

2017 national curriculum tests

Key stage 1

Mathematics

Paper 1: arithmetic

First name	
Middle name	
Last name	

Total marks	
-------------	--

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Practice question

$4 - 1 =$

1

$$6 - 4 =$$



1 mark

2

$$99 + 1 =$$



1 mark

3

$7 + 8 =$



1 mark

4

$22 + 7 =$



1 mark

5

$= 15 - 2$



1 mark

6

$20 + 30 + 50 =$



1 mark

7

$6 \times 2 =$



1 mark

8

$90 - 80 =$



1 mark

9

$$43 - 5 =$$



1 mark

10

$$84 + 12 =$$



1 mark

11

$$20 + \boxed{} = 70$$



1 mark

12

$$97 + 5 = \boxed{}$$



1 mark

13

$$47 + 50 =$$



1 mark

14

$$\frac{1}{2} \text{ of } 14 =$$



1 mark

15

$2 \div 2 =$



1 mark

16

$8 \times 3 =$



1 mark

17

$$3 + \boxed{} + 6 = 16$$



1 mark

18

$$5 \times 12 = \boxed{}$$



1 mark

19

$$85 - 21 =$$



1 mark

20

$$92 - 60 =$$



1 mark

21

$$52 + 29 =$$



1 mark

22

$$80 \div 10 =$$



1 mark

23

$$- 12 = 36$$



1 mark

24

$$\frac{1}{3} \text{ of } 12 = \text{ }$$



1 mark

25

$$91 - 48 =$$



1 mark

End of test

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Standards
& Testing
Agency

2017 key stage 1 mathematics

Paper 1: arithmetic

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2017 national curriculum tests

Key stage 1

Mathematics

Paper 2: reasoning

First name	
Middle name	
Last name	

Total marks	
-------------	--



Amy



Ajay

Sam

Ben

Sita

Kemi

Practice question

Ajay



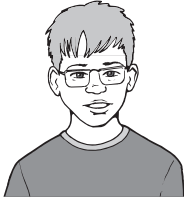
Amy



footballs

1

Ben



Kemi



Sam



Sita



A rectangular box with a blue border, containing the letter 'p' in the bottom right corner.

1 mark

2

110

1001

111

101

200



1 mark

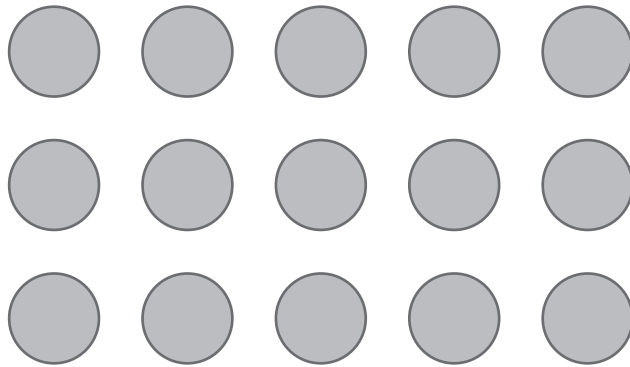
3

63

bean bags



1 mark



$$5 + 3$$

$$5 - 3$$

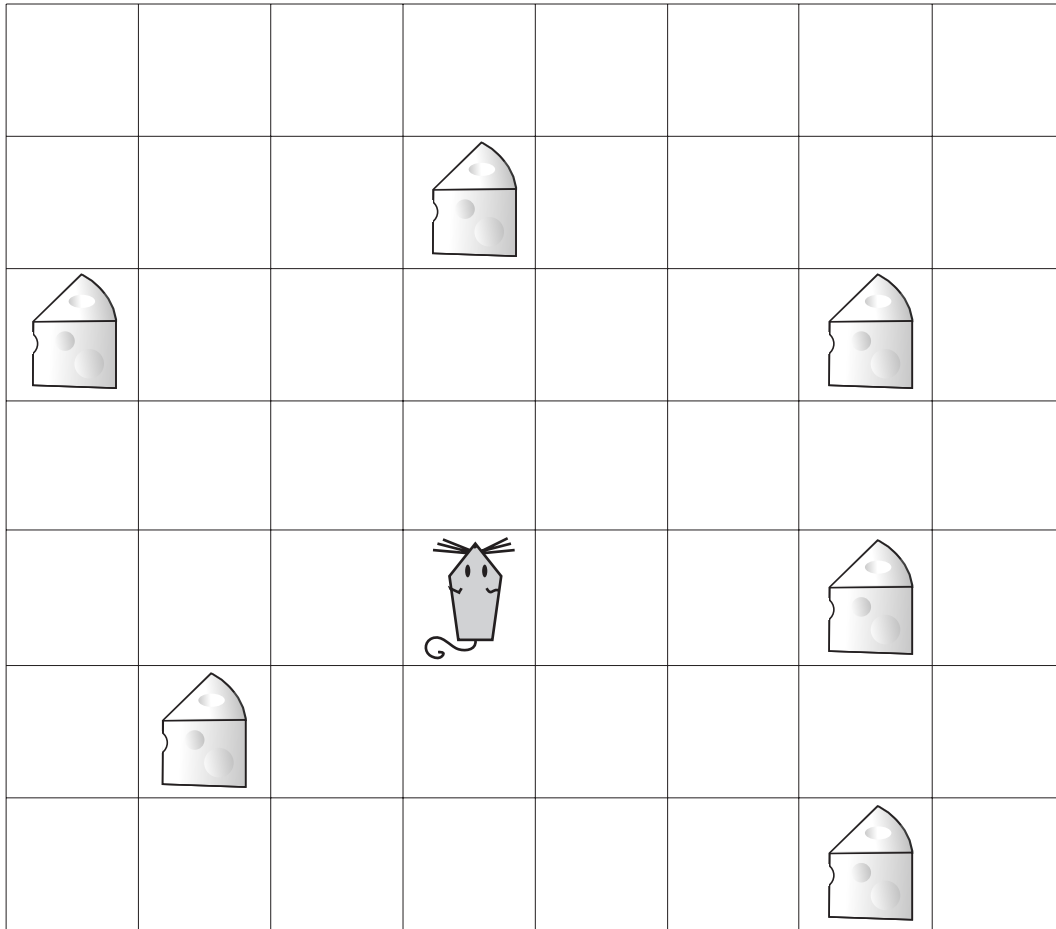
$$5 + 5$$

$$5 \times 3$$



1 mark

5


1 mark

6

Write these numbers in order, starting with the smallest.

73 37 76 36 63

smallest

largest



1 mark

7

Circle the **shortest** time.

70 minutes

10 minutes

45 minutes

1 hour



1 mark

8

A game costs £25

Ben has £19



How much **more** money does Ben need to buy the game?

£



1 mark

9

Circle the **two** numbers that are even.

73

58

64

45

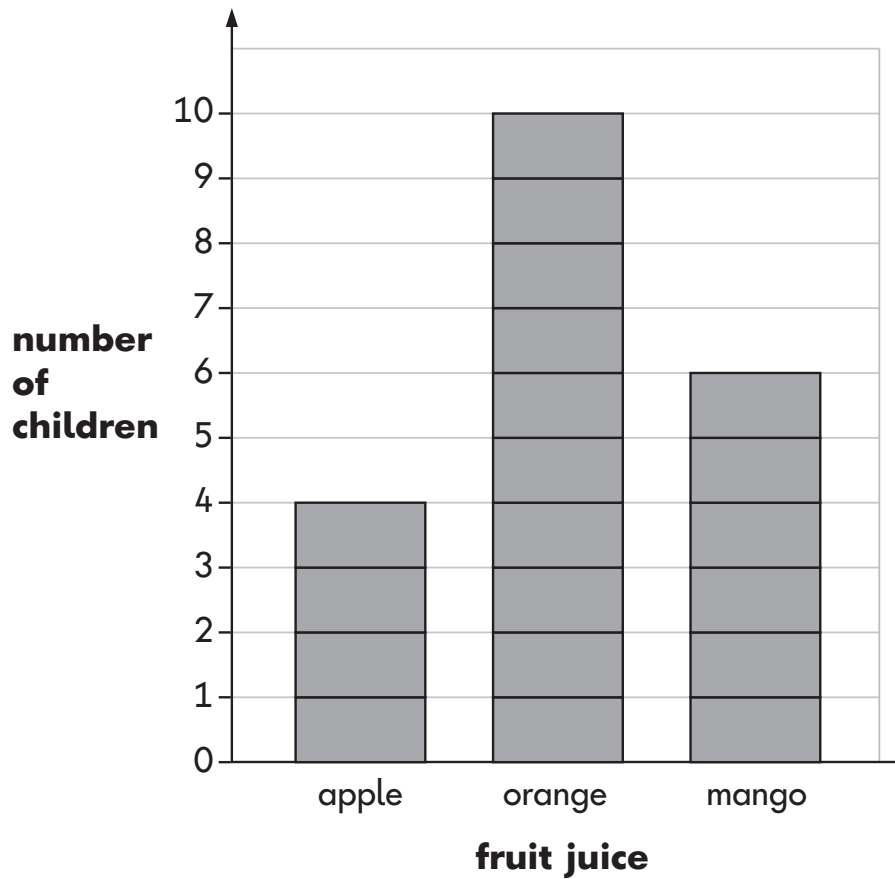


1 mark

10

20 children choose their favourite fruit juice.

The chart shows the results.



