{array}{r} \textcircled{1} \quad \square \square \\ - \quad \square 0 \\ \hline 42 \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad \square 8 \\ - \quad \square \square \\ \hline 20 \end{array}$$

1 →

H

- ① $72 - 34$ ② $64 - 48$ ③ $94 - 25$ ④ $51 - 14$
 ⑤ $82 - 23$ ⑥ $62 - 29$ ⑦ $54 - 35$ ⑧ $32 - 16$

H The following calculations are all incorrect. Why? For each calculation, select the reason from (A), (B), and (C), and also write the correct answer.

$$\begin{array}{r} \textcircled{1} \quad 91 \\ - 49 \\ \hline 58 \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad 76 \\ - 48 \\ \hline 38 \end{array}$$

$$\begin{array}{r} \textcircled{3} \quad 62 \\ - 23 \\ \hline 45 \end{array}$$

- (A) The numbers in the ones place are added together.
 (B) In the ones place, the number at the top is subtracted from the number at the bottom.
 (C) 1 is not regrouped from the tens place.

2 →

I

- ① $70 - 23$ ② $90 - 59$ ③ $50 - 34$ ④ $40 - 26$
 ⑤ $67 - 59$ ⑥ $94 - 89$ ⑦ $33 - 28$ ⑧ $70 - 61$

I Suppose you go to buy a candy with a 50-yen coin.

Strawberry candy ... 19 yen Melon candy 24 yen
 Apple candy 21 yen Mandarin candy ... 20 yen

If you buy one piece of the most expensive candy, how much change will you get?

3 →

J

- ① $83 - 5$ ② $26 - 9$ ③ $34 - 5$ ④ $82 - 6$
 ⑤ $60 - 1$ ⑥ $80 - 3$ ⑦ $20 - 2$ ⑧ $70 - 5$

J Fill in the with numerals to make the calculations correct.

$$\begin{array}{r} \textcircled{1} \quad 4 \square \\ - \quad 7 \\ \hline 39 \end{array}$$

$$\begin{array}{r} \textcircled{2} \quad \square 0 \\ - \quad 8 \\ \hline 62 \end{array}$$

4

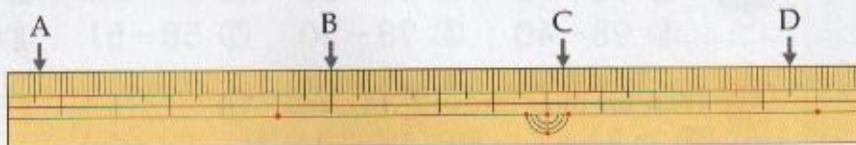
Let's Measure Lengths and Record Them

Answers → Page 126

5 →

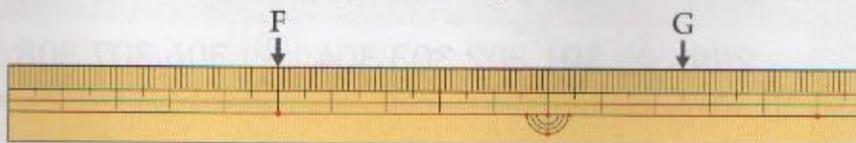
K

From the left edge of the ruler, what are the lengths to points A, B, C, and D?



5 →

K What is the length between point F and point G?



9 →

- L**
- ① $6 \text{ cm} = \square \text{ mm}$ ② $40 \text{ mm} = \square \text{ cm}$
 ③ $8 \text{ cm } 9 \text{ mm} = \square \text{ mm}$ ④ $64 \text{ mm} = \square \text{ cm } \square \text{ mm}$

L Arrange (A), (B), and (C) from the longest to the shortest.

- (A) $3 \text{ cm } 5 \text{ mm}$ (B) 3 cm (C) 29 mm

1 →

M Calculate the following.

- ① $5 \text{ cm } 7 \text{ mm} + 6 \text{ cm}$ ② $13 \text{ cm } 6 \text{ mm} - 2 \text{ cm}$
 ③ $8 \text{ cm } 6 \text{ mm} + 3 \text{ mm}$ ④ $7 \text{ cm } 8 \text{ mm} - 6 \text{ mm}$

M Calculate the following.

- ① $6 \text{ cm } 5 \text{ mm} + 3 \text{ cm } 2 \text{ mm}$ ② $8 \text{ cm } 7 \text{ mm} - 1 \text{ cm } 5 \text{ mm}$

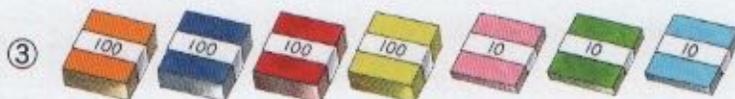
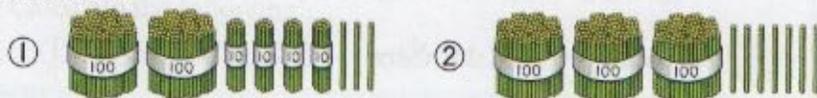
5

Let's Investigate Numbers Greater Than 100

Answers → Page | 26

1 →

N Write how many sticks and colored papers there are using numerals.

