2026 national curriculum tests

Key stage 2

Mathematics test mark schemes

Paper 1: arithmetic
Paper 2: reasoning
Paper 3: reasoning

Standards & Testing Agency

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1. Introduction

The Standards and Testing Agency (STA) is responsible for the development and delivery of key stage 1 and 2 statutory and optional tests. STA is an executive agency of the Department for Education.

The 2026 tests assess the national curriculum. This test has been developed to meet the specification set out in the test framework[1] for mathematics at key stage 2.

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

Key stage 2 tests are marked by external markers, who receive training to ensure the mark schemes are applied consistently and fairly. The mark schemes are provided to show teachers how the tests are marked. The pupil examples are based on responses gathered from the test trialling process.

Scaled score conversion tables are not included in this document. Conversion tables will be produced as part of the standards maintenance process. Scaled score conversion tables[2] for the 2026 tests will be published in July 2026. The standards confirmation meeting will take place in July 2026.

2. Structure of the test

The key stage 2 mathematics test comprises:

- Paper 1: arithmetic (40 marks)
- Paper 2: reasoning (35 marks)
- Paper 3: reasoning (35 marks)

3. Content domain coverage

The 2026 test meets the specification in the test framework. Table 1 sets out the areas of the content domain that are assessed in Papers 1, 2 and 3.

The references are taken from the test framework. A question assessing 4C7, for example, sets out to 'multiply two-digit and three-digit numbers by a one-digit number using a formal written layout' and is taken from the year 4 programme of study.

1 www.gov.uk/government/publications/key-stage-2-mathematics-test-framework
2 www.gov.uk/guidance/scaled-scores-at-key-stage-2

Table 1: Content domain coverage of the 2026 key stage 2 mathematics test

Where 2 or more references are given, the primary reference is given first.

Paper 1: arithmetic	
Qu.	**Content domain reference**
1	3C2
2	4C2
3	4C6b
4	3C7
5	4C2
6	4C6a
7	4C2
8	4C6b
9	3N2b
10	6N3
11	4F4
12	5C7b
13	5F10
14	3C7
15	4C7
16	6F5a
17	5F5
18	3C6
19	5F4
20	6C7a
21	5C6b
22	5F10
23	6F9a
24	6F9b
25	6C7b
26	6F5b
27	6C7a
28	6R2
29	5C5d
30	6R2
31	6C7b
32	6F4
33	6F9b
34	6R2
35	6F4
36	5F5

Paper 2: reasoning	
Qu.	**Content domain reference**
1	4N2a/4N3a
2	4S1
3	3G3b
4	5S1/4C4
5	4M9/4F10b
6	4C8
7	5P2
8	6M7b/5M7b
9	5C8a/5C6a
10	6R1/4C8
11	4M7a
12	5N4
13	6F11
14	6C8/5M9a
15	5C6a/5F10
16a	5F3
16b	6F3
17	6M6
18	6G4b/5G4b
19	6M9
20	6A4
21	6R4/6F9c
22a	5N5/4N4a
22b	6N5/4N4a
23	6S1/5F12

Paper 3: reasoning	
Qu.	**Content domain reference**
1	4F8
2	3S2/3M4f
3a	5N5
3b	5N5
4	3C2/3C4
5	4M9/4F10b
6	6F3
7	4N6/4C6a/3C8
8a	5S2
8b	5S2
9	4F7
10	3C4/4N4b
11	6C7a/6C8
12a	4P3a
12b	4P3b
13a	6R1
13b	6R1
14	5C8b/5C8a
15	6C8/5C7a
16	5C5a/5C5c
17	5F6a
18	6R4
19a	6A5
19b	6A5
20a	6G4a
20b	6G4b
21	6M7b/5M7b/5C7a

4. Explanation of the mark schemes

The marking information for each question is set out in the form of tables (sections 7, 8 and 9).

The purpose of the mark scheme is to define the acceptable answers for each question within the test. Answers other than those listed may be acceptable if they meet the marking criteria.

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 credit can be given for an appropriate 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 guidance, such as the range of acceptable answers, where necessary. This column may also provide details of specific types of answer which are unacceptable. For most questions, there will be unacceptable answers that are not listed.

5. General marking guidance

5.1 Applying the mark schemes

To ensure consistency of marking, the most frequent procedural queries are listed in section 5.2 along with the action the marker will take. This is followed by further guidance in section 6 relating to marking questions involving money, time and other measures. Unless otherwise specified in the mark scheme, markers will apply these guidelines in all cases.

Recording marks awarded

Pupils' test papers are scanned so that marking can be conducted on screen by trained markers.

For each question, markers record the award of 3, 2, 1 or 0 marks as appropriate, according to the mark scheme criteria. There is provision in the software to record questions not attempted. The software aggregates marks automatically.

5.2 General marking principles

Table 2: General marking principles for all papers

1. The answer does not closely match any of the examples given in the mark scheme.	Markers will use their judgement to decide whether the answer corresponds with details in the 'Requirement' column of the mark scheme. Reference will also be made to the 'Additional guidance' column.
2. The answer is provided 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 for explanations or for presenting an answer.
3. The correct answer or working has been crossed out or erased and not replaced.	The mark(s) will not be awarded for crossed-out or erased answers or working.
4. More than one answer is given.	If all answers given are correct (or a range of answers is given, all of which are correct), the mark(s) will be awarded unless the mark scheme states otherwise. If both correct and incorrect answers are given, the mark(s) will not be awarded unless the mark scheme states otherwise.
5. No answer is given in the expected place, but the correct answer is given elsewhere.	Where a pupil has unambiguously indicated the correct answer, the mark(s) will be awarded. In particular, where a word or number is expected, a pupil may meet the requirement by annotating a graph or labelling a diagram elsewhere in the question.
6. The answer is correct, but the wrong working is shown.	A correct final answer will be awarded the mark(s).
7. The pupil has used alternative notation for a decimal point in a number.	No alternative notation is accepted as representing a decimal point in a number, for example, a comma. Refer to section 6 for guidance on marking specific types of question.
8. The pupil has used a symbol as a thousands separator.	If the pupil has used a comma as a thousands separator (positioned either correctly or incorrectly) and the digits are in the correct order, then the mark(s) will be awarded. If any other symbol, for example, a decimal point or apostrophe, is used, the mark(s) will not be awarded, although method marks may still be available.