(a) How many **more** children choose orange than apple?

children



1 mark

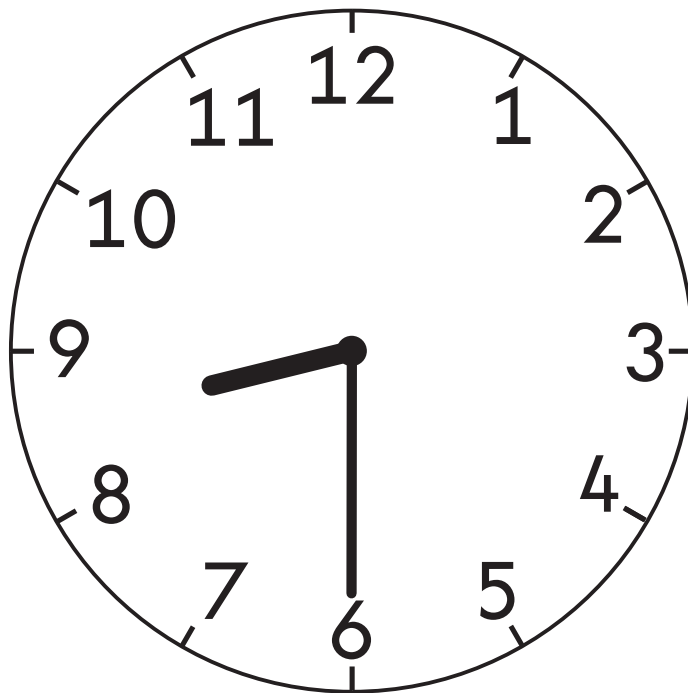
(b) Another boy joins the group.

He chooses **mango** juice.

Add this information to the chart.



1 mark



What time does the clock show?

Tick the correct box.

twenty to 6

half past 9

half past 8

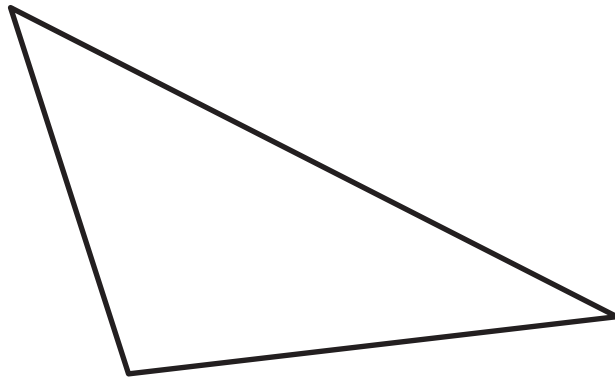
quarter to 6



1 mark

12 Measure the longest line.

Use a ruler.



cm


1 mark

13

Look at these numbers.

0

14

50

61

Write each number **once** to make these correct.

$$\square > \square$$

$$\square > \square$$

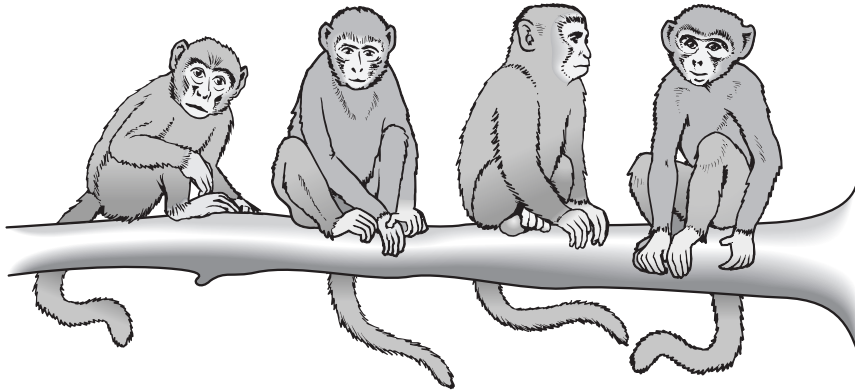


1 mark

14

20 bananas are shared equally among **4** monkeys.

How many bananas does **each** monkey get?



bananas

1 mark

15

Fill in the missing numbers to make each pair of cards **total 17**

One pair is done for you.

10	7
----	---

9	
---	--

	6
--	---



1 mark

16

Look at these coins:



What is the largest amount you can make using **three** of these coins?

p



1 mark

17

Ben ate half a pizza.

Which fraction shows the amount he ate?



Circle it.

$$\frac{1}{4}$$

$$\frac{1}{3}$$

$$\frac{2}{4}$$

$$\frac{3}{4}$$



1 mark

18

Write six **different** numbers to make these sums correct.

$$\square + \square = 27$$

$$\square + \square = 27$$

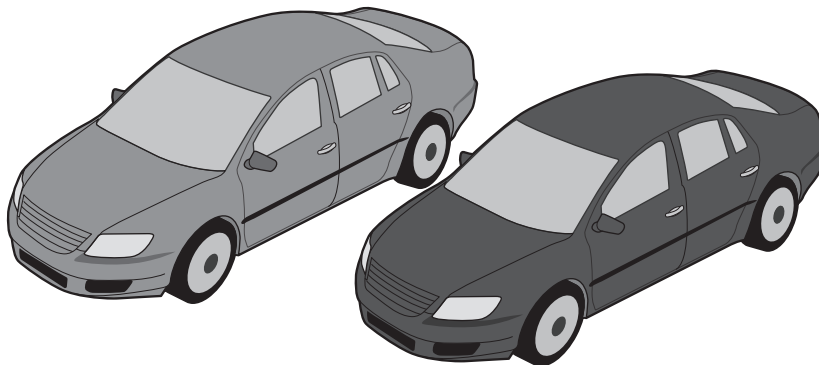
$$\square + \square = 27$$



2 marks

19

Ben and Sita count cars.



Ben counts **38** red cars.

Sita counts **23** blue cars.

How many cars do they count **altogether**?

cars

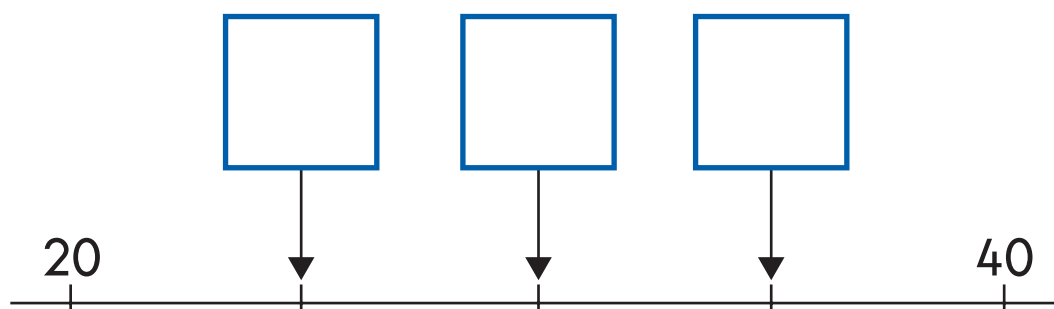


1 mark

20

The numbers on this number line go up by the **same amount** each time.

Write the missing numbers in the boxes.

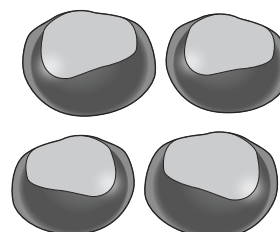


1 mark

21

Ajay, Sam and Kemi have 4 conkers each.

How many conkers do they have **altogether**?



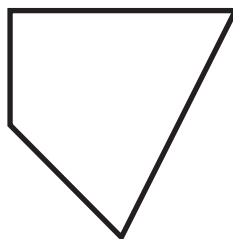
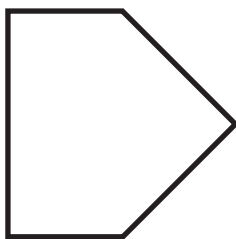
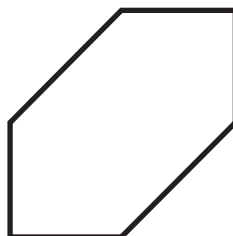
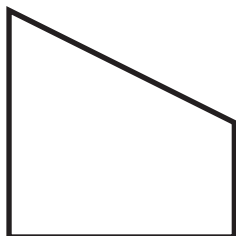
conkers



1 mark

22

Tick the **pentagon**.



1 mark

23

Write the missing number to make this number sentence correct.

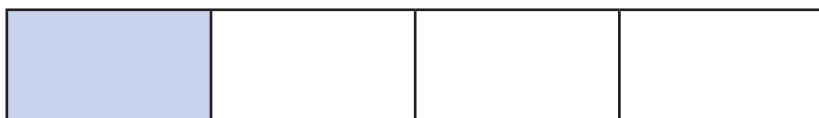
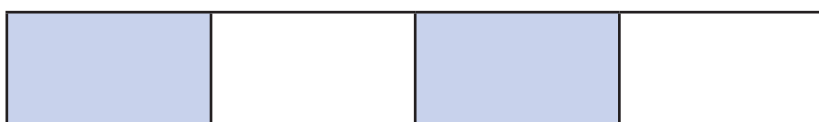
$$9 + 7 - \boxed{} = 12$$



1 mark

24

Tick the shape that has exactly $\frac{1}{3}$ shaded.



1 mark

25

Complete these sums.

One is done for you.

$$\boxed{3} + \boxed{7} = \boxed{10}$$

$$\boxed{33} + \boxed{} = \boxed{40}$$

$$\boxed{} + \boxed{7} = \boxed{80}$$

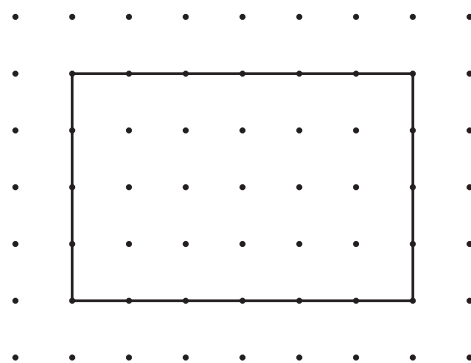


1 mark

26

Draw lines to divide the rectangle into quarters.