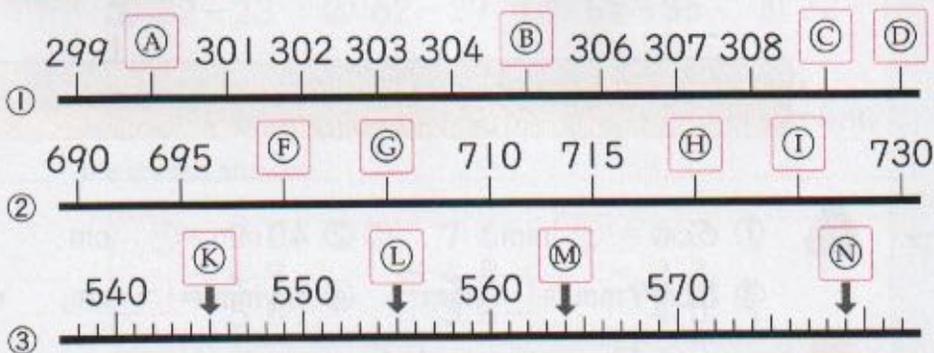


N Write how many sticks there are using numerals.

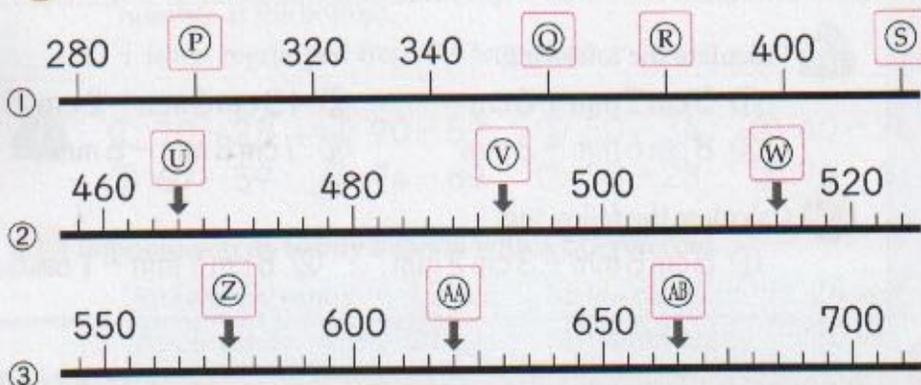


9 →

O Fill in the with numbers.



O Fill in the with numbers.



1 →

- P** ① $90 + 30$ ② $60 + 80$ ③ $90 + 90$
 ④ $150 - 70$ ⑤ $180 - 90$ ⑥ $110 - 30$

P Fill in the with numbers.

If you think about the calculation $160 - 90$ with bundles of 10, this math sentence can be written as

$$\square - \square = \square.$$

There are bundles of ten. So, the answer of $160 - 90$ is .

2 →

Q Fill in the below with the appropriate sign: $>$, $<$, or $=$.

- ① 150 $100 + 50$ ② 230 $300 - 100$
 ③ $80 + 90$ 186 ④ $770 - 70$ 719

Q What numbers can fit in the ? Select all such numbers from and write them.

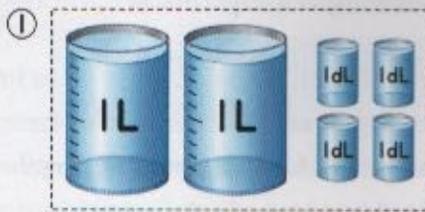
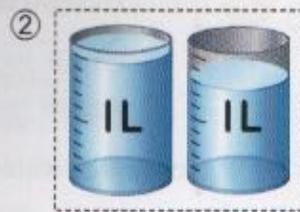
- ① $< 550 - 50$ ② $700 -$ < 400

100 200 300 400 500

Page 73

3 →

R Write down the amounts of water in two different ways, (A) and (B).

(A) L dL(B) dL(A) L dL(B) dL

R Arrange (A), (B), and (C) from the largest to the smallest in amounts of water.



Page 75

5 →

S Calculate the following.

① $3L + 1L5dL$

② $6L4dL - 3L$

③ $2L5dL + 4dL$

④ $8L9dL - 6dL$

S Calculate the following.

① $3L5dL + 1L3dL$

② $4L3dL - 1L2dL$

Page 81

1 →

T It is 5:20 now. Tell the time using the information below.

① 1 hour after

② 1 hour before

③ 20 minutes before

④ 30 minutes after



T It is 10:00 now.

Tell the time using the information below.

① 45 minutes before

② 30 minutes after

③ 32 minutes before

④ 47 minutes after



Page 92

2 →

- U** ① $75 + 71$ ② $94 + 64$ ③ $70 + 54$ ④ $28 + 81$

U Hayato bought the following at a supermarket.