9. The answer in the answer box is wrong due to a transcription error.	A transcription error occurs when a pupil miscopies their answer from the end of their working into the answer box. Each part (integer, numerator, denominator) of a mixed number is considered separately when applying transcription error rules. Where appropriate, detailed guidance will be given in the mark scheme. For questions with no guidance, marks will only be awarded for a transcription error if the wrong answer is due to: • transposed digits in a number (for example, 243 is written as 324) **OR** • one digit changed in a number of 4 or more digits (for example, 2,345 is written as 2,845) The mark(s) will not be awarded for any other transcription error including: • a decimal point positioned incorrectly (for example, 12.34 is written as 1.234 or 1234) • a change by a power of 10 (for example, 200 is written as 20 or 2,000) • a digit added or removed (for example, 123,456 written as 1233,456 or 12,456) • a negative sign added or removed
10. The answer is numerically or algebraically 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, for example, for $\square = 536 - 30$, the answer 500 + 6 will not be awarded the mark. For integer answers, for example, 20, the answer $\frac{20}{1}$ will be awarded the mark; $\frac{80}{4}$ will not be awarded the mark. For decimal answers that include recurring digit(s), there must be an unambiguous indication of the recurring digit(s). For example, for $\frac{1}{6}$, $0.1\dot{6}$ or $0.1\overline{6}$ will be awarded the mark and for $\frac{1}{7}$, $0.\dot{1}42857\dot{}$ or $0.\overline{142857}$ will be awarded the mark. For fraction answers that can be expressed as a mixed number, the fraction paired with the integer must be a proper fraction, for example, $1\frac{6}{4}$ will not be awarded the mark although method marks may still be available. Where alternative responses are acceptable, this will be indicated in the 'Additional guidance' column.

Table 3: General marking principles for paper 1 only (arithmetic)

11. The answer in the answer box is wrong due to a misread of numbers given in the question.	Misreads are not allowed in Paper 1; the mark(s) will not be awarded.
12. The pupil has not recorded their working beneath the given long multiplication or long division.	If a pupil carries out their working somewhere on the page other than beneath the given question as expected, then the pupil must start by rewriting the original question in order for it to be considered as a formal method. Please note that the operation sign does not need to be given for long multiplication, provided the pupil's working shows the intention to multiply.
13. The answer to the long division question expresses a remainder.	If a pupil reaches an integer answer using a formal method with no more than one arithmetic error, for example, 25, then the mark(s) will be awarded for 25 r0 or 25.0, but the mark(s) will not be awarded for an answer of 250 For answers with a remainder, the remainder must be expressed correctly. If a pupil shows a remainder that is the same size as the divisor or larger, for example, a remainder of 28 or 29 when dividing by 28, the mark(s) will not be awarded because the method is incomplete. If a pupil reaches a non-integer answer using a formal method with no more than one arithmetic error, for example, when dividing by 28, the pupil reaches the answer 6 r14, then the mark(s) will be awarded for $6\frac{14}{28}$ or 6.5, but the mark(s) will not be awarded for 6 r$\frac{14}{28}$ or 6.14 or 614
14. The long division method involves subtracting chunks of different sizes.	If a pupil's formal method involves subtracting chunks, it is not necessary to show a separate addition of the chunks. If the answer is not the correct total for their chunks, then that is treated as one arithmetic error. A method is considered as chunking when the size of the chunks are shown alongside the algorithm. It should be noted that this method will only be accepted if all chunks are of different sizes.

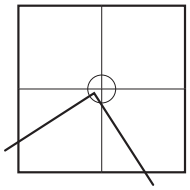
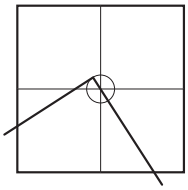
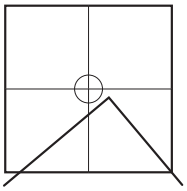
Table 4: General marking principles for papers 2 and 3 only (reasoning)

15. More than one method is given.	If a pupil gives more than one method, then the intended method is taken as the one which leads to the answer in the answer box or an identified answer elsewhere. If no answer is given, then all methods must be appropriate for the method mark(s) to be awarded.
16. There appears to be a misread of numbers or information given in the question that affects the pupil's working and/or explanation.	This 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 243 is misread and written as 248, both numbers may be regarded as comparable in difficulty. However, if 243 is misread and written as 245 or 240, the misread number may be regarded as making the question easier. The misread of a number may affect the award of marks. Any misread number must be seen, not implied. Where appropriate, detailed guidance will be given in the mark scheme. If no guidance is given, markers will examine each case to decide whether the mark(s) will be awarded. The mark(s) will not be awarded if: • it is a **ONE-mark** question • there is more than one misread number in a question • the mathematics is simplified • it is an 'explain' question • it is a misread of other information (not numbers) • the misread number is the same as any other number in the question For **TWO-mark** questions that have a method mark, one mark will be awarded if an appropriate method is correctly followed through with the misread number to give the correct follow-through answer, provided the mathematics has not been simplified. For **THREE-mark** questions, refer to the additional guidance.
17. A misread or an arithmetic error results in an answer with multiple decimal places.	In some instances, a misread or an arithmetic error in a method leads to an answer with one or more decimal places. In such cases, the method mark(s) will be awarded for an answer that is correctly truncated or rounded provided the method is appropriate and the additional guidance does not specify otherwise. For example, 1.2345 is truncated to 1.2