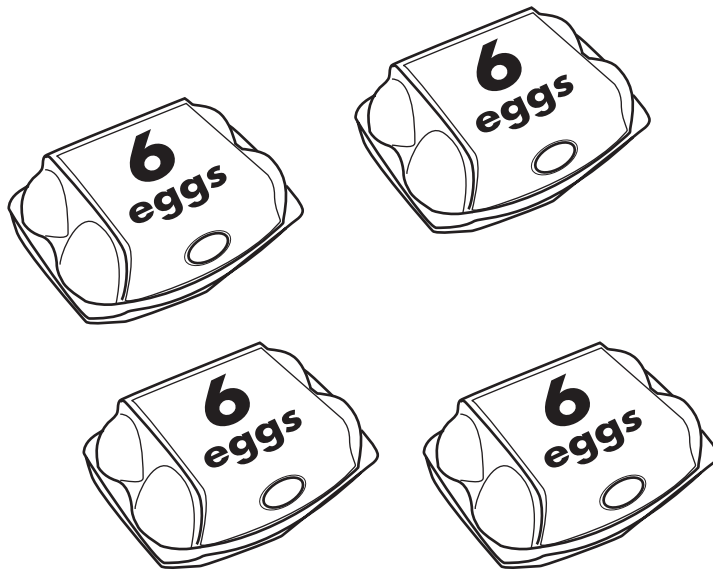
Use the dots to help you.



1 mark

27

Ben has 4 boxes of eggs.



Write a number sentence using $\times$ and $=$ to show that Ben has **24** eggs altogether.



1 mark

28 There are **55** cakes.

20 boys and **19** girls each take a cake.

How many cakes are **left**?



Show
your
working

cakes

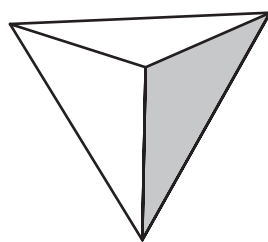
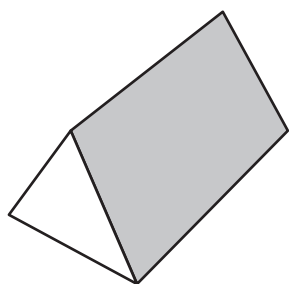
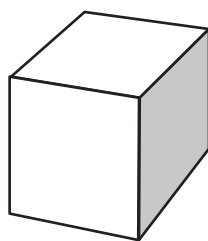
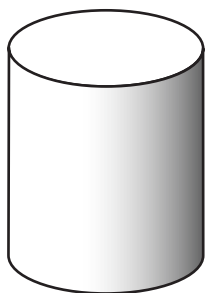


2 marks

29

Two shapes have **more than 8** edges.

Tick them.

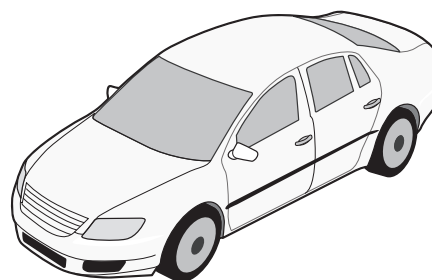


1 mark

30 There are **76** cars in the car park.

18 more cars go into the car park.

Then **35** cars go out.



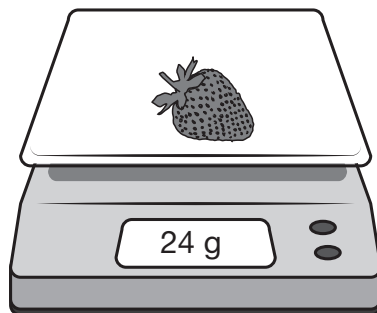
How many cars are in the car park **now**?

Show
your
working

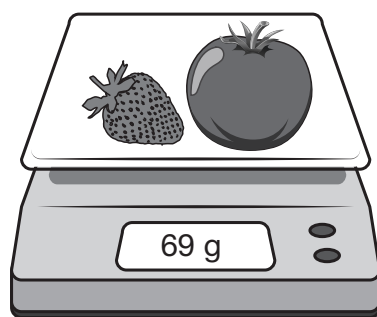
cars

2 marks

- 31 The strawberry weighs **24** grams.



The strawberry and tomato together weigh **69** grams.



What does the tomato weigh?

g

1 mark

End of test

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2017 key stage 1 mathematics

Paper 2: reasoning

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Key stage 1

Mathematics

Administering the mathematics test

Paper 2: reasoning

CONFIDENTIAL

This pack must be kept secure and unopened until **Tuesday 2 May 2017**. The pack must not be opened until the pupils are in the test room ready to complete the first administration of the test.

The photocopiable pupil transcript for the aural questions is contained within this pack; if you need to use this with any of your pupils, you can open this pack up to one hour early on the day of the administration to photocopy the transcript.

Please ensure you have read and understood the 2017 test administration guidance before opening this pack.

Pack contents:

- An overview of the key stage 1 mathematics: Paper 2: reasoning (overleaf)
- 10 copies of Paper 2: reasoning

For test administration

2017 Key stage 1 mathematics test Paper 2: reasoning

The key stage 1 mathematics test consists of 2 papers. The papers must be administered in order. Pupils do not have to sit both papers on the same day. If both papers are administered on the same day, pupils may benefit from a break between papers. Both papers can be administered to the whole class, smaller groups of pupils or on an individual basis. However, test packs must not be opened until the pupils are in the test room ready to complete the first administration of the test.

Paper 2: reasoning

The following information explains how to administer mathematics Paper 2: reasoning. If you have any questions, you should check with your headteacher or key stage 1 test co-ordinator before you administer the test.

Administrators can stop an individual pupil at any stage of the test if they feel it is appropriate for that particular pupil.

Please make sure you follow these instructions correctly in order to ensure that the test is properly administered. Failure to administer the test correctly could result in a maladministration investigation at the school.

Format	• This component of the test consists of a single test paper. • It is expected that the reasoning paper will take approximately 35 minutes to complete (not strictly timed). • It is at your discretion to choose when or if pupil(s) require a break during the test or whether, if appropriate, to stop the test early. • This paper has two sections: an aural section and a written section. The first section starts with a practice aural question followed by 5 aural questions. • After the aural questions, the pupils are presented with written questions. The time for the written questions should be approximately 30 minutes.
Equipment	Each pupil will need the equipment specified below: • a pencil or blue / black pen • a sharp, dark pencil for mathematical drawing • a ruler (showing centimetres and millimetres) • a mirror • a rubber (optional). If rubbers are not provided tell pupils that they should cross out any answers they wish to change. Pupils may use the following equipment, if this is normal classroom practice, provided they only give word-for-word translations: • bilingual dictionaries or electronic translators • bilingual word lists • monolingual English electronic spell checkers. Pupils are not allowed: • calculators • tracing paper • number apparatus e.g. base ten materials, number squares, etc.
Assistance	• You must ensure that nothing you say or do during the test could be interpreted as giving pupils an advantage, e.g. indicating that an answer is correct or incorrect, or suggesting the pupil looks at an answer again. • If a pupil requests it, a question may be read to the pupil on a one-to-one basis. You can also read questions 6 to 31 if a pupil has difficulty in reading the questions for themselves. • If reading to a pupil, you can read words and numbers but not mathematical symbols. This is to ensure that pupils are not given an unfair advantage by having the function inadvertently explained by reading its name.

Assistance (continued)	- For pupils with hearing impairments, be careful when signing numbers and mathematical signs. In particular, please be careful when signing the following: Q5: <i>forward and quarter of a turn clockwise</i> Q9: <i>even</i> Q13: you may point to the sign $>$, but do not explain it as <i>greater than</i> Q22: <i>pentagon</i> Q24: $\frac{1}{3}$ Q26: <i>quarters</i> Q28: <i>left</i> may be signed or explained as <i>not taken</i> Q29: <i>edges.</i> - Guidance for administering the test to pupils with a visual impairment is contained in the modified test packs. - If reading questions to a pupil, you may point to parts of the test paper such as charts, diagrams, statements and equations, but you must not explain the information or help the pupil by interpreting it. - For this paper there is an optional pupil aural script that you can choose to provide to pupils to access this part of the test. Please refer to page 8 of this document for further guidance. - If any everyday context or words related to a question are unfamiliar to a pupil, you may show them related objects or pictures, or describe the related context. The examples below illustrate how to deal with some common queries. Q. What does 'fraction' mean? A. I can't tell you, but think hard and try to remember. We can talk about it after the test. Q. What does '$>$' or '$<$' mean? A. I can't tell you, but think hard and try to remember. We can talk about it after the test.
Before the test begins	- Review the list of pupils with any particular individual needs, e.g. pupils who may need to use the optional pupil script for the aural questions, or who may need a scribe or a transcript made at the end of the test. - Ensure that you know how to administer any access arrangements correctly. Please refer to the 2017 key stage 1 access arrangements guidance. - The optional pupil script for the aural questions can be found at the back of this document. Please photocopy it for the pupils who need it. - Check that there are enough administrators to maintain supervision and support for the test. You should consider the possibility of at least one test administrator needing to leave the room with a pupil. - Ensure that you understand how to deal with issues during the tests.
How to deal with issues during the test	It is impossible to plan for every scenario. Whatever action you take, pupil safety must always be your first consideration. In the following circumstances, you will need to stop the test either for an individual pupil or for the whole cohort: - test papers are incorrectly collated or the print is illegible - a fire alarm goes off - a pupil is unwell - a pupil needs to leave the test room during the test - a pupil is caught cheating.

This section continues on the next page.