Carrot ... 62 yen	Tofu 53 yen
Radish ... 86 yen	Bread ... 100 yen

How much were the vegetables he bought altogether?

Page 93

3 →

- V** ① $94 + 69$ ② $47 + 84$ ③ $23 + 98$ ④ $43 + 99$
 ⑤ $76 + 54$ ⑥ $25 + 95$ ⑦ $57 + 93$ ⑧ $88 + 32$

V There are 10 cards: $\boxed{0}$, $\boxed{1}$, $\boxed{2}$, $\boxed{3}$, $\boxed{4}$, $\boxed{5}$, $\boxed{6}$, $\boxed{7}$, $\boxed{8}$, and $\boxed{9}$.

Out of these cards, select 7 cards and place them in the boxes on the right to make a correct calculation with the largest possible answer.

+		

Page 93

4 →

- W** ① $87 + 15$ ② $59 + 48$ ③ $16 + 84$ ④ $33 + 67$
 ⑤ $97 + 6$ ⑥ $9 + 92$ ⑦ $96 + 4$ ⑧ $5 + 95$

W Fill in the \square with numerals to make the calculations correct.

①	$7 \square$	②	$8 \square$	③	36	④	7
	$+ 26$		$+ \square 9$		$+ \square 8$		$+ \square 5$
	<hr style="width: 50%; margin: 0 auto;"/>						
	104		$\square 08$		$\square 0 \square$		102

Page 96

2 →

- X** ① $128 - 33$ ② $168 - 92$ ③ $113 - 71$
 ④ $134 - 70$ ⑤ $122 - 52$ ⑥ $157 - 73$
 ⑦ $168 - 85$ ⑧ $106 - 53$ ⑨ $104 - 82$
 ⑩ $107 - 37$

X In the park, red flowers and yellow flowers were in bloom. The total number of the red and yellow flowers was 115, and the number of the red flowers was 53. Which were there more of, red flowers or yellow flowers? How many more?

- G ① 20 ② 60 ③ 20 ④ 28
⑤ 58 ⑥ 48 ⑦ 7 ⑧ 9

G ① $\begin{array}{r} 82 \\ -40 \\ \hline 42 \end{array}$ ② $\begin{array}{r} 48 \\ -28 \\ \hline 20 \end{array}$

- H ① 38 ② 16 ③ 69 ④ 37
⑤ 59 ⑥ 33 ⑦ 19 ⑧ 16

- H ① B Correct answer ... 42
② C Correct answer ... 28
③ A Correct answer ... 39

- I ① 47 ② 31 ③ 16 ④ 14
⑤ 8 ⑥ 5 ⑦ 5 ⑧ 9

I 26 yen

- J ① 78 ② 17 ③ 29 ④ 76
⑤ 59 ⑥ 77 ⑦ 18 ⑧ 65

J ① 6 ② 7

4 Let's Measure Lengths and Record Them

- K A 6 mm B 6 cm
C 10 cm 3 mm D 14 cm 5 mm

K 7 cm 5 mm

- L ① 60 ② 4 ③ 89 ④ 6, 4 (in this order)

L A, B, C

- M ① 11 cm 7 mm ② 11 cm 6 mm
③ 8 cm 9 mm ④ 7 cm 2 mm

M ① 9 cm 7 mm ② 7 cm 2 mm

5 Let's Investigate Numbers Greater Than 100

- N ① 243 ② 307 ③ 430

N ① 316 ② 237

- O ① A 300 B 305 C 309 D 310
② F 700 G 705 H 720 I 725
③ K 545 L 555 M 564 N 579

- O ① P 300 Q 360 R 380 S 420
② U 466 V 492 W 514
③ Z 575 M 620 B 665

P ① 120 ② 140 ③ 180 ④ 80 ⑤ 90 ⑥ 80

P 16, 9, 7, 7, 70 (from left to right, top to bottom)

Q ① = ② > ③ < ④ <

Q ① 100, 200, 300, 400 ② 400, 500

6 Let's Measure Amounts of Water and Record Them

- R ① a 2 L 4 dL ② 24 dL
③ a 1 L 8 dL ④ 18 dL

R b, a, c

- S ① 4L5dL ② 3L4dL
③ 2L9dL ④ 8L3dL

S ① 4L8dL ② 3L1dL

7 Let's Use Clocks in Our Everyday Life

T ① 6:20 ② 4:20

③ 5:00 ④ 5:50

T ① 9:15 ② 10:30

③ 9:28 ④ 10:47

Think This Way

- ③ If you move the long hand back 30 minutes, the clock will read 9:30. Move the long hand back another 2 minutes.
④ If you move the long hand forward 40 minutes, the clock will read 10:40. Move the long hand forward by another 7 minutes.