18. The pupil has reversed values within a calculation involving subtraction or division.	When values within the calculation are reversed, the mark(s) will only be awarded when the answer corresponds to the correct calculation. For example, if the correct calculation is 12 ÷ 4, the method mark(s) may be awarded for 4 ÷ 12 = 3, but not for an answer other than 3 Reversed values within a calculation are not acceptable in 'explain' questions.
19. The pupil omits an operation sign within their working.	If the correct sign of +, – , ×, or ÷ for an arithmetic operation is missing, then the mark(s) will only be awarded if the working shown by the pupil is clear enough to indicate that the required operation has been performed. This applies even if the results of the required operation are incorrect. Where carrying or decomposition figures are seen, this is evidence of intention. For example, where the following is seen in working, the layout of the response implies addition or subtraction: 456 123 ——— • if the answer is larger than the greater of the given values, for example, 679, then addition is implied • if the answer is less than the first given value, for example, 323, then subtraction is implied

20. The pupil has used 'an appropriate method'.	For some questions, the mark scheme allows the award of the method mark(s) for 'evidence of an appropriate method', even if the answer is missing or incorrect. Refer to the 'Additional guidance' column where appropriate. For the award of the method mark(s) for an appropriate method, there must be evidence of **all** the steps of the appropriate method (any method that would lead to the correct answer if there were no arithmetic errors and no additional steps). This means that, for every step, either: • the appropriate calculation to be carried out must be shown **OR** • if the calculation has not been written down, the correct answer or correct follow-through answer must be shown Where the calculation shown would lead to a correct final answer, even if the processed numbers do not appear to be taken from the question, a method mark may be awarded unless the mark scheme specifies otherwise.
21. The pupil has used a trial and improvement method.	'Trial and improvement' is regarded as an acceptable method, unless the mark scheme states otherwise. For a 'trial and improvement' method to be awarded the method mark(s): • there must be at least 3 trials, carried out correctly, which all reduce the range in which the answer is known to lie • there can be additional trials, which are correctly or incorrectly carried out, and which may not reduce the range in which the answer is known to lie • a final answer is not needed, unless the mark scheme states otherwise

22. The answer in the answer box is wrong but the correct answer is reached in the working.	Extra working occurs when a pupil writes the correct answer in their working, and then continues to process the information further. When the answer in the answer box is wrong and does not match the answer reached in the working, it is impossible to know why the pupil has written a different answer and it is assumed that extra working has occurred. GMP 9 on transcription errors still applies. If the extra working does not contradict the pupil's appropriate method, the method mark(s) will be awarded. If the extra working contradicts the pupil's appropriate method, the method mark(s) will not be awarded.
23. The pupil miscopies a value from one part of their method into the next part.	There will be instances when a pupil reaches a value in their working, then restarts from a different value. The mark(s) will not be awarded if: • it is a **ONE-mark** question • there is more than one miscopy in the working • the miscopy does not follow transcription error rules (see GMP 9) The method mark(s) will only be awarded if an appropriate method is correctly shown using the miscopied number (which must follow transcription error rules).
24. The correct answer is embedded in the working.	An embedded answer occurs when a pupil shows the correct answer within their working but then selects the wrong answer from their working as their final answer or leaves the answer box blank. For example, if a pupil shows $2.5 \times 6 = 3 \times 5$ in the last line of their working and writes 5 in the answer box, whereas the correct answer is 3, then this will affect the award of marks. Where appropriate, detailed guidance will be given in the mark scheme. If no guidance is given, markers will examine each case to decide whether the mark(s) will be awarded. For **ONE-mark** questions, the mark will not be awarded. For **TWO-mark** questions that have a method mark, one mark will be awarded, provided the pupil does not give redundant extra working that contradicts work already done or which adds to their appropriate method. For **THREE-mark** questions, refer to the additional guidance.

25. The phrase 'sight of' is used in the mark scheme.	For some questions, the mark scheme allows the mark(s) to be awarded for sight of a particular number or numbers within a method. Such numbers are the correct answers to partial steps within a method.
26. The answer correctly follows through from earlier incorrect work.	'Follow-through' marks for an answer will only be awarded when specifically stated in the mark scheme.
27. The pupil has drawn lines which do not meet at the correct point.	Where the mark scheme states that 'slight inaccuracies in drawing' should be accepted, this means that the mark(s) will be awarded for responses marked within or on a circle of radius 2mm with its centre at the correct point.  within the circle – accepted  on the circle – accepted  outside the circle – not accepted

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6. Marking specific types of question: summary of additional guidance

6.1 Answers involving money

	Accept	Do not accept
Where the £ sign is given, for example: £3.20, £7 £	£3.20 £7 £7.00 Any unambiguous indication of the correct amount, for example: £3.20p £3 20 pence £3 20 £3-20 £3:20 £3;20	Incorrect placement of pounds or pence, for example: £320 £320p Incorrect placement of decimal point or incorrect use or omission of 0 or use of comma as a decimal point, for example: £3.2 £3 200 £32 0 £3-2-0 £3,20
Where the p sign is given, for example: 40p p	40p Any unambiguous indication of the correct amount, for example: £0.40p 0 40p £0-40p 0:40p £0;40p	Incorrect or ambiguous use of pounds or pence or use of comma as a decimal point, for example: 0.40p £40p £0,40p

	Accept	Do not accept
Where a unit is not given, for example: £3.20, 40p ☐	£3.20 40p 320p £0.40 Any unambiguous indication of the correct amount, for example: £3.20p £0.40 pence £3 20 pence £0 40p £3 20 £0-40 £3-20 £0:40 £3:20 £0;40 £3;20 £.40 3.20 0.40 320 40 3 pounds 20	Incorrect or ambiguous use of pounds or pence or use of comma as a decimal point, for example: £320 £40 £320p £40p £3.2 0.4 3.20p 0.40p £3,20 0,40 £0,40p

