



CAMBRIDGE  
UNIVERSITY PRESS

# CAMBRIDGE **Primary Mathematics**

Workbook 5

Mary Wood & Emma Low

# Contents

How to use this book	5
Thinking and Working Mathematically	6
<b>1 The number system</b>	<b>8</b>
1.1 Understanding place value	8
1.2 Rounding decimal numbers	13
<b>2 2D shape and pattern</b>	<b>17</b>
2.1 Triangles	17
2.2 Symmetry	24
<b>3 Numbers and sequences</b>	<b>31</b>
3.1 Counting and sequences	31
3.2 Square and triangular numbers	36
3.3 Prime and composite numbers	40
<b>4 Averages</b>	<b>44</b>
4.1 Mode and median	44
<b>5 Addition and subtraction</b>	<b>49</b>
5.1 Addition and subtraction including decimal numbers	49
5.2 Addition and subtraction of positive and negative numbers	54
<b>6 3D shapes</b>	<b>59</b>
6.1 Nets of cubes and drawing 3D shapes	59
<b>7 Fractions, decimals and percentages</b>	<b>66</b>
7.1 Understanding fractions	66
7.2 Percentages, decimals and fractions	70
7.3 Equivalence and comparison	76
<b>8 Probability</b>	<b>81</b>
8.1 Likelihood	81
8.2 Experiments and simulations	86

9	Addition and subtraction of fractions	93
9.1	Addition and subtraction of fractions	93
10	Angles	98
10.1	Angles	98
11	Multiplication and division	103
11.1	Multiplication	103
11.2	Division	108
11.3	Tests of divisibility	111
12	Data	114
12.1	Representing and interpreting data	114
12.2	Frequency diagrams and line graphs	126
13	Ratio and proportion	136
13.1	Ratio and proportion	136
14	Area and perimeter	144
14.1	Area and perimeter	144
15	Multiplying and dividing fractions and decimals	151
15.1	Multiplying and dividing fractions	151
15.2	Multiplying a decimal and a whole number	156
16	Time	160
16.1	Time intervals and time zones	160
17	Number and the laws of arithmetic	168
17.1	The laws of arithmetic	168
18	Position and direction	174
18.1	Coordinates and translation	174
	Acknowledgements	181


# How to use this book

This workbook provides questions for you to practise what you have learned in class. There is a unit to match each unit in your Learner's Book. Each exercise is divided into three parts:


- **Focus:** these questions help you to master the basics
- **Practice:** these questions help you to become more confident in using what you have learned
- **Challenge:** these questions will make you think very hard.

You might not need to work on all three parts of each exercise. Your teacher will tell you which parts to do.

You will also find these features:

Important words that you will use. 

decimal	hundredth
decimal place	place value
decimal point	tenth

Step-by-step examples showing a way to solve a problem. 



There are often many different ways to solve a problem.

## Worked example 1


Mai, Yared and Susan live in different time zones.  
 The time on Yared's clock is 2 hours ahead of the time on Mai's clock.  
 The time on Susan's clock is 3 hours behind the time on Mai's clock.  
 The time in Mai's time zone is 15:07. What is the time for Yared and Susan?

---

Yared's time is 2 hours ahead of Mai's.      Add 2 hours to 15:07.  
 The time for Yared is 17:07.

---

Susan's time is 3 hours behind Mai's.      Subtract 3 hours from 15:07.  
 The time for Susan is 12:07.

These questions will help you develop your skills of thinking and working mathematically. 

11 Draw a ring around the odd one out.

368.4 tenths      368.4      3684 hundredths  
 36.84      368 tenths and 4 hundredths

Explain your answer.



# Thinking and Working Mathematically

There are some important skills that you will develop as you learn mathematics.



**Specialising**  
is when I choose an example and check to see if it satisfies or does not satisfy specific mathematical criteria.

**Characterising**  
is when I identify and describe the mathematical properties of an object.

**Generalising**  
is when I recognise an underlying pattern by identifying many examples that satisfy the same mathematical criteria.