9 Let's Think about How to Calculate Using the Algorithms

U ① 146 ② 158 ③ 124 ④ 109

U 148 yen

V ① 163 ② 131 ③ 121 ④ 142
⑤ 130 ⑥ 120 ⑦ 150 ⑧ 120

V $\begin{array}{r} 94 \\ +82 \\ \hline 176 \end{array}$ $\begin{array}{r} 92 \\ +84 \\ \hline 176 \end{array}$ $\begin{array}{r} 82 \\ +94 \\ \hline 176 \end{array}$ $\begin{array}{r} 84 \\ +92 \\ \hline 176 \end{array}$

W ① 102 ② 107 ③ 100 ④ 100
⑤ 103 ⑥ 101 ⑦ 100 ⑧ 100

W $\begin{array}{r} 78 \\ +26 \\ \hline 104 \end{array}$ $\begin{array}{r} 89 \\ +19 \\ \hline 108 \end{array}$ $\begin{array}{r} 36 \\ +68 \\ \hline 104 \end{array}$ $\begin{array}{r} 7 \\ +95 \\ \hline 102 \end{array}$

X ① 95 ② 76 ③ 42 ④ 64 ⑤ 70
⑥ 84 ⑦ 83 ⑧ 53 ⑨ 22 ⑩ 70

X There were 9 more yellow flowers in bloom.

Y ① 67 ② 38 ③ 87 ④ 79 ⑤ 89
⑥ 59 ⑦ 48 ⑧ 93 ⑨ 91

Y $\begin{array}{r} 125 \\ -36 \\ \hline 89 \end{array}$ $\begin{array}{r} 135 \\ -46 \\ \hline 89 \end{array}$

Z ① 65 ② 59 ③ 29 ④ 44 ⑤ 97
⑥ 93 ⑦ 97 ⑧ 95 ⑨ 98

Z ① $\begin{array}{r} 100 \\ -94 \\ \hline 6 \end{array}$ ② $\begin{array}{r} 102 \\ -14 \\ \hline 88 \end{array}$

2

Let's Think about How to Calculate Addition

Answers → Page 129

1 There are 9 cards: 1, 2, 3, 4, 5, 6, 7, 8, and 9.



$$\begin{array}{r} 13 \\ + 84 \\ \hline 97 \end{array}$$

Out of these cards, select 6 cards to make addition calculations like the one on the right.

Place the appropriate cards in the addition calculations will be correct.

Algoritmo

①

$$\begin{array}{r} \square 3 \\ + \square \square \\ \hline 98 \end{array}$$

②

$$\begin{array}{r} 2 \square \\ + \square \square \\ \hline \square 1 \end{array}$$

There is more than one combination.



3

Let's Think about How to Calculate Subtraction

Answers → Page 129

1 There are 9 cards: 1, 2, 3, 4, 5, 6, 7, 8, and 9. Out of these cards, select 6 cards to make subtraction calculations like the one on the right.

Place the appropriate cards in the so that the subtraction calculations will be correct.

$$\begin{array}{r} 97 \\ - 84 \\ \hline 13 \end{array}$$

①

$$\begin{array}{r} \square 7 \\ - \square \square \\ \hline 32 \end{array}$$

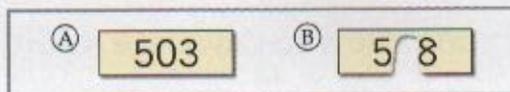
②

$$\begin{array}{r} \square \square \\ - 4 \square \\ \hline \square 9 \end{array}$$

I wonder how many combinations there are.



- 1 Which 3-digit number is larger, the one on card (A) or the one on card (B)?



Ami

I can't compare the numbers, because part of one card is cut out and a numeral is missing.



Haruto

I can tell without the missing numeral. The number on card (B) is larger.

Is what Haruto is saying correct? Fill in the with words and think.

The numerals in the hundreds place for both cards are the .

In the ones place, the numeral on card (B) is than that on card (A).

If the numeral in the tens place on card (B) is the smallest one, or 0, the number on card (B) is 508.

If so, the numeral on card (B) is than that on card (A).

So, whatever numeral is in the tens place on card (B), the number on card (B) is than that on card (A).

- 1 "Elapsed time" is different from "time," but you may sometimes use the word "time" to mean "elapsed time."

Read the sentences below and underline when the word "time" is being used to indicate "elapsed time."

The time when I woke up this morning was 7:00. The time it took me to prepare for leaving home was 1 hour and 30 minutes.

The time when I left home was 8:30. I went to my aunt's house by bus and train.

The time it took me to get to her house was 2 hours and 15 minutes. The time when I arrived at her house was 10:45.

- 1 Add three numbers using the algorithm.

[Example]

$$53 + 25 + 14$$

5	3
2	5
+	14
	2

 \rightarrow

5	3
2	5
+	14
9	2

$3 + 5 + 4 = 12$ Regroup 1 to make 6
6
 $6 + 2 + 1 = 9$

① $24 + 12 + 43$

② $42 + 13 + 28$

③ $46 + 7 + 64$



Riku

When you just add, this way of calculation is easy.