6.2 Answers involving time

	Accept	Do not accept
A time interval, for example: 2 hours 30 minutes	2 hours 30 minutes Any unambiguous, correct indication, for example: (0)2 h 30 150 minutes (0)2 h 30 min 150 (0)2 30 2.5 hours (0)2-30 $2\frac{1}{2}$ hours Digital electronic time, for example: (0)2:30 (0)2;30	Incorrect or ambiguous time interval or use of comma as a decimal point, for example: 2.30 230 2.3 2.30 min 2.3 hours 2,5 hours 2.3 h 2,30 2 h 3 1 h 90 min

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	Accept	Do not accept
A specific time, for example: 8:40 am, 17:20	(0)8:40 am (0)8:40 twenty to nine Any unambiguous, correct indication, for example: (0)8.40 (0)8;40 0840 (0)8 40 (0)8-40 Unambiguous change to 12 or 24-hour clock, for example: 17:20 as 5:20 pm or 17:20 pm	Incorrect time, for example: 8.4 am 8.40 pm Incorrect placement of separators, spaces, etc. or incorrect use or omission of 0 or use of a comma as a decimal point, for example: 840 8:4:0 8.4 084 8,40

6.3 Answers involving measures

	Accept	Do not accept
Where units are given, for example: 8.6 kg kg m l	8.6 kg Any unambiguous indication of the correct measurement, for example: 8.60 kg 8.6000 kg 8 kg 600 g	Incorrect or ambiguous use of units or use of comma as a decimal point, for example: 8600 kg 8 kg 600 8,60 kg 8,6000 kg

If a pupil gives an answer with a unit different from the unit in the answer box, then their answer must be equivalent to the correct answer provided, unless otherwise indicated in the mark scheme.

If a pupil leaves the answer box empty but writes the answer elsewhere on the page without any units, then that answer is assumed to have the units given in the answer box, subject to the conditions listed above.

7. Mark schemes for Paper 1: arithmetic

Qu.	Requirement	Mark	Additional guidance
1	414	1m	
2	6,165	1m	
3	67	1m	
4	69	1m	
5	3,600	1m	
6	11	1m	
7	2,092	1m	
8	70	1m	
9	1,994	1m	
10	30,000	1m	
11	$1\frac{4}{5}$ **OR** $\frac{9}{5}$	1m	Accept equivalent mixed numbers, fractions or the **exact** decimal equivalent, i.e. 1.8
12	1,600	1m	
13	55.892	1m	
14	18	1m	
15	612	1m	
16	$\frac{4}{45}$	1m	Accept equivalent fractions or the **exact** decimal equivalent, e.g. $\frac{8}{90}$ or $0.0\dot{8}$ (accept any unambiguous indication of the recurring digits). **Do not** accept rounded or truncated decimals.
17	125	1m	
18	96	1m	

Qu.	Requirement	Mark	Additional guidance
19	$\frac{7}{10}$	**1m**	Accept equivalent fractions or the **exact** decimal equivalent, e.g. $\frac{14}{20}$ or 0.7
20	Award **TWO** marks for the correct answer of 21,022 If the answer is incorrect, award **ONE** mark for the formal method of long multiplication with no more than **ONE** arithmetic error, e.g. • 457 × 46 = 2742, 18280, 20022 (*error*) **OR** • 457 × 46 = 2744 (*error*), 18280, 21024	**Up to 2m**	Working must be carried through to reach a final answer for the award of **ONE** mark. **Do not** award any marks if the error is in the place value, e.g. the omission of the zero when multiplying by tens. 457 × 46 = 2742, 1828 (*place value error*), 4570
21	9,809,000	**1m**	
22	7.86	**1m**	
23	2.024	**1m**	
24	15.12	**1m**	

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Qu.	Requirement	Mark	Additional guidance
25	Award **TWO** marks for a correct answer of 14 If the answer is incorrect, award **ONE** mark for the formal methods of division with no more than **ONE** arithmetic error, e.g. • long division algorithm, e.g. 14 r2 51 ⟌ 714 – 51(0) 204 – 202 (*error*) 2 **OR** 13 (*error*) 51 ⟌ 714 – 510 10 × 51 204 – 153 3 × 51 51 51 1 × 51 0 • short division algorithm, e.g. 13 (*error*) 51 ⟌ 71^{20}4	**Up to 2m**	Working must be carried through to reach a final answer for the award of **ONE** mark. Short division methods **must** be supported by evidence of appropriate carrying figures to indicate the use of a division algorithm and be a complete method. The carrying figure must be less than the divisor.
26	$\frac{3}{12}$	**1m**	Accept equivalent fractions or the **exact** decimal equivalent, e.g. $\frac{1}{4}$ or 0.25

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Qu.	Requirement	Mark	Additional guidance
27	Award **TWO** marks for a correct answer of 362,610 If the answer is incorrect, award **ONE** mark for the formal method of long multiplication with no more than **ONE** arithmetic error, e.g. • 6715 × 54 = 26860 + 335750 = 362510 (*error*) **OR** • 6715 × 54 = 27860 (*error*) + 335750 = 363610	**Up to 2m**	Working must be carried through to reach a final answer for the award of **ONE** mark. **Do not** award any marks if the error is in the place value, e.g. the omission of the zero when multiplying by tens. • 6715 × 54 = 26860 + 33575 (*place value error*) = 60435
28	696	**1m**	**Do not** accept 696%
29	16	**1m**	
30	388	**1m**	**Do not** accept 388%

