Written Division- Answers

Key Stage 2: 2003 Paper A

1.

| 19 | Award **TWO** marks for the correct answer of 50

If the answer is incorrect, award **ONE** mark for evidence of appropriate working using common units, eg

1500 ÷ 30 = wrong answer | **Up to 2m** | *Calculation must be performed for the award of **ONE** mark.*

Do not *accept 1.5 ÷ 30 as evidence of appropriate working.* |

Key Stage 2: 2003 Paper A

2.

| 22 | 20 | **1m** | |

Key Stage 2: 2005 Paper A

1.

| 5 | 14 | **1m** | |

Key Stage 2: 2007 Paper A

1.

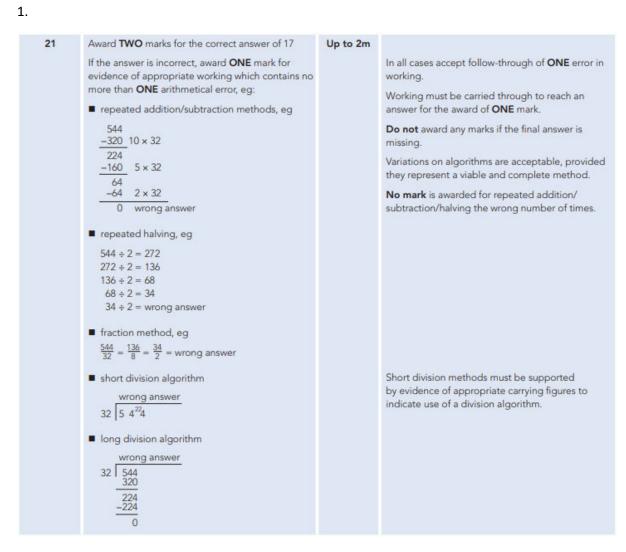| 20	Award **TWO** marks for the correct answer of 24	Up to 2m	
	If the answer is incorrect, award **ONE** mark for evidence of appropriate working which contains no more than **ONE** arithmetical error, eg		*In all cases accept follow through of* **ONE** *error in working.* *Working must be carried through to reach an answer for the award of* **ONE** *mark.* **Do not** *award any marks if the final answer is missing.* *Variations on algorithms are acceptable, provided they represent a viable and complete method.* **No mark** *is awarded for repeated addition / subtraction the wrong number of times.*
	▪ repeated addition / subtraction methods, eg		
	504 −210 10 × 21 294 −210 10 × 21 84 −84 4 × 21 0 wrong answer		
	▪ factor / multiple methods, eg		
	504 ÷ 3 = 168 168 ÷ 7 = wrong answer		
	▪ long division algorithm wrong answer 21)504 420 84 −84 0		
	▪ short division algorithm wrong answer 21)50⁴4		*Short division methods must be supported by evidence of appropriate carrying figures to indicate use of a division algorithm.*

Key Stage 2: 2006 Paper A

1.

| 22 | Award **TWO** marks for the correct answer of 53

If the answer is incorrect, award **ONE** mark for evidence of appropriate working which contains no more than **ONE** arithmetical error, eg:

■ long division algorithm

wrong answer
16⟌848
800
___
48
−48
___
0

■ short division algorithm

wrong answer
16⟌84⁴8

■ repeated addition / subtraction methods, eg

848
−400　　25 × 16
___
448
−400　　25 × 16
___
48
−48　　3 × 16
___
0　　wrong answer

■ repeated halving, eg

848 ÷ 2 = 424

424 ÷ 2 = 212

212 ÷ 2 = 106

106 ÷ 2 = wrong answer | Up to 2m | *In all cases accept follow through of* **ONE** *error in working.*

Calculation must be performed for the award of **ONE** *mark.*

Do not *award any marks if the final answer is missing.*

Variations on algorithms are acceptable, provided they represent a viable and complete method.

Short division methods must be supported by evidence of appropriate carrying figures to indicate use of a division algorithm.

No mark *is awarded for repeated addition / subtraction the wrong number of times.*

No mark *is awarded for repeated halving the wrong number of times.* |

Key Stage 2: 2008 Paper A

1.

13	52	1m	

Key Stage 2: 2009 Paper A

1.