2 Let's Think about How to Calculate Addition

1 ①
$$\begin{array}{r} 23 \\ + 75 \\ \hline 98 \end{array} \quad \begin{array}{r} 73 \\ + 25 \\ \hline 98 \end{array}$$

②
$$\begin{array}{r} 28 \\ + 63 \\ \hline 91 \end{array} \quad \begin{array}{r} 23 \\ + 68 \\ \hline 91 \end{array} \quad \begin{array}{r} 28 \\ + 43 \\ \hline 71 \end{array}$$

$$\begin{array}{r} 23 \\ + 48 \\ \hline 71 \end{array} \quad \begin{array}{r} 27 \\ + 64 \\ \hline 91 \end{array} \quad \begin{array}{r} 24 \\ + 67 \\ \hline 91 \end{array}$$

$$\begin{array}{r} 27 \\ + 54 \\ \hline 81 \end{array} \quad \begin{array}{r} 24 \\ + 57 \\ \hline 81 \end{array} \quad \begin{array}{r} 27 \\ + 34 \\ \hline 61 \end{array}$$

$$\begin{array}{r} 24 \\ + 37 \\ \hline 61 \end{array} \quad \begin{array}{r} 26 \\ + 45 \\ \hline 71 \end{array} \quad \begin{array}{r} 25 \\ + 46 \\ \hline 71 \end{array}$$

3 Let's Think about How to Calculate Subtraction

1 ①
$$\begin{array}{r} 47 \\ - 15 \\ \hline 32 \end{array} \quad \begin{array}{r} 97 \\ - 65 \\ \hline 32 \end{array}$$

②
$$\begin{array}{r} 81 \\ - 42 \\ \hline 39 \end{array} \quad \begin{array}{r} 62 \\ - 43 \\ \hline 19 \end{array} \quad \begin{array}{r} 85 \\ - 46 \\ \hline 39 \end{array}$$

$$\begin{array}{r} 75 \\ - 46 \\ \hline 29 \end{array} \quad \begin{array}{r} 86 \\ - 47 \\ \hline 39 \end{array} \quad \begin{array}{r} 67 \\ - 48 \\ \hline 19 \end{array}$$

5 Let's Investigate Numbers Greater Than 100

- 1 same, greater, greater, greater (in this order)

7 Let's Use Clocks in Our Everyday Life

1 The **time** when I woke up this morning was 7:00. The **time** it took me to prepare for leaving home was 1 hour and 30 minutes.

The **time** when I left home was 8:30. I went to my aunt's house by bus and train.

The **time** it took me to get to her house was 2 hours and 15 minutes. The **time** when I arrived at her house was 10:45.

Think This Way What the clock points at, like $\times:\times:\times$, is "time."

The period between two points in time is "elapsed time."

9 Let's Think about How to Calculate Using the Algorithms

<p>1 ① $\begin{array}{r} 24 \\ 12 \\ +43 \\ \hline 79 \end{array}$</p>	<p>② $\begin{array}{r} 42 \\ 13 \\ +28 \\ \hline 83 \end{array}$</p>	<p>③ $\begin{array}{r} 46 \\ 7 \\ +64 \\ \hline 117 \end{array}$</p>
--	---	---



Answers Do You Remember?

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- 1** ① 80 ② 43 ③ 73 ④ 63
 ⑤ 42 ⑥ 23 ⑦ 26 ⑧ 20
- 2** ① 3:45 ② 5:36
 ③ 11:24 ④ 2:58
- 3** B, C, A

Playing with Numbers and Calculations

- ①

1	3
4	2

3	1
2	4
- ②

1	2
4	3

2	1
3	4
- ③

1	3
2	4

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- 1** ① 140 ② 9 ③ 10, 5 (in this order)
- 2** ① 98 yen
 ② Mika has 6 yen more.
- 3** ① 7:50 ② 4:25
 ③ 1:13 ④ 10:56

Playing with Numbers and Calculations

- A 0 B 4 C 3 D 6 E 7
 F 9 G 8 H 8 I 8

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- 1** The smallest interval of the tick marks is 10.
 A 50 B 240 C 470 D 790
- 2** B, C, A, D
- 3** ① 73 ② 88 ③ 46
 ④ 93 ⑤ 340 ⑥ 34
 ⑦ 32 ⑧ 23 ⑨ 53
- 4** ① 15 ② 16 ③ 19 ④ 17

Playing with Numbers and Calculations

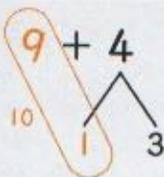
- A 7 B 2 C 3
 D 5 E 6 F 0 G 4

Review Exercises

1 Addition and Subtraction (1st Grade)

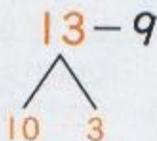
◆ $9 + 4$

- ① 9 is 1 less than 10.
- ② Split 4 into 1 and 3.
- ③ Add the 1 to the 9 to make 10.
- ④ 10 and 3 makes 13.
 $9 + 4 = 13$