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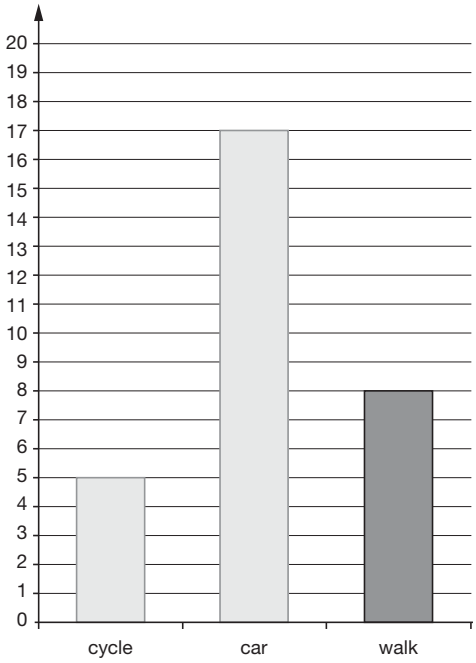
Qu.	Requirement	Mark	Additional guidance
31	Award **TWO** marks for a correct answer of 136 If the answer is incorrect, award **ONE** mark for the formal methods of division with no more than **ONE** arithmetic error, e.g. • long division algorithm, e.g. 135 r4 16 | 2176 – 16(00) 57(6) – 48(0) 96 92 *(error)* 4 **OR** 135 *(error)* 16 | 2176 – 1600 100 × 16 576 – 480 30 × 16 96 64 4 × 16 32 32 2 × 16 0	**Up to 2m**	Working must be carried through to reach a final answer for the award of **ONE** mark.
	• short division algorithm, e.g. 135 (*error*) 16 | $21^{5}7^{9}6$		Short division methods **must** be supported by evidence of appropriate carrying figures to indicate the use of a division algorithm and be a complete method. The carrying figure must be less than the divisor.

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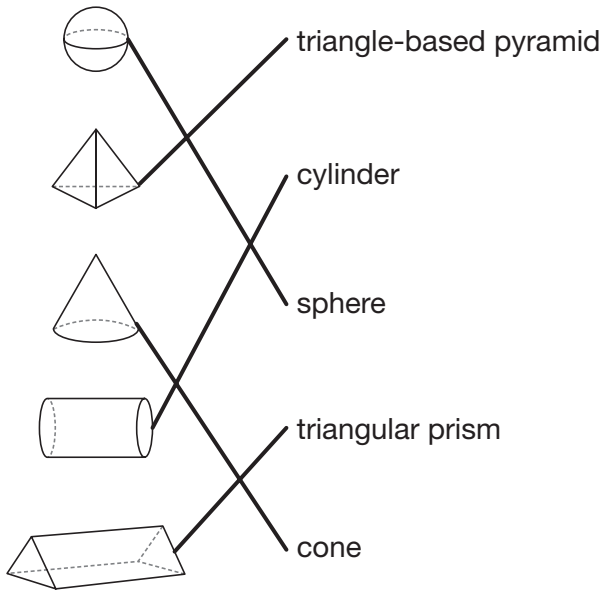
Qu.	Requirement	Mark	Additional guidance
32	$3\frac{3}{8}$ **OR** $\frac{27}{8}$	**1m**	Accept equivalent fractions or the **exact** decimal equivalent, i.e. 3.375
33	2.16	**1m**	
34	442	**1m**	**Do not** accept 442%
35	$\frac{9}{20}$	**1m**	Accept equivalent fractions or the **exact** decimal equivalent, e.g. $\frac{18}{40}$ or 0.45
36	175	**1m**	**Do not** accept $\frac{350}{2}$

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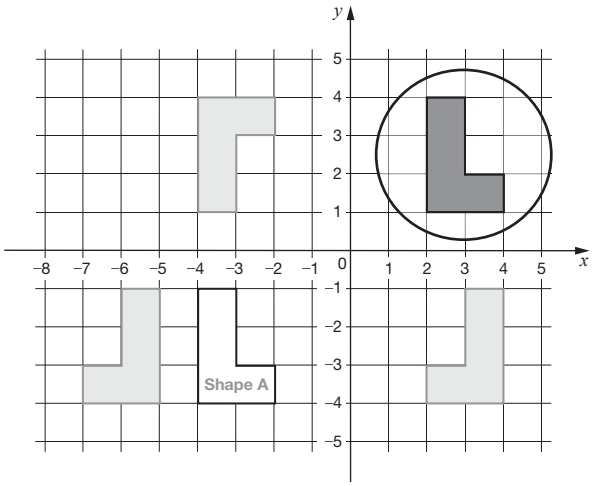
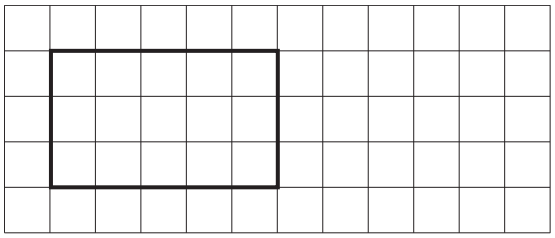
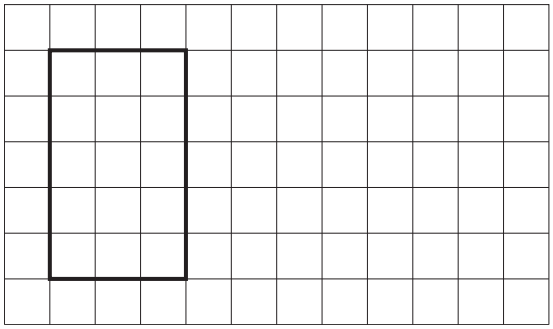
8. Mark schemes for Paper 2: reasoning

Qu.	Requirement	Mark	Additional guidance
1	Award **ONE** mark for the correct order, as shown: 1,005 (**least**) 1,050 1,500 1,505	**1m**	Misreads and miscopies are **not** allowed. Accept numbers in reverse order **AND** the label 'least' changed to follow suit.
2	Award **ONE** mark for drawing the bar in the range of 7.5 – 8.5 pupils, e.g. 	**1m**	Ignore the width of the bar.