7	16	1m	

Key Stage 2: 2011 Paper A

1.

| 21 | Award **TWO** marks for the correct answer of 17

If the answer is incorrect, award **ONE** mark for evidence of appropriate working which contains no more than **ONE** arithmetical error, eg:

■ repeated addition/subtraction methods, eg

$\begin{array}{r} 544 \\ -320 \quad 10 \times 32 \\ \hline 224 \\ -160 \quad 5 \times 32 \\ \hline 64 \\ -64 \quad 2 \times 32 \\ \hline 0 \quad \text{wrong answer} \end{array}$

■ repeated halving, eg

$544 \div 2 = 272$
$272 \div 2 = 136$
$136 \div 2 = 68$
$68 \div 2 = 34$
$34 \div 2 = \text{wrong answer}$

■ fraction method, eg

$\frac{544}{32} = \frac{136}{8} = \frac{34}{2} = \text{wrong answer}$

■ short division algorithm

wrong answer
$32 \overline{)5\ 4^{22}4}$

■ long division algorithm

$\begin{array}{r} \text{wrong answer} \\ 32 \overline{)544} \\ 320 \\ \hline 224 \\ -224 \\ \hline 0 \end{array}$ | Up to 2m | In all cases accept follow-through of **ONE** error in working.

Working must be carried through to reach an answer for the award of **ONE** mark.

Do not award any marks if the final answer is missing.

Variations on algorithms are acceptable, provided they represent a viable and complete method.

No mark is awarded for repeated addition/ subtraction/halving the wrong number of times.

Short division methods must be supported by evidence of appropriate carrying figures to indicate use of a division algorithm. |

Key Stage 2: 2012 Paper A

1.

| 14 | 24 | 1m | |

Key Stage 2: 2013 Paper A

1.

19	Award **TWO** marks for the correct answer of 34	Up to 2m	In all cases accept follow-through of **ONE** error in working.
	If the answer is incorrect, award **ONE** mark for evidence of appropriate working which contains no more than **ONE** arithmetical error, eg:		Working must be carried through to reach an answer for the award of **ONE** mark.
	■ repeated addition/subtraction methods, eg		Variations on algorithms are acceptable, provided they represent a viable and complete method.
	$\begin{array}{r} 816 \\ -240 \quad 10 \times 24 \\ \hline 576 \\ -240 \quad 10 \times 24 \\ \hline 336 \\ -240 \quad 10 \times 24 \\ \hline 96 \\ -48 \quad 2 \times 24 \\ \hline 48 \\ -48 \quad 2 \times 24 \\ \hline 0 \quad \text{wrong answer} \end{array}$		**Do not** award any marks if the final answer is missing.
	■ factor/multiple methods, eg		**No mark** is awarded for repeated addition/subtraction the wrong number of times.
	$816 \div 8 = 102$		
	$102 \div 3 = \text{wrong answer}$		
	■ short division algorithm		Short division methods must be supported by evidence of appropriate carrying figures to indicate use of a division algorithm.
	$\begin{array}{r} \text{wrong answer} \\ 24 \, \overline{)\, 81\,^{9}6} \end{array}$		
	■ long division algorithm		
	$\begin{array}{r} \text{wrong answer} \\ 24 \, \overline{)\, 816} \\ -720 \\ \hline 96 \\ -96 \\ \hline 0 \end{array}$		
	■ fraction method		
	$\frac{816}{24} = \frac{408}{12} = \frac{204}{6} = \text{wrong answer}$		

Key Stage 2: 2015 Paper B

1.

19	Award **TWO** marks for the correct answer of 26	Up to 2m	
	If the answer is incorrect award **ONE** mark for evidence of appropriate working which contains not more than **ONE** arithmetical error, eg:		Working must be carried through to reach an answer for the award of **ONE** mark.
	■ Long divisional algorithm		In all cases, accept follow-through of **ONE** error in working.
	wrong answer 36) 936 −720 216 −216 0		Variations on algorithms are acceptable, provided they represent a viable and complete method. **Do not** award any marks if the final answer is missing.
	■ Short division algorithm		
	wrong answer 36) 93²¹6		Short division methods must be supported by evidence of appropriate carrying figures to indicate use of division algorithm and be a complete method.
	■ Repeated addition/subtraction methods, eg		**No mark** is awarded for addition/subtraction the wrong number of times.
	936 −360 10 × 36 576 −360 10 × 36 216 −216 6 × 36 wrong answer		
	■ Factorisation methods, eg		
	936 ÷ 9 = 104 104 ÷ 4 = wrong answer		

Key Stage 2: 2016 Paper 1 Arithmetic - Sample

1.