How to deal with issues during the test (continued)	If you need to stop the test: • make a note of the time • make sure pupils are kept under test conditions and that they are supervised • if they have to leave the room, ensure they don't talk about the test • speak to your test co-ordinator or a senior member of staff for advice on what to do next • consider contacting the national curriculum assessments helpline on 0300 303 3013 for further advice. You should brief your headteacher on how the incident was dealt with, once the test is over.
What to do at the start of the test	• Check that seating is appropriately spaced and that no pupil can see another pupil's test paper. • Check that pupils don't have any materials or equipment that may give them extra help. • Check that pupils don't have mobile phones or other disruptive items. • Ensure that each pupil has a copy of mathematics Paper 2: reasoning.
What to say at the start of the test	• It is important to brief pupils fully at the start of each test. You should use these instructions to introduce mathematics Paper 2: reasoning. The text that you need to read to the pupils is in the large font. • The wording of these instructions can be adapted, provided the meaning is retained. This is the key stage 1 mathematics Paper 2: reasoning. You should have a test booklet in front of you. Write your name on the front of your test booklet. I'm going to explain to you how to write down your answers to the questions. You'll have plenty of time to work out the answers. You need to work on your own. You need to think of your own answers and you mustn't talk about them with anyone else. If you want to change an answer, you should put a line through the answer that you don't want to be marked. If you need to change a diagram or graph, make sure that you completely rub out or cross out your answer before writing your new answer. Some questions have boxes for you to write your answers in. You can do any working out in the white space around the boxes if you need to. • Where necessary, you can show the pupils how to draw a tick, circle or cross to indicate the answer. Open your test booklet at page 2. Amy and Ajay are children who are in some of the questions. There are different children mentioned in other questions as well. Their names are Sam, Ben, Sita and Kemi.

Introducing the aural questions

What to say at the start of the aural questions

Now I'm going to read aloud some questions for you to answer. I'm going to read each question twice, with a short gap in between. You need to listen very carefully when I read the questions to you.

You must work on your own and you must not call out the answers.

- If any pupils are using the optional pupil script to support their access to these questions, you should follow the guidance at the back of this document.

Look at the practice question on page 3. This is a practice question for us to do together.

- When reading the question to the pupils, remember to repeat the bold text only.
- You may help pupils locate the question where necessary.

Ajay has two footballs.

Amy has three footballs.

How many footballs do they have altogether?

Write your answer in the box.

- Before proceeding, ensure that the pupils know where they should have written their answer and the number they should have written. Discuss methods the pupils used to work out their answer. Allow the pupils to change their answer to the correct one by crossing out or rubbing out, to make sure they know how to correct errors.

Now I'm going to read out questions 1 to 5.

You should try to answer all of the questions. You should write your answers in the correct place for each question.

- If any pupils are using the optional pupil script, remind them to write their answers in the test booklet and not on the script.

Remember, I can't help you with these next questions. You should try to work them out on your own. If you can't answer a question move onto the next one.

Do you have any questions that you want to ask before we start?

Turn to page 4 of the booklet.

- Read questions 1 to 5, allowing sufficient time for pupils to write their answers before you move on to the next question. When reading the question to the pupils, remember to repeat the bold text only. Words that are underlined should be emphasised.

This section continues on the next page.

Question 1	Ajay has <u>four</u> friends: Ben, Kemi, Sam and Sita. He gives <u>ten</u> pence to each friend. How much money does he give altogether? Write your answer in the box.
Question 2	I am counting forwards. When I stop counting, tick the next number I should say: ninety-seven, ninety-eight, ninety-nine, one hundred ...
Question 3	There are <u>sixty-three</u> bean bags in a sack. Amy takes <u>ten</u> bean bags away. How many bean bags are left in the sack? Write your answer in the box.
Question 4	Turn to the next page. Look at the array of circles. Now look at the four calculations. [Pause] Tick the calculation that describes the array. [Pause]
Question 5	Look at the mouse. Ajay moves the mouse to a piece of cheese. He moves the mouse <u>two</u> squares forward. [Pause] He then turns the mouse a <u>quarter of a turn clockwise</u> and moves it forward <u>three</u> squares. [Pause] Circle the piece of cheese the mouse lands on.

Introducing the written questions

What to say at the start of the written questions	For the rest of the test you will need to read the questions in the booklet yourself. • Please note you may need to change the instruction above if you are supporting some pupils with reading. Remember, if you want to change an answer you should put a line through the answer that you don't want to be marked. • Where necessary, you can show the pupils how to change their answers if they think they have made a mistake. In some places there will be an answer box. In other places you may need to write your answer on a diagram or graph. If you need to change a diagram or graph make sure that you completely rub out or cross out your answer before writing your new answer. • Where necessary, you can show the pupils how to draw a tick, circle or cross to indicate the answer. You can use the white space on the page to do any working out if you need to. You need to work on your own. You need to think of your own answers and you mustn't discuss them with anyone else. You have approximately 30 minutes to complete the rest of the paper now. Turn to page 8 and start working.
What to do at the end of the test	• Follow your school's procedure for collecting and storing the pupils' test scripts. • If any pupil needs a transcript, complete it with the pupil at the end of the test, under test conditions. Particular care should be taken to ensure accurate transcriptions are made and pupils' answers are not corrected or amended.
Marking the tests	• Use the key stage 1 test mark schemes to mark the test, following both the general guidance and any specific guidance for each question.

Optional pupil script for the aural questions

2017 key stage 1 mathematics test Paper 2: reasoning

This is an optional script.

Some pupils may need extra visual support to access the first 5 aural questions of the key stage 1 mathematics reasoning test. The class teacher can provide this optional script to the pupil(s) in addition to their test booklet, if they consider it necessary.

Pupils should use the script alongside their test booklet when listening to the aural questions read by the teacher.

Who is the script for?	The optional pupil script may be used with any pupil who would find it difficult to access and respond to the aural questions and the visual prompts in the test booklet. Before administering the test with the optional pupil script, you should consider: • Does the pupil have any needs where providing the optional pupil script alongside the test would improve their access to the aural questions? • You should only use this script with pupils where you are confident that the use of the additional script will not confuse the pupils.
Assistance	• You must adhere to the administration guidelines in the test administration booklet when administering the test. • Pupils using the optional pupil script will need support so that they can manage the script, the test booklet and listen to the teacher appropriately.
Before the test begins	• Make a note of pupils who will have access to the optional pupil script for aural questions. • Make copies of the optional pupil script on the next page, as required. • Provide a copy of the test booklet and the additional optional pupil script to the designated pupils. • Tell the pupils that they should use the script to help them follow the questions as you read them. • Refer to the teacher aural script to administer the aural section of the test.
What to say at the start of the aural questions	• Follow the administration guidance provided in this document. • Tell the pupils to write their name on their optional script as well as their test booklet. • Remind pupils who have the optional script that they should follow each question as you read it aloud. • Explain to pupils that they should record their answers in their test booklet and not on the optional script.
After the aural questions have been administered	• After the last aural question has been read aloud, collect the optional pupil scripts.
Marking the aural questions	Use the key stage 1 test mark schemes to mark the tests, following both the general guidance and any specific guidance for each question. Answers given in the test booklet should take precedence. However if a pupil has written their answer on the optional script and not in the test booklet, teachers should mark accordingly as long as the pupil's answer is not contradicted elsewhere.

You may photocopy the optional pupil script for each pupil who is using it during the administration of the aural questions (1 to 5) of Paper 2. Please refer to the guidance on page 8 before using it.

First name	
Middle name	
Last name	

Practice question	Ajay has 2 footballs. Amy has 3 footballs. How many footballs do they have altogether?
Question 1	Ajay has 4 friends: Ben, Kemi, Sam and Sita. He gives 10p to each friend. How much money does he give altogether?
Question 2	I am counting forwards. When I stop counting, tick the next number I should say: 97 98 99 100...
Question 3	There are 63 bean bags in a sack. Amy takes 10 bean bags away. How many bean bags are left in the sack?
Question 4	Look at the array of circles. Now look at the four calculations. Tick the calculation that describes the array.
Question 5	Look at the mouse. Ajay moves the mouse to a piece of cheese. He moves the mouse 2 squares forward. He then turns the mouse a quarter of a turn clockwise and moves it forward 3 squares. Circle the piece of cheese the mouse lands on.

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2017 key stage 1 mathematics: Administering the mathematics test Paper 2: reasoning
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Standards
& Testing
Agency

OGL

2017 national curriculum tests

Key stage 1

Mathematics test mark schemes

Paper 1: arithmetic
and Paper 2: reasoning



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1. Introduction

The Standards and Testing Agency (STA) is responsible for the development and delivery of statutory tests and assessments. STA is an executive agency of the Department for Education.

The 2017 test assesses the 2014 national curriculum. The test has been developed to meet the specification set out in the test framework for mathematics at key stage 1. The test frameworks are on the GOV.UK website at www.gov.uk/government/publications/key-stage-1-mathematics-test-framework.

A new test and mark schemes will be produced each year.

The key stage 1 tests will be marked internally within schools to inform teacher assessment.

Scaled score conversion tables are not included in this document. Conversion tables will be produced as part of the standard-setting process. Scaled score conversion tables for the 2017 tests will be published at www.gov.uk/guidance/scaled-scores-at-key-stage-1 in June 2017.

The mark schemes are provided to use when marking pupils' responses. The pupil examples are based on responses gathered from the test trialling process. It is important when marking to refer to the general marking principles, the exemplars section and the additional guidance, to ensure marking is accurate and consistent.

2. Structure of the key stage 1 mathematics test

The key stage 1 mathematics test materials comprise:

- Paper 1: arithmetic (25 marks)
- Paper 2: reasoning (35 marks).

The mathematics test comprises 2 components which are presented to pupils as 2 separate test papers. The first component is an arithmetic paper (Paper 1). The second component (Paper 2) presents a range of mathematical problems. The test is administered on paper.

3. Content domain coverage

The 2017 test meets the specification set out in the test framework. Table 1 sets out the areas of the content domain that are assessed in Papers 1 and 2.