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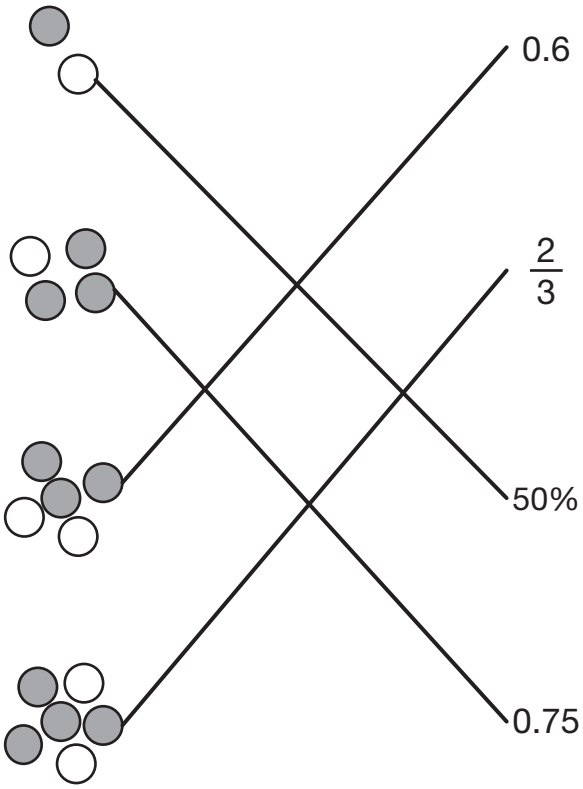
Qu.	Requirement	Mark	Additional guidance
3	Award **ONE** mark for all five shapes matched correctly, as shown:  	**1m**	Lines need not touch the shapes or shape names, provided the intention is clear. **Do not** accept any shape that has been matched to more than one shape name.
4	114	**1m**	
5	(£)3.21	**1m**	Refer to section 6.1 on pages 14 and 15 for additional guidance on marking answers involving money.
6	Award **TWO** marks for the correct answer of 74 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 14 + 1 = 15 14 + 15 = 29 15 × 3 = 45 29 + 45	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark. Misreads are **not** allowed.

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Qu.	Requirement	Mark	Additional guidance
7	Award **ONE** mark for the correct shape circled, as shown: 	1m	Accept alternative unambiguous positive indication of the correct answer.
8	Award **ONE** mark for a rectangle drawn correctly with an area of 15 square units, e.g.  **OR** 	1m	Accept slight inaccuracies in drawing, provided the intention is clear. Shape need not be shaded for the award of **ONE** mark. See page 13 for guidance.

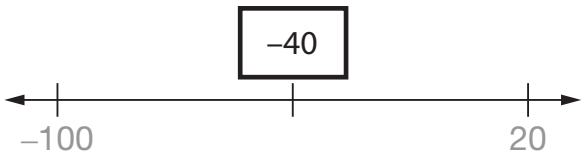
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Qu.	Requirement	Mark	Additional guidance
9	Award **ONE** mark for two boxes ticked correctly, as shown: All multiples of 9 are multiples of 6 ☐ All multiples of 20 are multiples of 10 ☑ All multiples of 5 are multiples of 10 ☐ All multiples of 10 are multiples of 5 ☑	**1m**	Accept alternative unambiguous positive indication of the correct answer.
10	Award **TWO** marks for the correct answer of 48 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 30 ÷ 5 = 6 6 × 3 = 18 30 + 18 Award **ONE** mark for sight of 18 (as evidence of finding the number of red beads).	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark.
11	9	**1m**	
12	Award **TWO** marks for three boxes completed correctly, as shown: to the nearest 10: **349,910** to the nearest 100: **349,900** to the nearest 1,000: **350,000** If the answer is incorrect, award **ONE** mark for any two boxes completed correctly.	**Up to 2m**	

Qu.	Requirement	Mark	Additional guidance
13	Award **TWO** marks for all four groups matched correctly, as shown:  Award **ONE** mark for any two groups matched correctly.	**Up to 2m**	Lines need not touch the groups or proportions, provided the intention is clear. **Do not** accept any group that has been matched to more than one proportion.
14	Award **TWO** marks for the correct answer of (£)1.49 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 36p × 3 = 108p £4.06 – 108p = £3.98 (*error*) £3.98 ÷ 2 **OR** • 36p × 3 = £1.18 (*error*) £4.06 – £1.18 = £2.88 £2.88 ÷ 2 = £1.44 Award **ONE** mark for sight of (£)2.98 **OR** 298(p) (as evidence of finding the total cost of the two pineapples).	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark. Accept for **ONE** mark an answer of £149, £149p or £1,49 as evidence of an appropriate method. Refer to section 6.1 on pages 14 and 15 for additional guidance on marking answers involving money.

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Qu.	Requirement	Mark	Additional guidance
15	Award **TWO** marks for three boxes completed correctly, as shown: 24 ÷ **10** = 2.4 24 ÷ **20** = 1.2 2.4 ÷ **2** = 1.2 If the answer is incorrect, award **ONE** mark for any two boxes completed correctly.	**Up to 2m**	
16a	Award **ONE** mark for three correct fractions circled, as shown: $\frac{5}{9}$ $\frac{4}{9}$ $\frac{7}{9}$ $\frac{8}{9}$ $\frac{3}{9}$	**1m**	Accept alternative unambiguous positive indication of the correct answer.
16b	Award **ONE** mark for three correct fractions circled, as shown: $\frac{5}{8}$ $\frac{3}{8}$ $\frac{2}{8}$ $\frac{6}{8}$ $\frac{4}{8}$	**1m**	Accept alternative unambiguous positive indication of the correct answer.
17	200	**1m**	
18	55	**1m**	
19	Award **TWO** marks for the correct answer of 415 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 2.49 × 1000 = 2490 2490 ÷ 6 **OR** • 2.49 ÷ 6 = 0.414 *(error)* 0.414 × 1000	**Up to 2m**	For the award of **TWO** marks, the answer must be in grams. Answer need not be obtained for the award of **ONE** mark. Accept for **ONE** mark 0.415(g) in the answer box **OR** as the final answer in the working and answer box blank. Conversion of units must show an intention to multiply by 1000 **OR** show a correctly converted value. If the pupil's evaluation to their decimal division is a decimal with a remainder, the method is **not** assured and a mark is not awarded.