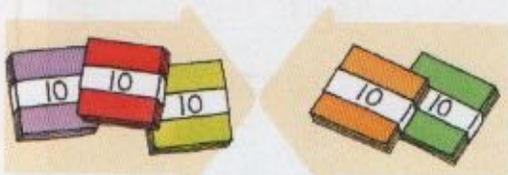


◆ $13 - 9$

- ① Split 13 into 10 and 3.
- ② From the 10, subtract 9 to make 1.
- ③ The 1 and the 3 makes 4.
 $13 - 9 = 4$



◆ $30 + 20$



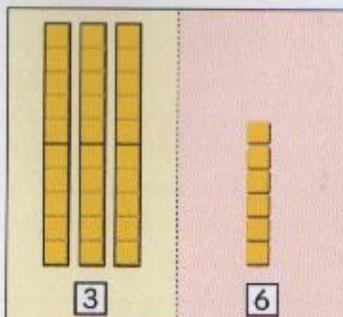
3 bundles of ten

2 bundles of ten

- There are $3 + 2 = 5$ bundles of ten.
- 5 bundles of 10 is 50.
 $30 + 20 = 50$

2 The Structure of Numbers and How to Read Them (1st grade)

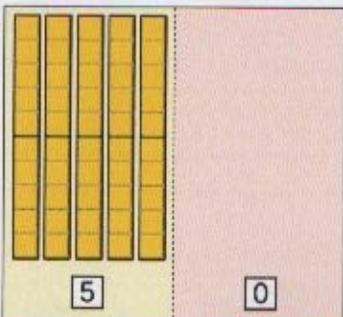
◆ 36



3 tens is 30.
30 and 6
makes
thirty-six.

Tens place	Ones place
3	6
3 6	

◆ 50



5 tens is
fifty.

Tens place	Ones place
5	0
5 0	

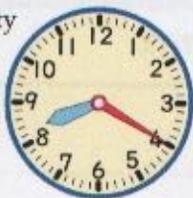
3 How to Tell Time (1st Grade)

① The short hand tells the hour.

② The long hand tells the minutes.

Eight twenty

8:20



8 o'clock



20 minutes

Eight fifty-three

8:53



8 o'clock



53 minutes



Time between 8 o'clock and 9 o'clock is Eight × ×.

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「New Mathematics」 Editorial Board Tokyo Shoseki Co., Ltd.

Cover design / Sayoko Kumada (Photographs) STUDIO MORITAKE

Interior design / ABLE DESIGN (Yutaka Wada · Yuri Sato)

Illustrations and Photos / Yaeko Ikeda, Yoshihiko Ishimori, illust-factory, Toshio Ohata, Takanobu Okabe, Tooru Okigaki, Ikuyo Kawano, KUMA ART, Nobuyoshi Kurosawa, Sakai Nobie, Kosei Tamura, Maki Doi, Mamiko Hasebe, Arinobu Fukushima, Kakuho Fujii, Hanna Miyashita, Mitsue Yamashita, amanaimages

Translations / **Akihiko Takahashi** DePaul University (Senior Project Director)

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New Mathematics 2A for Elementary School

the date of issue 9/1/2020 (Digital Version) 10/1/2020 (Print-on-Demand Version)

Editor **Toshiakira Fujii, Hideyuki Majima** and 「New Mathematics」 Editorial Board

Publisher **Tokyo Shoseki Co., Ltd.** 2-17-1 HORIFUNE, KITA-KU, TOKYO, JAPAN

Phone Global Marketing Department +81(3)53907551

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- 表紙：くまださよこ／(撮影)STUDIO MORITAKE
- 表紙・本文デザイン：エイブルデザイン(和田裕・佐藤由梨)
- さし絵・図版・写真：池田八恵子／石森愛彦／イラスト工房／大畑俊男／岡部タカノブ／沖垣亨／川野郁代／熊アート／黒沢信義／サカイノビー／田村公生／どいまき／長谷部真美子／福島有伸／フジイカクホ／みやしたはんな／山下光恵／アマナイメージズ
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新しい算数 2 考えるっておもしろい!