The references below are taken from the test framework. A question assessing 2M1, for example, assesses 'compare and order lengths, mass, volume/capacity and record the results using $>$, $<$ and $=$ ' and is taken from the year 2 programme of study.

Table 1: Content domain coverage of the 2017 key stage 1 mathematics test

Paper 1: arithmetic		Paper 2: reasoning	
Question	Content domain reference	Question	Content domain reference
1	1C2a	1	2C8
2	1N2b/1N1a	2	1N1a/2N2a
3	1C2a	3	2N6
4	2C2b	4	2C8
5	2C1/1C2b	5	2P2
6	2N6/2C1	6	2N2b/2N3
7	2C6	7	2M4b/2M4c
8	2C1/2C2a	8	2C4/2M9
9	2C2b	9	2C6
10	2C2b	10a	2S2b
11	2C3	10b	2S1
12	2C2b/1N1a	11	1M4a/2M4a
13	2N6/2C2b	12	2M2
14	2F1a/1F1a	13	2N2b
15	2C6	14	2C8
16	2C8/2N1	15	2C1/2C3
17	1C4/2C1	16	2M3a/2M9
18	2C6/1N1b	17	2F2
19	2C2b	18	2C4
20	2N6/2C2b	19	2C4
21	2C2b	20	2N4
22	2C6	21	2C8
23	2C3/2C2b	22	1G1a/2G1a
24	2F1a	23	2C3/2C2b
25	2C2b	24	2F1a
		25	2C1/2C3
		26	1F1b
		27	2C7
		28	2C4
		29	2G2b
		30	2C4
		31	2C4

4. Explanation of the mark schemes

The marking information for each question is set out in the form of tables (sections 7 and 8).

The '**Qu.**' column on the left-hand side of each table provides a quick reference to the question number and part.

The '**Requirement**' column may include two types of information:

- a statement of the requirements for the award of each mark, with an indication of whether partial credit can be given for a correct method
- examples of some different types of correct answer.

The '**Mark**' column indicates the total number of marks available for each question part.

The '**Additional guidance**' column indicates alternative acceptable answers, and provides details of specific types of answer which are unacceptable. Other guidance, such as the range of acceptable answers, is provided as necessary.

5. General marking guidance

5.1 Applying the mark schemes

To help you mark consistently, the most frequent procedural queries are listed along with the action you should take. Unless otherwise specified in the mark scheme, you should apply these guidelines in all cases.

Example responses are also included for the two working mark questions and one other question in Paper 2: reasoning. These should act as your guide when you are marking these questions.

5.2 General marking principles

Table 2: General marking principles

Possible issues when marking	
1. The pupil's answer does not closely match any of the examples in the mark scheme.	Those marking the test will use their judgement to decide whether the answer corresponds with details in the 'Requirement' column of the mark scheme. Refer also to the 'Additional guidance' column and to the examples of responses where appropriate.
2. The pupil has answered in a non-standard way.	Pupils may provide evidence in any form as long as its meaning can be understood. Diagrams, symbols or words are acceptable ways to present an answer.
3. The pupil's answer is correct but the wrong working is shown.	Always award the mark for a final response that is correct.
4. No answer is provided in the expected place but the correct answer is given elsewhere.	Where a word or number response is expected, a pupil may meet the requirement by annotating a graph or labelling a diagram elsewhere in the question.
5. The correct answer has been crossed (or rubbed) out and not replaced.	You should not award any marks for crossed out answers or working.
6. The answer in the answer box is wrong, but the correct answer is shown in the working.	Give precedence to the response provided in the answer box over any other workings. However, in a 2-mark question, one mark may still be awarded for evidence of a complete, correct method.

Possible issues when marking	
7. More than one answer is given.	If all provided answers are correct (or a range of answers is given, all of which are correct), a mark will be awarded unless the mark scheme states otherwise. If both correct and incorrect responses are given, no mark will be awarded unless the mark scheme states otherwise.
8. There appears to be a misread of numbers that affects the pupil's working.	A misread occurs when a pupil misreads a number given in the question and consistently uses a different number that does not alter the original intention or difficulty of the question. For example, if 43 is misread as 48, both numbers may be regarded as comparable in difficulty. However, if 43 is misread as 40 or 45, the misread number may be regarded as making the question easier, depending on the question. For example, $26 + 40$ is easier than $26 + 48$. The misread of a number will affect the award of marks. No marks are awarded if there is more than one misread in a question or if the mathematics is simplified by the misread. For 1-mark questions: no mark is awarded for one or more misreads. For 2-mark questions that have a method mark: one mark is awarded if the correct method is correctly implemented with the misread number, provided this does not simplify the mathematics.
9. The pupil's answer is numerically equivalent to the answer in the mark scheme.	Answers should be given as single values in their simplest form unless the mark scheme states otherwise, e.g. for $\square = 12 - 5$, the answer $4 + 3$ will not be accepted. Where alternative expressions are acceptable, these will be indicated in the additional guidance column.
10. The pupil reverses a digit in their answer.	A reversed digit is acceptable if it is clearly recognisable as the digit intended. For example, a reversed 2 must clearly show the characteristics of a 2 rather than a 5. As a further example, where the answer is 61 and the response ɒ1 is given, then this should be awarded the mark. You should make a decision based upon your knowledge of the pupil's writing.

Possible issues when marking	
11. The pupil transposes digits in their answer.	A pupil transposes digits by reversing their order, e.g. 83 instead of 38. For questions where no working is shown, an answer with transposed digits should not be awarded the mark. For example, a response of 16 or 18 when the answer is 61 should not be marked as correct.
12. The pupil has worked out the answer correctly but then copied the wrong answer into the answer box.	A transcription error can occur when the pupil miscopies the correct answer from the end of their working into the answer box. Give precedence to the answer given in the answer box over any other workings. There may be cases where the incorrect answer is a transcription error, in which case you may check the pupil's intention and decide whether to award the mark.
13. The pupil's answer correctly follows through from earlier incorrect work.	'Follow through' marks for an answer may only be awarded when specifically stated in the mark scheme.

6. Internal moderation procedures

We recommend those who are involved in marking the key stage 1 tests undertake moderation activity to ensure marking is consistent across their school.

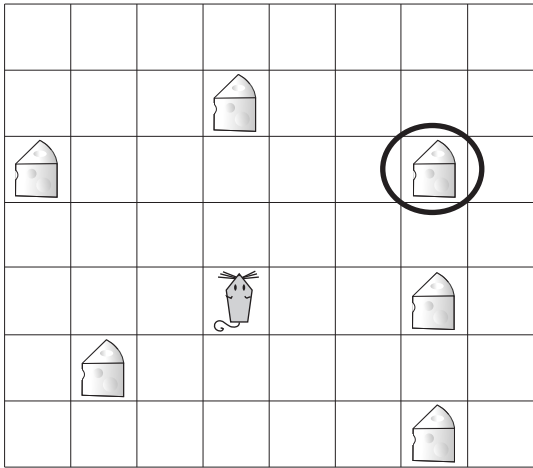
7. Mark schemes for Paper 1: arithmetic

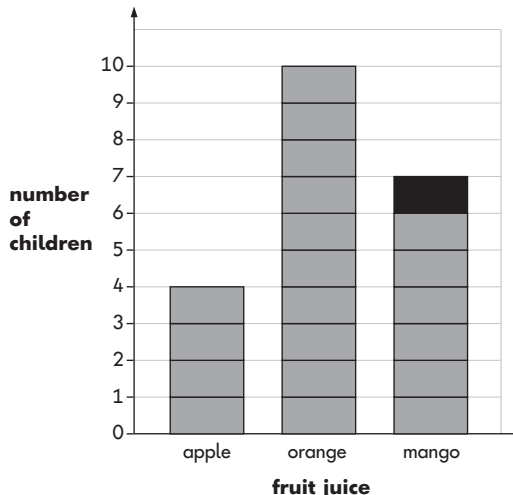
Equivalent answers are **not** acceptable, e.g. $10 + 4$ instead of 14. When marking the arithmetic questions refer specifically to general marking principles 9, 10, 11 and 12.

Qu.	Requirement	Mark	Additional guidance
P	3	none	Practice question
1	2	1m	
2	100	1m	
3	15	1m	
4	29	1m	
5	13	1m	
6	100	1m	
7	12	1m	
8	10	1m	
9	38	1m	
10	96	1m	
11	50	1m	
12	102	1m	
13	97	1m	
14	7	1m	
15	1	1m	
16	24	1m	
17	7	1m	
18	60	1m	
19	64	1m	
20	32	1m	
21	81	1m	
22	8	1m	
23	48	1m	
24	4	1m	
25	43	1m	

8. Mark schemes for Paper 2: reasoning

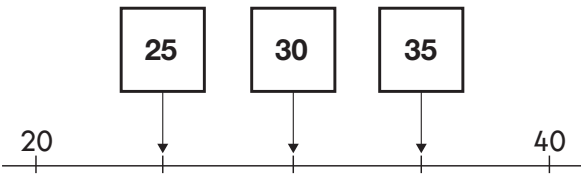
Qu.	Requirement	Mark	Additional guidance
Aural questions			
P	5 (footballs)	none	Practice question
1	40 (p)	1m	Accept any unambiguous indication of the correct amount, e.g. £0.40p Do not award the mark for answers where the amount of pounds and/or pence are incorrect, e.g. 0.40p £40p
2	The correct number ticked as shown: 110 1001 111 101 200	1m	Accept any other clear way of indicating the correct answer. Do not award the mark if additional numbers are indicated, unless it is clear the correct number is the pupil's final choice.
3	53 (bean bags)	1m	
4	The correct calculation ticked as shown: 5 + 3 5 - 3 5 + 5 5 × 3	1m	Accept any other clear way of indicating the correct calculation, including evaluating only the correct calculation, i.e. writing 15 alongside the correct calculation. Do not award the mark if additional calculations have been evaluated or selected, unless it is clear that the correct calculation is the pupil's final choice.