6	8	1m	

Key Stage 2: 2016 Paper 1 Arithmetic - Sample

2.

11	70	1m	

Key Stage 2: 2016 Paper 1 Arithmetic - Sample
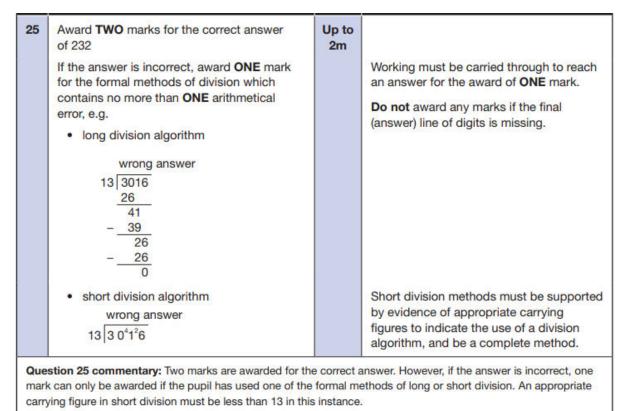
3.

16	120	1m	
Question 16 commentary: Pupils are expected to use their knowledge of table facts to answer this question.			

Key Stage 2: 2016 Paper 1 Arithmetic - Sample

4.

21	1501	1m	

Key Stage 2: 2016 Paper 1 Arithmetic - Sample

5.

25	Award **TWO** marks for the correct answer of 232 If the answer is incorrect, award **ONE** mark for the formal methods of division which contains no more than **ONE** arithmetical error, e.g. • long division algorithm wrong answer $13\overline{)3016}$ $\underline{26}$ 41 $-\underline{39}$ 26 $-\underline{26}$ 0 • short division algorithm wrong answer $13\overline{)3\,0^4 1^2 6}$	Up to 2m	Working must be carried through to reach an answer for the award of **ONE** mark. **Do not** award any marks if the final (answer) line of digits is missing. 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.

Question 25 commentary: Two marks are awarded for the correct answer. However, if the answer is incorrect, one mark can only be awarded if the pupil has used one of the formal methods of long or short division. An appropriate carrying figure in short division must be less than 13 in this instance.

Key Stage 2: 2016 Paper 1 Arithmetic - Sample

6.

34	Award **TWO** marks for the correct answer of 63 If the answer is incorrect, award **ONE** mark for the formal methods of division which contain no more than **ONE** arithmetical error, e.g. • long division algorithm wrong answer $37\overline{)2331}$ $-\underline{222}$ 111 $-\underline{111}$ 0 • short division algorithm wrong answer $37\overline{)2\,3\,3^{11}1}$	Up to 2m	Working must be carried through to reach an answer for the award of **ONE** mark. **Do not** award any marks if the final (answer) line of digits is missing. 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.

Key Stage 2: 2016 Paper 1 Arithmetic

1.

3	326		1m	

Key Stage 2: 2016 Paper 1 Arithmetic

2.

6	19		1m	

Key Stage 2: 2016 Paper 1 Arithmetic

3.

9	24		1m	

Key Stage 2: 2016 Paper 1 Arithmetic

4.

15	162		1m	

Key Stage 2: 2016 Paper 1 Arithmetic

5.

20	0.09		1m	

Key Stage 2: 2016 Paper 1 Arithmetic

6.

22	110		1m	

7.

| 28 | Award **TWO** marks for the correct answer of 25

If the answer is incorrect, award **ONE** mark for the formal methods of division with no more than **ONE** arithmetical error, i.e.

• long division algorithm, e.g.

$$\begin{array}{r} 25r2 \\ 29\overline{\smash{\big)}\,725} \\ -\ \underline{580} \qquad (20 \times 29) \\ 145 \\ -\ \underline{116} \qquad (4 \times 29) \\ 31 \quad (error) \\ -\ \underline{29} \qquad (1 \times 29) \\ 2 \end{array}$$

OR

$$\begin{array}{r} 24 \ (error) \\ 29\overline{\smash{\big)}\,725} \\ -\ \underline{58} \qquad (2 \times 29) \\ 145 \\ -\ \underline{145} \qquad (5 \times 29) \\ 0 \end{array}$$

• short division algorithm, e.g.

$$\begin{array}{r} 2\ \ 6 \ (error) \\ 29\overline{\smash{\big)}\,72^{14}5} \end{array}$$ | 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. |

Key Stage 2: 2016 Paper 1 Arithmetic

8.