令和2年2月10日発行

著作者 **藤井齊亮・真島秀行** ほか84名

発行者 **東京書籍株式会社** 代表者 千石雅仁 東京都北区堀船2丁目17番1号

発行所 **東京書籍株式会社** 東京都北区堀船2丁目17番1号 〒114-8524

電話 本社 広報 03-5390-7212 編集 03-5390-7386 供給・販売 03-5390-7247

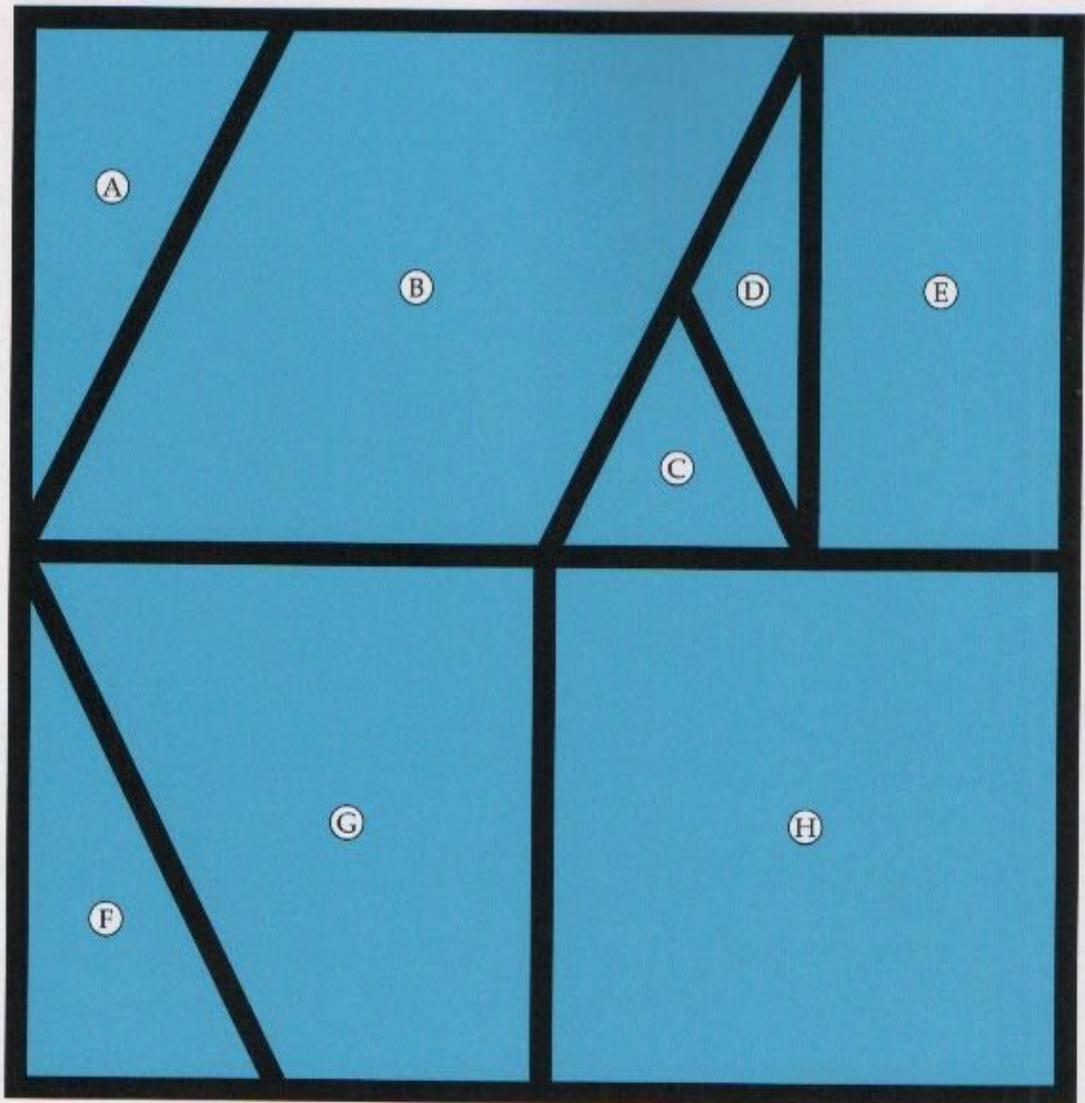
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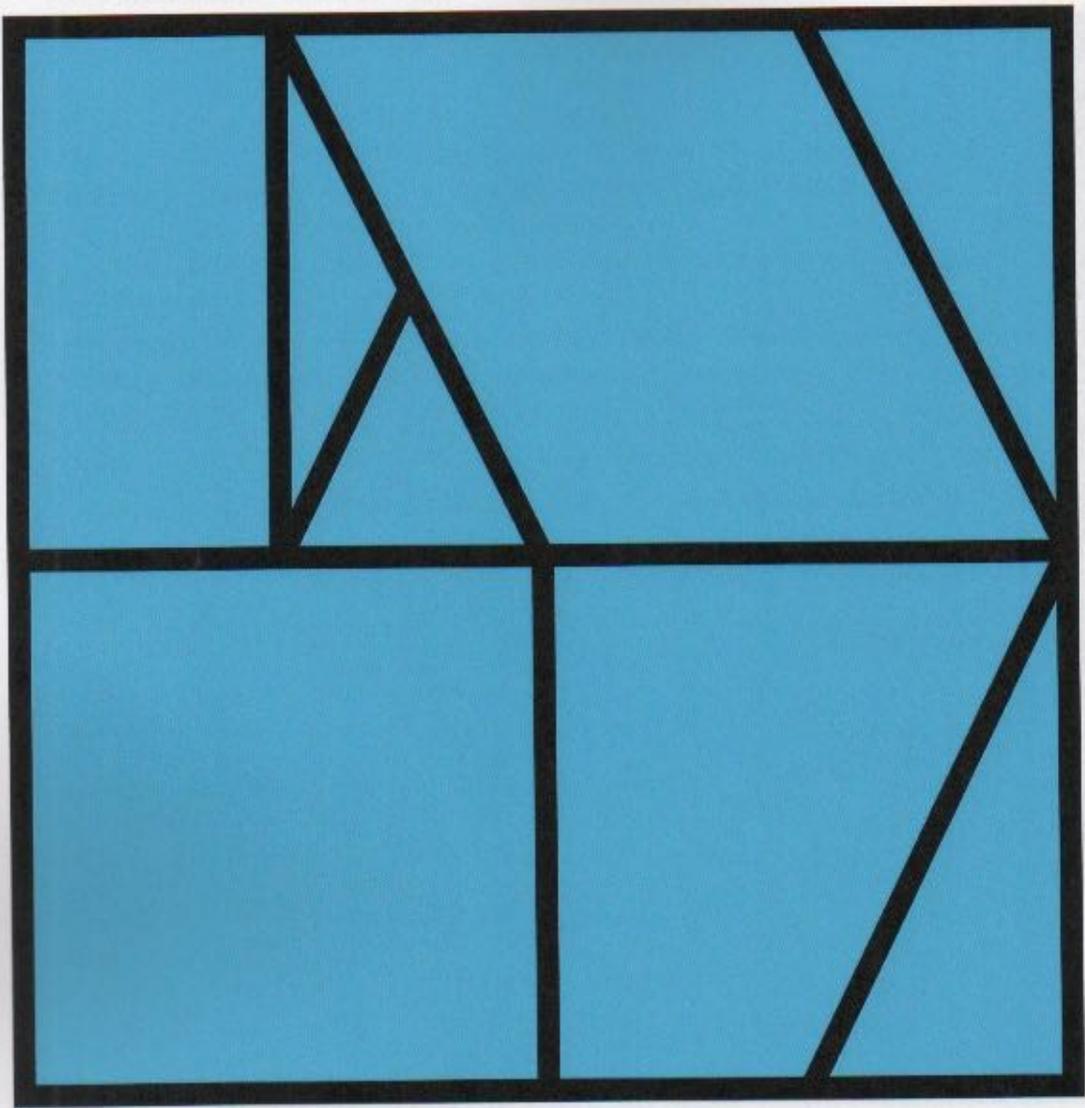
支社・出張所 札幌 011-562-5721 仙台 022-297-2666 東京 03-5390-7467 金沢 076-222-7581 名古屋 052-939-2722 大阪 06-6397-1350 広島 082-566-2577 福岡 092-771-1536 鹿児島 099-213-1770 那覇 098-834-8084