**Classifying**  
is when I organise objects into groups according to their mathematical properties.



**Critiquing** is  
when I compare and evaluate mathematical ideas, representations or solutions to identify advantages and disadvantages.

**Improving**  
is when I refine mathematical ideas or representations to develop a more effective approach or solution.

**Conjecturing**  
is when I form mathematical questions or ideas.

**Convincing**  
is when I present evidence to justify or challenge a mathematical idea or solution.



# 1 The number system

## > 1.1 Understanding place value

### Worked example 1

Find the missing numbers.

a  $0.9 \times \square = 9$

b  $350 \div \square = 3.5$

compose	decimal point
decimal	hundredth
decimal place	place value
decompose	tenth

a

100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s
		0	9	
		9		

$0.9 \times 10 = 9$

Use a place value grid to help you.

To move digits one column to the left you multiply by 10.

b

100s	10s	1s	$\frac{1}{10}$ s	$\frac{1}{100}$ s
3	5	0		
		3	5	0

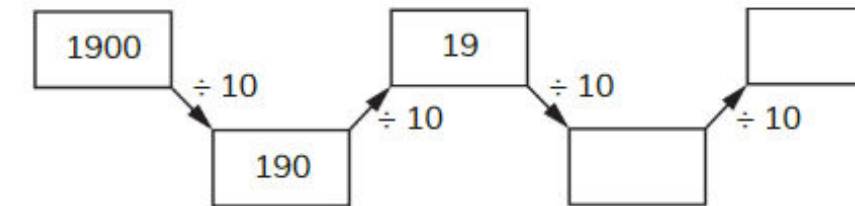
$350 \div 100 = 3.5$

To move digits two columns to the right you divide by 100.

### Exercise 1.1

#### Focus

- 1 Write the missing numbers in this sequence.



#### Tip

You may find a place value grid helpful for these questions.

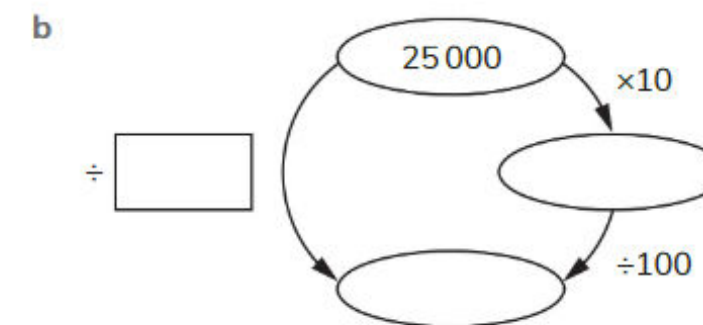
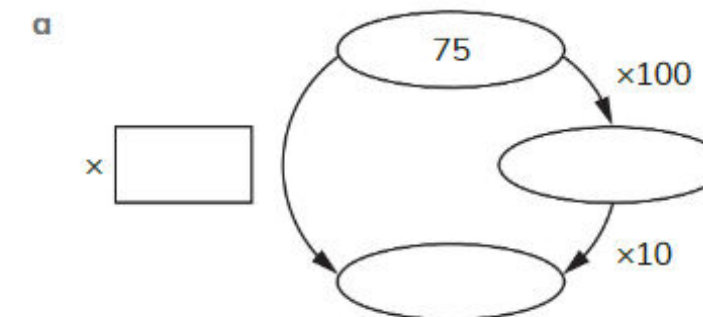
- 2 Write these numbers in digits.

a fifteen point three seven \_\_\_\_\_

b one hundred and five point zero five \_\_\_\_\_

c thirty four point three four \_\_\_\_\_

- 3 Write the missing numbers.





- 4 Complete the table to show what the digits in the number 47.56 stand for.

4	tens
5	
6	
7	

- 5 Write the missing number.

$$6.58 = 6 + \boxed{\phantom{00}} + 0.08$$

### Practice

- 6 Draw a ring around the number equivalent to five hundredths.

500      5.00      0.50      0.05

- 7 Divide 3.6 by 10.