Qu.	Requirement	Mark	Additional guidance
20	Award **TWO** marks for three rows completed correctly, as shown: 5p | 2p 1 | 18 **3** | **13** **5** | **8** **7** | **3** If the answer is incorrect, award **ONE** mark for any two rows completed correctly.	**Up to 2m**	Rows may be completed in any order.
21	Award **TWO** marks for the correct answer of 5.25 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 3.5 ÷ 2 = 1.85 *(error)* 1.85 × 3 **OR** • 3 × 3.5 = 10.5 10.5 ÷ 2 Award **ONE** mark for sight of 1.75 or equivalent (as evidence of finding one-fifth of the paint in litres).	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark. Misreads are **not** allowed. If the pupil's evaluation to their decimal division is a decimal with a remainder, the method is **not** assured and a mark is not awarded. Award **ONE** mark for a final answer of 5,250
22a	Award **ONE** mark for the number written correctly, as shown:  	**1m**	**Do not** accept 4–
22b	Award **ONE** mark for the number written correctly, as shown:  	**1m**	**Do not** accept 40–

Qu.	Requirement	Mark	Additional guidance
23	Award **TWO** marks for the correct answer of 60 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 30% + 20% = 50% $\frac{1}{4} = 25\%$ $\frac{1}{5} = 20\%$ 50% + 25% + 20% = 95% 95% + 5% = 100% 5% = 3 children 100 ÷ 5 × 3 **OR** • $30\% = \frac{3}{10}$ $20\% = \frac{1}{5}$ $\frac{1}{5} + \frac{1}{4} + \frac{3}{10} + \frac{1}{5}$ $\frac{4}{20} + \frac{5}{20} + \frac{6}{20} + \frac{4}{20} = \frac{19}{20}$ $\frac{20}{20} - \frac{19}{20} = \frac{1}{20}$ $\frac{1}{20}$ = 3 (children) 20 × 3 Award **ONE** mark for sight of 5% **OR** 0.05 **OR** $\frac{1}{20}$ **OR** equivalent fraction (as evidence of finding the correct proportion of those who favoured swimming).	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark. Any conversion of fractions, decimals or percentages must be a correct method of conversion seen **OR** a correct conversion for the award of **ONE** mark.

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9. Mark schemes for Paper 3: reasoning

Qu.	Requirement	Mark	Additional guidance
1	Award **ONE** mark for two boxes ticked correctly, as shown: 1.03 ☐ 1.2 ☑ 0.95 ☐ 1.51 ☑ 0.15 ☐	1m	Accept alternative unambiguous positive indication of the correct answer.
2	75 minutes **OR** 1 hour 15 minutes	1m	Refer to section 6.2 on page 15 for additional guidance on marking answers involving time intervals.
3a	13	1m	
3b	–1	1m	**Do not** accept 1–
4	Award **ONE** mark for both boxes completed correctly, as shown: 7 **0** 8 – 1 6 **2** 5 4 6	1m	

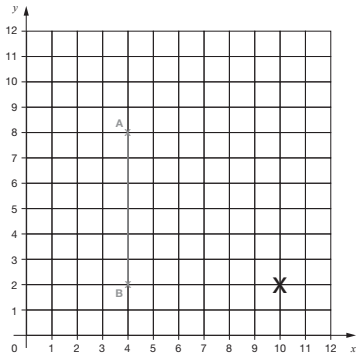
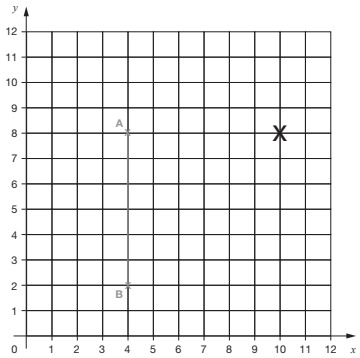
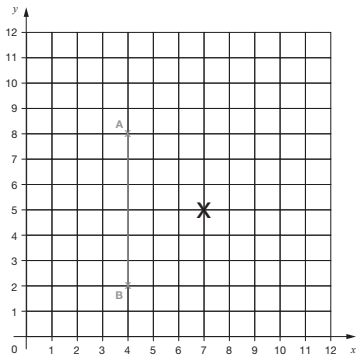
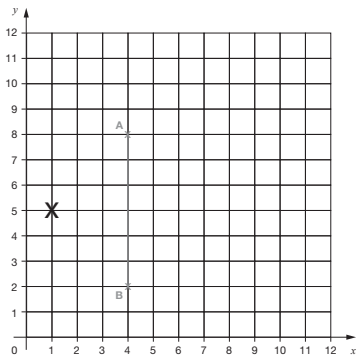
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Qu.	Requirement	Mark	Additional guidance
5	Award **TWO** marks for the correct answer of (£)3.92 If the answer is incorrect, award **ONE** mark for evidence of an appropriate, complete method, e.g. • 6 × 28p = 164 (*error*) 7 × 32p = 224 £1.64 + 224 = £3.88 Award **ONE** mark for sight of: • 168(p) **AND** 224(p) **OR** • (£)1.68 **AND** (£)2.24 **OR** • Mixed units e.g. (£)1.68 **AND** 224(p)	**Up to 2m**	Accept for **ONE** mark an answer of £392, £392p, £3,92 as evidence of an appropriate method. Refer to section 6.1 on pages 14 and 15 for additional guidance on marking answers involving money. Within an appropriate, complete method, the final answer must be provided using acceptable notation as in accordance with section 6.1.
6	Award **ONE** mark for the correct order, as shown: $\frac{9}{8}$ $1\frac{3}{8}$ $1\frac{5}{8}$ $\frac{15}{8}$ least	**1m**	Misreads and miscopies are **not** allowed. Accept equivalent fractions and exact decimal equivalents provided they are given in the correct order. Accept numbers in reverse order **AND** the label 'least' changed to follow suit.
7	9	**1m**	
8a	14	**1m**	
8b	March	**1m**	Accept alternative unambiguous positive indications of the correct month, e.g. Mar.