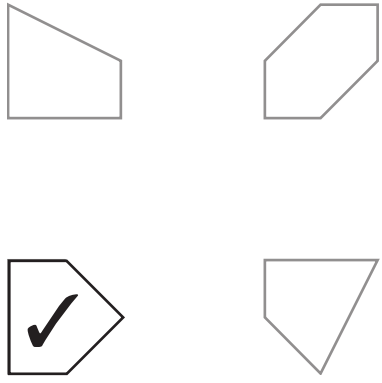
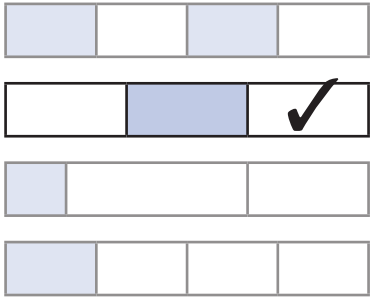
Qu.	Requirement	Mark	Additional guidance
5	Correct piece of cheese circled as shown: 	1m	Accept any other clear way of indicating the correct answer. Do not award the mark if additional pieces of cheese are indicated, unless it is clear that the correct piece of cheese is the pupil's final choice.
Written questions			
6	Numbers put in the correct order as shown: 36 37 63 73 76 smallest largest	1m	All numbers must be in the correct order for the award of the mark. Accept any other clear way of indicating the correct answer, e.g. matching each number to its correct position. Accept the numbers given in the reverse order, provided the labels have been swapped.
7	Shortest time circled as shown: 70 minutes <u>10 minutes</u> 45 minutes 1 hour	1m	Accept any other clear way of indicating the correct answer. Do not award the mark if additional times are indicated, unless it is clear that the correct time is the pupil's final choice.
8	(£) 6	1m	Accept any unambiguous indication of the correct amount, e.g. • (£)6.00 • (£)6.00p Do not award the mark for answers where the amount of pounds and/or pence are incorrect, e.g. (£)600 or (£)600p, unless the £ symbol has been crossed out in the answer box.

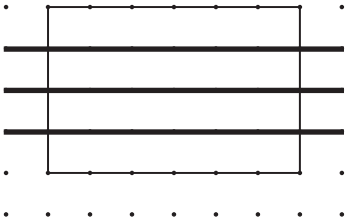
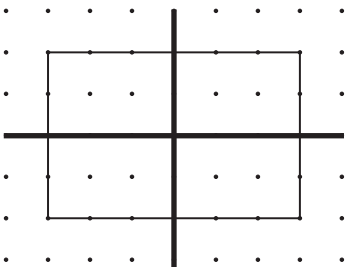
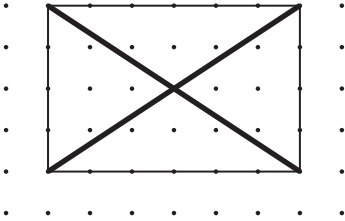
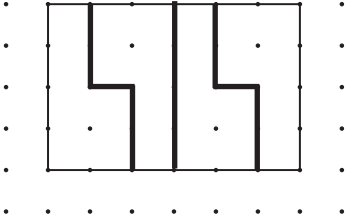
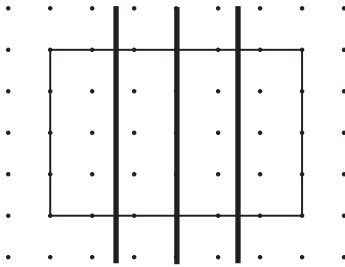
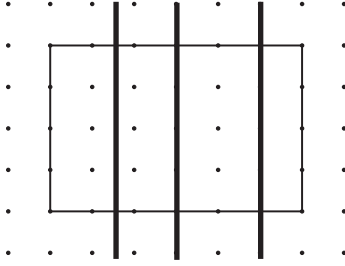
Qu.	Requirement	Mark	Additional guidance
9	Both correct numbers circled as shown: 73 58 64 45	1m	Both numbers must be indicated for the award of the mark. Accept any other clear way of indicating the two correct numbers. Do not award the mark if additional numbers are indicated, unless it is clear that the two correct numbers are the pupil's final choice.
10a	6 (children)	1m	Accept inaccuracies in drawing the block as long as the intention is clear, e.g. a mark of any height between 6 and 7 on the vertical axis. (Use the examples of responses given on pages 20 – 21 to help you determine the award of the mark.)
10b	One block added correctly to the mango column as shown: 	1m	
11	The correct time ticked as shown: twenty to 6 half past 9 half past 8 ✓ quarter to 6	1m	Accept any other clear way of indicating the correct answer. Do not award the mark if additional times are indicated, unless it is clear that the correct time is the pupil's final choice.
12	9 (cm)	1m	Accept any number in the range $8\frac{1}{2} - 9\frac{1}{2}$ inclusive, including decimal equivalents.

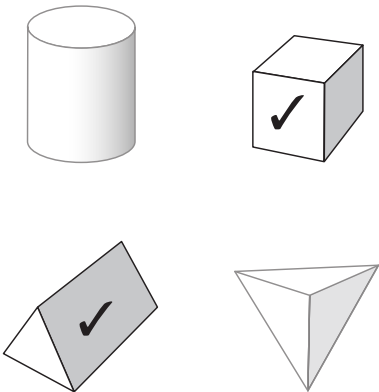
Qu.	Requirement	Mark	Additional guidance
13	Both inequalities completed correctly, using each of the given numbers once only, i.e. 14 > 0 61 > 50 OR 50 > 14 61 > 0 OR 61 > 50 14 > 0 OR 50 > 0 61 > 14	1m	Both inequalities must be correct for the award of the mark. Do not award the mark if any number is used more than once, e.g. 14 > 0 50 > 14 Do not award the mark if numbers not given in the question are used. (Refer to general marking principles 10 and 11 on pages 7 and 8.)
14	5 (bananas)	1m	

Qu.	Requirement	Mark	Additional guidance
15	Both numbers correct as shown: 10 7 9 8 11 6	1m	Both numbers must be correct for the award of the mark.
16	80 (p)	1m	Do not award the mark if the correct coins are indicated but their total value of 80p is not given, e.g. 50p, 20p, 10p circled without a total.
17	Correct fraction circled as shown: $\frac{1}{4} \quad \frac{1}{3} \quad \left(\frac{2}{4}\right) \quad \frac{3}{4}$	1m	Accept any other clear way of indicating the correct answer. Do not award the mark if additional fractions are indicated, unless it is clear the correct fraction is the pupil's final choice. Do not accept alternative equivalent values written, e.g. the word 'half'.

Qu.	Requirement	Mark	Additional guidance
18	Award TWO marks for the three sums completed correctly using six different numbers, e.g. $\boxed{26} + \boxed{1} = 27$ $\boxed{25} + \boxed{2} = 27$ $\boxed{20} + \boxed{7} = 27$ Award ONE mark for any two sums completed correctly, such that all three calculations are correct but numbers are repeated in two of the calculations or there is an error in one of the calculations, e.g. $\boxed{26} + \boxed{1} = 27$ $\boxed{1} + \boxed{26} = 27$ $\boxed{20} + \boxed{7} = 27$	2m or 1m	All three sums must be correct for the award of TWO marks. Accept $0 + 27$ as a correct answer. Any two sums can be correct for the award of ONE mark.
19	61 (cars)	1m	
20	All three numbers correct, as shown: 	1m	If the answer boxes are empty, accept the correct values written in the correct order elsewhere on the page.
21	12 (conkers)	1m	

Qu.	Requirement	Mark	Additional guidance
22	Pentagon ticked as shown: 	1m	Accept any other clear way of indicating the correct shape. Do not award the mark if additional shapes are indicated, unless it is clear that the correct shape is the pupil's final choice.
23	Calculation completed correctly as shown: $9 + 7 - \boxed{4} = 12$	1m	
24	Correct shape ticked as shown: 	1m	Accept any other clear way of indicating the correct shape. Do not award the mark if additional shapes are indicated, unless it is clear that the correct shape is the pupil's final choice.
25	Sums completed correctly as shown: $\boxed{3} + \boxed{7} = \boxed{10}$ $\boxed{33} + \boxed{7} = \boxed{40}$ $\boxed{73} + \boxed{7} = \boxed{80}$	1m	Both sums must be completed correctly for the award of the mark.

Qu.	Requirement	Mark	Additional guidance
26	Rectangle divided into four equal parts, e.g.  OR  OR  OR 	1m	Accept slight inaccuracies in drawing lines provided the intention is clear. Accept divisions that do not use dots, provided the lines drawn are reasonably accurate, and the pupil's intention is clear, e.g.  Do not award the mark if the rectangle is divided into four unequal parts, e.g. 