\_\_\_\_\_

- 8 Write the missing numbers.

$$38.14 = 30 + 8 + \boxed{\phantom{00}} + \boxed{\phantom{00}}$$

- 9 Regroup 30.54 in two different ways.

1 \_\_\_\_\_

2 \_\_\_\_\_

- 10 Here are four number cards.

Draw a ring round the card that shows the number that is 100 times bigger than 33.3.

33.300	3330	333.00	33300
--------	------	--------	-------

- 11 Find the missing numbers.

$$\begin{array}{lll} \text{a } 7.2 \times 100 = \boxed{\phantom{00}} & \text{b } 0.75 \times 100 = \boxed{\phantom{00}} & \text{c } 4.28 \times 10 = \boxed{\phantom{00}} \\ \text{d } 270 \div 100 = \boxed{\phantom{00}} & \text{e } 151 \div 100 = \boxed{\phantom{00}} & \text{f } 6.6 \div 10 = \boxed{\phantom{00}} \end{array}$$

- 12 Draw a ring around the odd one out.

368.4 tenths      368.4      3684 hundredths

36.84      368 tenths and 4 hundredths

Explain your answer.

\_\_\_\_\_

### Challenge

- 13 Write down the value of the digit 3 in each of these numbers.

a 72.3 \_\_\_\_\_

b eighty-four point zero three \_\_\_\_\_

- 14 Arun has these cards.

2	3	5	.
---	---	---	---

Write all the numbers he can make between 0 and 40 using all four cards.

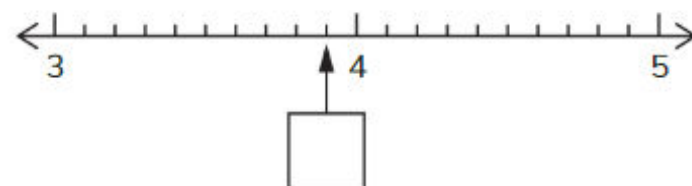
\_\_\_\_\_

\_\_\_\_\_

- 15 Write the missing numbers.

$$\begin{array}{ll} \text{a } \boxed{\phantom{00}} \times 0.6 = 6 & \text{b } 103 \div \boxed{\phantom{00}} = 1.03 \\ \text{c } \boxed{\phantom{00}} \times 0.13 = 13 & \text{d } 76 \div \boxed{\phantom{00}} = 7.6 \\ \text{e } \boxed{\phantom{00}} \times 4.1 = 410 & \text{f } 0.09 \times \boxed{\phantom{00}} = 9 \end{array}$$

- 16 Look at this number line.  
Write the number that goes in the box.



- 17 Heidi makes cakes for a snack bar.
- It costs \$1.50 to make one chocolate cake.  
How much does it cost to make 100 chocolate cakes?  
\_\_\_\_\_
  - It costs \$19.00 to make 100 small cakes.  
How much does it cost to make 10 small cakes?  
\_\_\_\_\_
  - It costs \$0.75 to make a sponge cake.  
How much does it cost to make 100 sponge cakes?  
\_\_\_\_\_

- 18 Arun and Marcus each write a decimal number between zero and one.

Arun says, 'My number has 9 hundredths and Marcus's number has only 7 hundredths so my number must be bigger.'

Arun is not correct. Explain why.

---



---



---



---

## > 1.2 Rounding decimal numbers

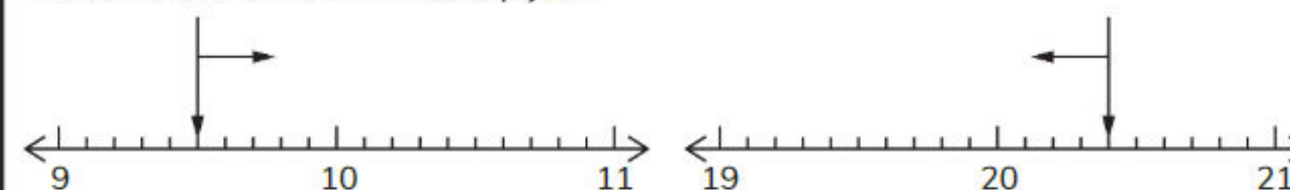
### Worked example 2

A number with 1 decimal place is rounded to the nearest whole number.