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Qu.	Requirement	Mark	Additional guidance
9	Award **ONE** mark for an explanation that demonstrates why rounding 3.7 to the nearest whole number is not 3, e.g. • Olivia is wrong because if the number ends in 5,6,7,8 or 9 you round up. • If the number ends in 7 you round up to the next whole number. • 3.7 is greater than 3.5, therefore you round up. **OR** An explanation that corrects Olivia's statement, e.g. • 3.7 rounds up to 4 (not 3) • 3.7 is closer to 4 than 3 • 3.7 is more than 3.5, therefore it is closer to 4 (not 3)	1m	**Do not** accept responses that restate the question, e.g. • 3.7 rounded to the nearest whole number is not 3 **Do not** accept vague or incomplete explanations, e.g. • 3 is much smaller than 3.7 • 3.7 is nearer to the whole number • 3.7 is more than 3.5 **Do not** accept explanations which include incorrect mathematics or incorrect information that is relevant to the explanation, e.g. • 3.7 rounds down to 4
10	Award **ONE** mark for two correct numbers circled, as shown: (16) 17 (25) 28	1m	Accept alternative unambiguous positive indication of the correct answer.
11	Award **TWO** marks for the correct answer of 1,684 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 14 × 46 = 544 (*error*) 10 × 62 = 620 6 × 70 = 420 544 + 620 + 420 Award **ONE** mark for sight of 644 (as evidence of 14 × 46 completed correctly).	Up to 2m	Answer need not be obtained for the award of **ONE** mark.

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Qu.	Requirement	Mark	Additional guidance
12a	(4,2)	**1m**	
12b	Award **ONE** mark for a cross drawn on the grid at the correct co-ordinate for point C, e.g. (10,2)  **OR** (10,8)  **OR** (7,5)  **OR** (1,5) 	**1m**	The right-angled triangle does **not** need to be completed for the award of the mark. Accept alternative unambiguous positive indication of the correct answer.

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Qu.	Requirement	Mark	Additional guidance
13a	150	**1m**	
13b	450	**1m**	
14	Award **ONE** mark for the calculation completed correctly, e.g. 126 ÷ **1** = **18** × 7 **OR** 126 ÷ **2** = **9** × 7 **OR** 126 ÷ **3** = **6** × 7 **OR** 126 ÷ **9** = **2** × 7	**1m**	The correct numbers can be completed in any order, e.g. 1 **AND** 18 **OR** 18 **AND** 1
15	Award **TWO** marks for the correct answer of 250 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 1,250 × 8 = 10,000 10,000 ÷ 40 **OR** • 1,250 × 8 = 9,750 (*error*) 9,750 ÷ 40	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark.

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Qu.	Requirement	Mark	Additional guidance
16	Award **TWO** marks for the three numbers completed correctly, as shown: a **prime** number **2** **3** a **square** number **3** **6** a **multiple** of 7 **6** **3** If the answer is incorrect, award **ONE** mark for any two numbers completed correctly.	**Up to 2m**	Also accept a single digit prime number.
17	Award **TWO** marks for three boxes ticked correctly, as shown: $\frac{1}{2} = 0.5$ ✓ $\frac{2}{5} = 0.2$ ☐ $\frac{7}{10} = 0.07$ ☐ $\frac{9}{20} = 0.45$ ✓ $\frac{27}{100} = 0.27$ ✓ If the answer is incorrect, award **ONE** mark for: • three correct boxes ticked and one incorrect box ticked. **OR** • two correct boxes ticked and no incorrect boxes ticked.	**Up to 2m**	Accept alternative unambiguous positive indication of the correct answer.

Qu.	Requirement	Mark	Additional guidance
18	Award **TWO** marks for the correct answer of (£)48 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 60 ÷ 5 = 13 *(error)* 13 × 4 Award **ONE** mark for sight of (£)12 (as evidence of finding mum's contribution).	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark.

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Qu.	Requirement	Mark	Additional guidance
19a	Award **ONE** mark for one pair of correct values for A and B, i.e. **A =** 11 **B =** 1 **OR** **A =** 9 **B =** 4 **OR** **A =** 5 **B =** 10 **OR** **A =** 3 **B =** 13 **OR** **A =** 1 **B =** 16	**1m**	
19b	Award **ONE** mark for a different pair of correct values for A and B, e.g. A = 3 B = 13 **A =** 1 **B =** 16	**1m**	**Do not** award the mark, if a correct pair of values for A and B has been repeated from the first part of the question (19a). If the answer to (19a) is incorrect, award **ONE** mark for one pair of correct values for A and B given in (19b).

Qu.	Requirement	Mark	Additional guidance
20a	45	**1m**	
20b	135	**1m**	If *a* and *b* are incorrect, award **ONE** mark when $a + b = 180$, where *a* is acute and *b* is obtuse.
21	Award **THREE** marks for the correct answer of 974 If the answer is incorrect, award **TWO** marks for: • evidence of an appropriate, complete method which contains no more than one arithmetic error, e.g $38 \times 27 = 1028$ *(error)* $8 \times 13 \div 2 = 52$ $1028 - 52 = 976$ **OR** • sight of 1026 **AND** 52 (as evidence of the areas of both the rectangle and the triangle calculated correctly). Award **ONE** mark for: • evidence of an appropriate method with more than one error. **OR** • sight of 1026 **OR** 52	**Up to 3m**	Answer need not be obtained for the award of **ONE** mark. A misread of a number may affect the award of marks. No marks are awarded if there is more than one misread or if the mathematics is simplified. **TWO** marks will be awarded for an appropriate method with the misread number followed through correctly. **ONE** mark will be awarded for evidence of an appropriate method using the misread number followed through correctly with no more than one error.

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Key stage 2 mathematics test mark schemes
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