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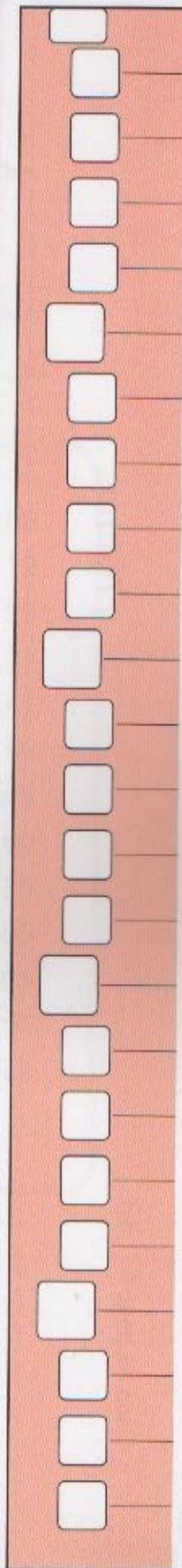
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10 10 10 10 10
10 10 10 10 10
10 10 10 10 10
10 10 10 10 10

100 100 100 100 100
100 100 100 100 100
100 100 100 100 100
100 100 100 100 100

1000 1000 1000 1000 1000
1000 1000 1000 1000 1000

0	1	2	3	4
5	6	7	8	9



Name

1	1	1	1	1
1	1	1	1	1
1	1	1	1	1
1	1	1	1	1

10	10	10	10	10
10	10	10	10	10
10	10	10	10	10
10	10	10	10	10

100	100	100	100	100
100	100	100	100	100
100	100	100	100	100
100	100	100	100	100

1000	1000	1000	1000	1000
1000	1000	1000	1000	1000

4	3	2	1	0
9	8	7	6	5

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Index

This index lists the terms and symbols you study in this textbook. Use the index to review or when you need to make sure.



If you use these terms and symbols correctly, you will find it easier to think and explain your ideas to others.

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Made in the USA
Coppell, TX
24 March 2023



14698906R00086

9784487814732



TOKYO SHOSEKI