- What is the smallest number that rounds to 10?
- What is the largest number that rounds to 20?

nearest  
round  
round to the nearest

You can use a number line to help you.



a 9.5

If the tenths digit is 5, 6, 7, 8 or 9 the number rounds up to the nearest whole number.

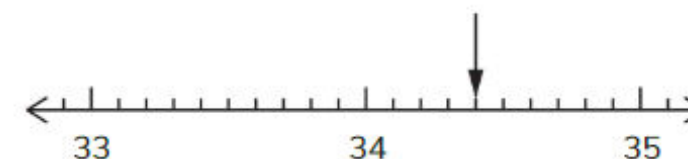
b 20.4

If the tenths digit is 0, 1, 2, 3 or 4 the number rounds down to the nearest whole number.

### Exercise 1.2

#### Focus

- 1 Here is part of a number line. The arrow shows the position of a number.



Complete the sentence for this number.

\_\_\_\_\_ rounded to the nearest whole number is \_\_\_\_\_.



- 2 Zara has four number cards.

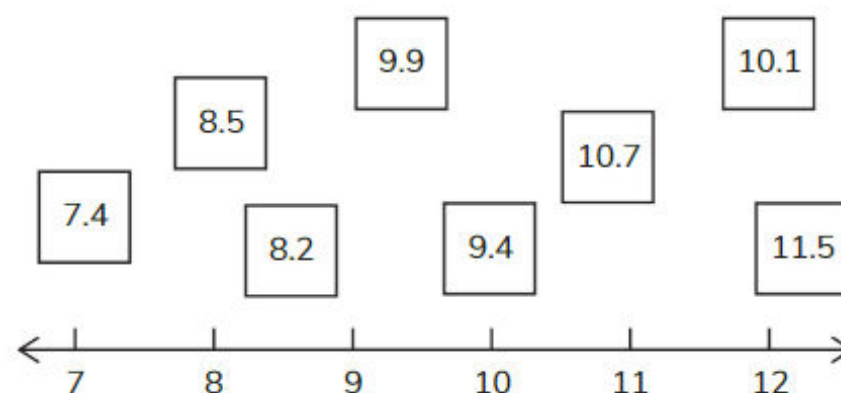
36.5	35.4	36.4	35.1
------	------	------	------

She rounds each number to the nearest whole number.

Which of her numbers rounds to 36?

\_\_\_\_\_

- 3 Draw a line to match each number to the nearest whole number on the number line.



- 4 Write a number with 1 decimal place to complete each number sentence.

\_\_\_\_\_ rounds to 1

\_\_\_\_\_ rounds to 10

### Practice

- 5 Round these lengths to the nearest whole centimetre.

a 4.1 cm \_\_\_\_\_ cm

b 6.6 cm \_\_\_\_\_ cm

c 10.1 cm \_\_\_\_\_ cm

d 8.5 cm \_\_\_\_\_ cm

- 6 Here are three number cards.

9	1	5
---	---	---

Use each card once to make a number that rounds to 20 to the nearest whole number.

		.	
--	--	---	--

- 7 A number with 1 decimal place is rounded to the nearest whole number.

a What is the smallest number that rounds to 100?

\_\_\_\_\_

b What is the largest number that rounds to 100?

\_\_\_\_\_

### Challenge

- 8 Write the letters of all the numbers that round to 10 to the nearest whole number. What word is spelt out?

A	B	C	D	E	F	G	H	I	J	K	L	M
10.8	10.1	9.3	11.1	10.4	7.8	8.8	9.3	19.8	1.9	10.7	9.6	99.9

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1.8	9.2	10.6	9.1	10.5	7.9	9.5	19.9	16.2	10.9	20.3	8.9	9.4

\_\_\_\_\_