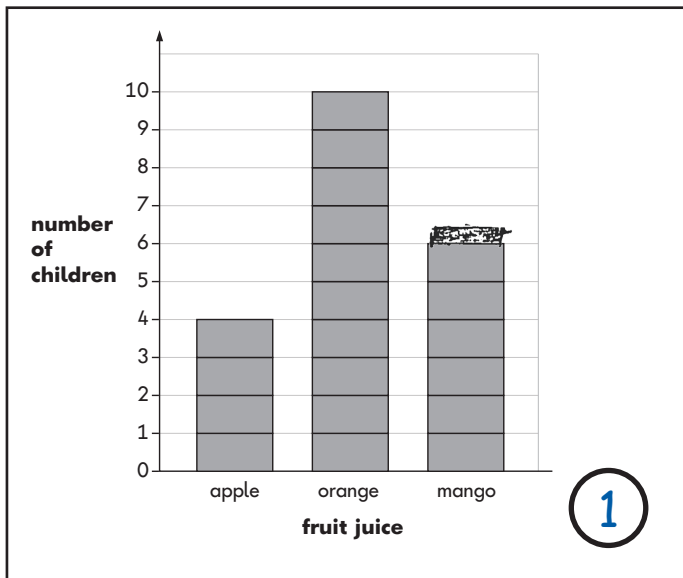
Qu.	Requirement	Mark	Additional guidance
27	A correct number sentence is given, e.g. $6 \times 4 = 24$ $4 \times 6 = 24$ Accept other multiplication sentences with the product 24, except 1×24, e.g. $2 \times 12 = 24$ $3 \times 8 = 24$	1m	Award the mark even if additional correct or relevant calculations are given along with a correct calculation, e.g. $2 \times 6 = 12$ $2 \times 12 = 24$ Also accept: $4 \times 6 = 1 \times 24$ $6 + 6 + 6 + 6 = 1 \times 24$ Do not accept 1×24 or 24×1 unless accompanied by an additional correct number sentence. Do not accept an incomplete number sentence e.g. 6×4 6×4 24 (missing equals sign) $6 \times 4 =$ (missing product)
28	Award TWO marks for the correct answer of 16 (cakes) If the answer is incorrect or missing, award ONE mark for evidence of a complete, correct method, e.g. $55 - 20 - 19 =$ (incorrect or no answer) $20 + 19 = 38$ (error) $55 - 38 =$	2m or 1m	(Use the examples of responses given on pages 22 – 24 to help you determine how many marks can be awarded.)
29	Both correct shapes ticked as shown: 	1m	Accept any other clear way of indicating the correct shapes. Do not award the mark if additional shapes are indicated, unless it is clear that the correct two shapes are the pupil's final choice.

Qu.	Requirement	Mark	Additional guidance
30	Award TWO marks for the correct answer of 59 (cars) If the answer is incorrect or missing, award ONE mark for evidence of a complete, correct method, e.g. • $76 + 18 - 35 =$ (incorrect or no answer) • $76 + 18 = 95$ (<i>error</i>) $95 - 35 =$	2m or 1m	(Use the examples of responses given on pages 25 – 26 to help you determine how many marks can be awarded.)
31	45 (g)	1m	

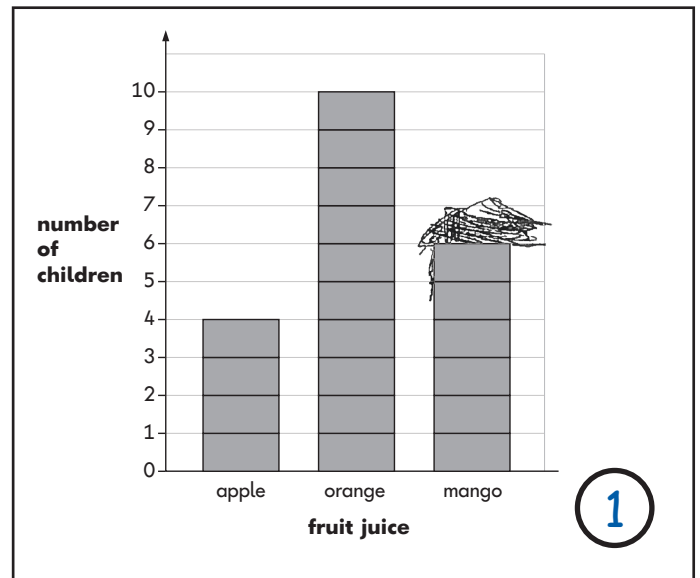
9. Example responses

9.1 Examples of responses from question 10b

Dan: 1 mark

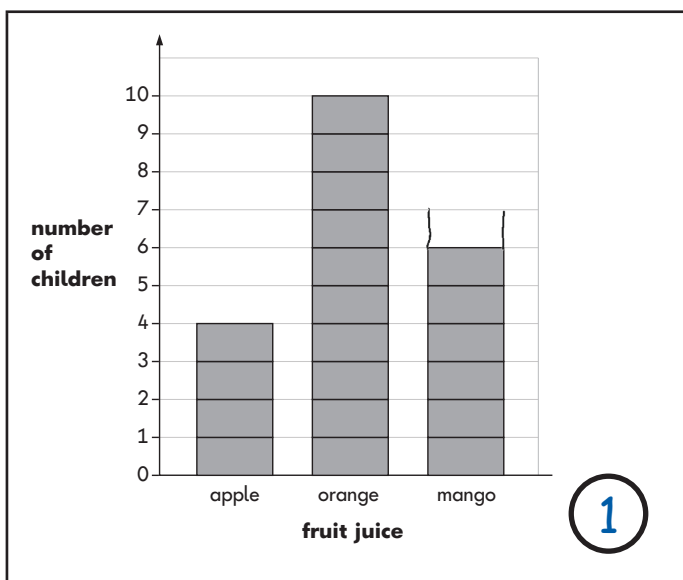


Katrina: 1 mark

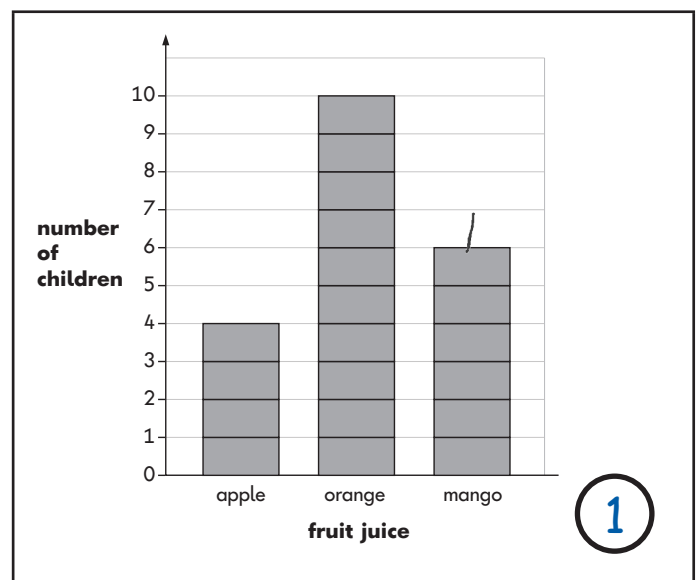


Dan and Katrina are both awarded a mark for their constructed response. Dan has indicated that he knows that one more must be added to the mango blocks. Similarly, Katrina has unambiguously indicated that one more block is required even though it slightly goes over the 7 on the vertical axis; she also can be awarded the mark.

Samantha: 1 mark



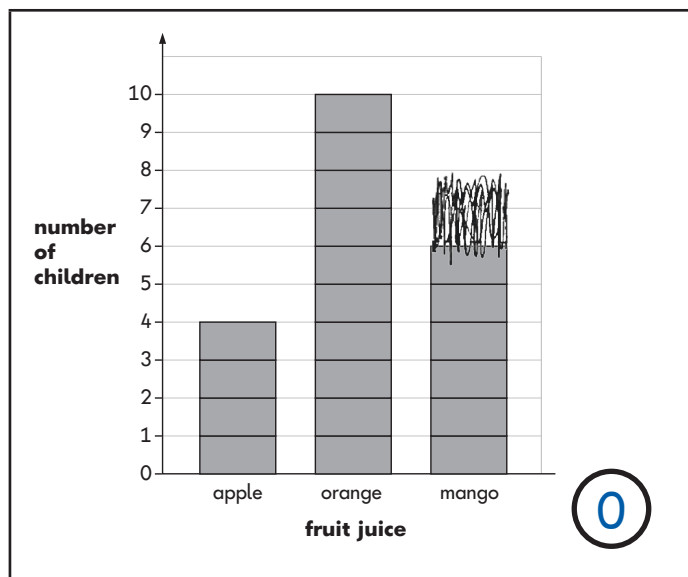
Tyler: 1 mark



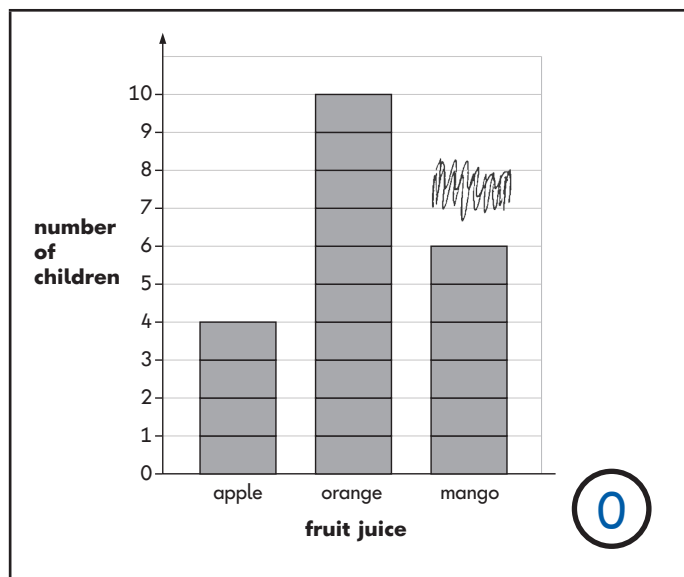
Samantha and Tyler each have been awarded the mark for their responses as they have both indicated in an unambiguous way that one more has to be added to the mango blocks.

9.1 Examples of responses from question 10b (continued)

David: 0 marks



Sarah: 0 marks



David and Sarah are not awarded the marks for their responses. David has clearly indicated two blocks instead of one block, whereas Sarah's response is ambiguous in that she has not added the information correctly to the chart.

9.2 Examples of responses from question 28

Joel: 2 marks

Show your working

$$55 - 40 = 15$$

$$15 + 1 = 16$$

61 cakes

2

Rabina: 1 mark

Show your working

$$55 - 20 = 35$$

$$35 - 10 = 25$$

$$25 - 10 = 15$$

61 cakes

1

Both Joel and Rabina have given 61 as their final answer. Joel has provided a correct written method for subtracting 39. He shows the correct answer 16 at the end of his working, but he has made a transcription error in the answer box. Since it can be clearly seen that 16 was his intended answer, he is awarded **two marks**. In contrast, although Rabina has a complete, correct method we do not know that 16 was her intended answer. Consequently she can only be awarded **one mark** for a correct method.

Suzanne: 1 mark

Show your working

$$55 - 20 = 35$$

$$35 - 14 = 21$$

21 cakes

1

Elijah: 0 marks

Show your working

$$55 - 20 = 35$$

$$55 - 19 = 36$$

9 cakes

0

Suzanne and Elijah have used written methods to solve the problem. Although Suzanne has made two arithmetic errors, her method is complete; she subtracted 20 from 55, and subtracted 19 from the result. Therefore she is awarded **one mark** for a complete, correct method. In contrast, Elijah has subtracted both 20 and 19, but he subtracted each of the numbers in turn from 55. Although he has evaluated each of his subtractions correctly, he has not shown a correct method. **No marks** can be awarded.

9.2 Examples of responses from question 28 (continued)

Max: 1 mark

20 + 19 = 39

39 + 6 = 55

Show your working

55

39

6 cakes

1

Stacey: 0 marks

Show your working

$$20 + 19 = 39$$

$$39 + \square$$

0 cakes

Max and Stacey have both completed their first calculation correctly: $20 + 19 = 39$. They have both attempted a 'counting on' method for their second calculation. Max has shown that he intended to count on to 55. However, he has made an arithmetic error by only counting on 6 instead of 16. Therefore he is awarded **one mark** for a complete, correct method. In contrast, whilst completing her second step, Stacey did not specify the number she intended to count on to, so her method is incomplete. As a result she is awarded **no marks**.

Elena: 1 mark

Show your working

14 cakes

1

Aidan: 0 marks

Show your working

0 cakes

Elena and Aidan used a pictorial method to solve the problem. Elena has correctly drawn 55 circles to represent the total number of cakes, and has proceeded to cross off 20 and 19. When obtaining her final answer she made a counting error. She can be awarded **one mark** for her correct method. Aidan, unlike Elena, has only drawn 50 circles, not 55. He then proceeded to cross off 20 and 19 accurately. However, he cannot be awarded the method mark because he did not use the number 55 as his starting point, so his method is incorrect and **no marks** are awarded.

9.2 Examples of responses from question 28 (continued)

Marius: 1 mark

Show your working

So I took away the 20 From 55 and I was up with (35) and I took away 19 and I was left with 17

17 cakes

1

Aisha: 0 marks

Show your working

I took away from 55

15 cakes

0

Marius has explained his method fully in words; he has subtracted 20 from 55 providing the correct answer of 35. He then explains that he subtracted 19 from 35, but at this stage he has made an arithmetic error providing the incorrect answer of 17. Even though his final answer is incorrect, he has shown a complete, correct method and therefore is awarded **one mark**. Aisha has also explained her method in words but has not explained which numbers she took from 55 to get to her answer of 15. Therefore **no marks** are awarded.

9.3 Examples of responses from question 30

James: 2 marks

Show your working

$$94 - 35 = 59$$

$$76 + 18 = 94$$

cars

2

James has arrived at the correct answer of 59. He is awarded **two marks** because he has clearly used the answer to $76 + 18 = 94$ in his second calculation to obtain his final answer. We can therefore assume that 59 is his final answer. In comparison, although Anita has a complete, correct method, she has made an arithmetic error in her first calculation and carried it through in the second, obtaining the incorrect answer 29. Because she has a complete, correct method, she is awarded **one mark**.

Anita: 1 mark

Show your working

$$76 - 35 = 11$$

$$11 + 18 = 29$$

cars

1

Kelly: 1 mark

Show your working

$$76 + 10 + 8 = 95$$

$$95 - 30 - 5 = 60$$

cars

1

Dominic: 0 marks

Show your working

$$70 + 10 = 80$$

$$6 + 8 = 14$$

$$80 + 14 = 94$$

$$94 - 30 = 64$$

$$64 - 5 = 59$$

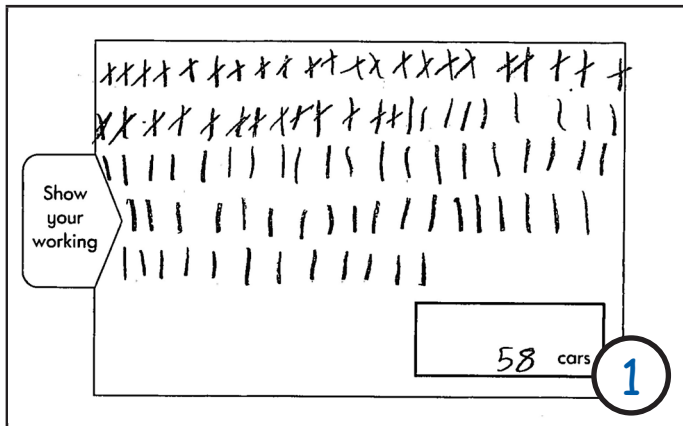
cars

0

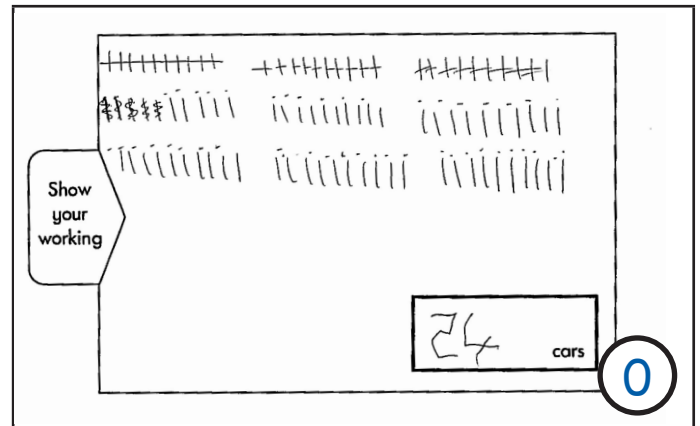
Kelly and Dominic have used partitioning to solve the problem. Although Kelly has made an arithmetic error in completing her first step, $76 + 10 + 8 = 95$, she has followed it through and completed the method correctly, so she can be awarded **one mark** for her method. In contrast, Dominic partitions to add $76 + 18$ and has a correct total, 94. He then partitions 35 to subtract it, but does not show that 35 must be subtracted from his total of 94. His method is not complete and **no marks** are awarded.

9.3 Examples of responses from question 30 (continued)

Sean: 1 mark

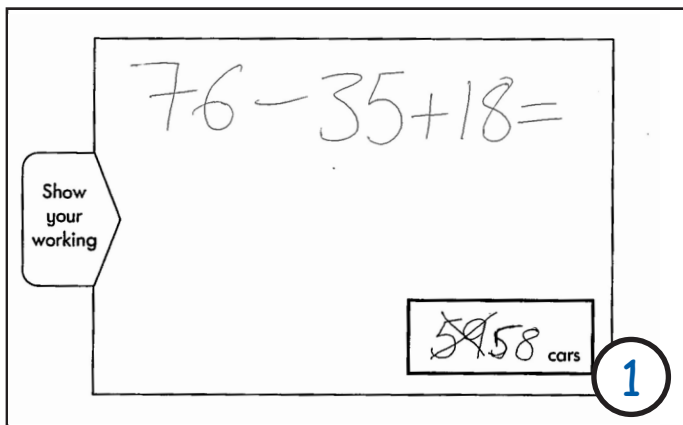


Daisy: 0 marks

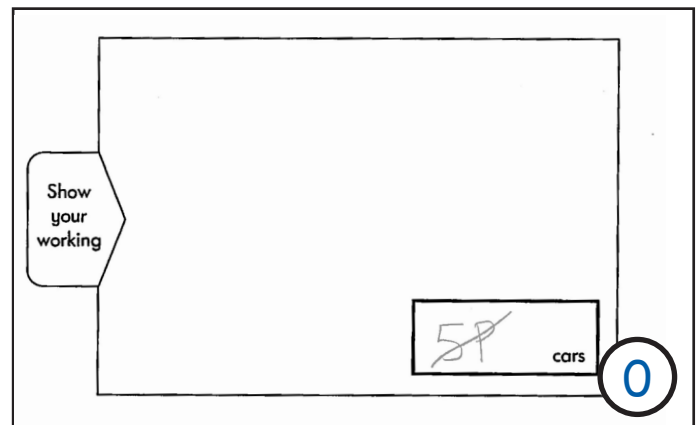


Sean's diagram is correct in that it contains 94 tallies, which indicates $76 + 18$. Next, he subtracted 35 correctly by crossing them off. However, he has made an error when counting the remaining tallies. He is awarded **one mark** for his complete, correct method. Daisy, in comparison, has also used a pictorial method, but has only drawn 90 tallies instead of 94. She has crossed off 35 of these tallies accurately. However, because she drew only 90 tallies at the start, we cannot be sure of her first step and must consider her method incorrect. Therefore, Daisy is awarded **no marks**.

Mia: 1 mark



Anton: 0 marks



Mia has shown a complete, correct method. She has written the correct answer in the answer box, but has crossed it out and replaced it with the incorrect answer 58. Consequently she can only be awarded **one mark** for her method. Anton has also written the correct answer of 59 and then crossed it out. Because he has crossed it out, we must ignore it. Since he has not shown his method, **no marks** are awarded.

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