32	Award **TWO** marks for the correct answer of 26	Up to 2m	
	If the answer is incorrect, award **ONE** mark for the formal methods of division with no more than **ONE** arithmetical error, i.e.		Working must be carried through to reach a final answer for the award of **ONE** mark.
	• long division algorithm, e.g.		
	$$\begin{array}{r} 28r14 \\ 43\overline{)1118} \\ -\ \underline{645} \quad (15 \times 43) \\ 573 \quad (error) \\ -\ \underline{430} \quad (10 \times 43) \\ 143 \\ -\ \underline{129} \quad (3 \times 43) \\ 14 \end{array}$$		
	OR		
	$$\begin{array}{r} 25r23 \\ 43\overline{)1118} \\ -\ \underline{88} \quad (error)\ (2 \times 43) \\ 238 \\ -\ \underline{215} \quad (5 \times 43) \\ 23 \end{array}$$		
	• short division algorithm, e.g.		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.
	$$\begin{array}{r} 2\ \ 5\ (error) \\ 43\overline{)111^{25}8} \end{array}$$		

Key Stage 2: 2017 Paper 1 Arithmetic

1.

4	505	1m	

Key Stage 2: 2017 Paper 1 Arithmetic

2.

9	8	1m	

Key Stage 2: 2017 Paper 1 Arithmetic

3.

17	83	1m	

4.

18	0.004	1m	

5.

| 20 | Award **TWO** marks for the correct answer of 42

If the answer is incorrect, award **ONE** mark for a formal method of division with no more than **ONE** arithmetic error, i.e.

• long division algorithm, e.g.

        42 r2
17 ⟌ 714
  −   680   (40 × 17)
        36   *(error)*
  −   34   (2 × 17)
         2

OR

        43   *(error)*
17 ⟌ 714
  −   680   (40 × 17)
        34
  −   34   (2 × 17)
         0

• short division algorithm, e.g.

     4 1 r7
17 ⟌ 71²4   *(error in carrying digit)* | 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. |

Key Stage 2: 2017 Paper 1 Arithmetic

6.

| 36 | Award **TWO** marks for the correct answer of 38

If the answer is incorrect, award **ONE** mark for a formal method of division with no more than **ONE** arithmetic error, i.e.

• long division algorithm, e.g.

$\begin{array}{r} 38\ r2 \\ 59\overline{)2242} \\ -\ 1770 \quad (30 \times 59) \\ \hline 474 \quad (error) \\ -\ 472 \quad (8 \times 59) \\ \hline 2 \end{array}$

OR

$\begin{array}{r} 35 \quad (error) \\ 59\overline{)2242} \\ -\ 1770 \quad (30 \times 59) \\ \hline 472 \\ -\ 472 \quad (8 \times 59) \\ \hline 0 \end{array}$

• short division algorithm, e.g.

$\begin{array}{r} 3\ 7\ r48 \quad (error) \\ 59\overline{)224^{47}2} \end{array}$ | 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. |

Key Stage 2: 2017 Paper 3 Reasoning

1.

| 1 | 10 | 1m | |

Key Stage 2: 2018 Paper 1 Arithmetic

1.

| 4 | 838 | 1m | |

Key Stage 2: 2018 Paper 1 Arithmetic

2.

| 5 | 9 | 1m | |

Key Stage 2: 2018 Paper 1 Arithmetic

3.

| 11 | 90 | 1m | |

4.

12	600	1m	

5.

13	4	1m	

6.

18	0.001	1m	Accept equivalent fractions, e.g. $\frac{1}{1000}$

7.

22	Award **TWO** marks for the correct answer of 15 If the answer is incorrect, award **ONE** mark for a formal method of division with no more than **ONE** arithmetic error, i.e. • long division algorithm, e.g. $$\begin{array}{r} 14 \quad (error) \\ 43\overline{\smash{)}645} \\ -\underline{430} \\ 215 \\ -\underline{215} \\ 0 \end{array}$$ **OR** $$\begin{array}{r} 15\ r28 \\ 43\overline{\smash{)}645} \\ -\underline{430} \quad 10\times 43 \\ 215 \\ -\underline{129} \quad 3\times 43 \\ 114 \quad (error) \\ -\underline{86} \quad 2\times 43 \\ 28 \end{array}$$ • short division algorithm, e.g. $$\begin{array}{r} 1\ \ 5\ r3 \quad (error) \\ 43\overline{\smash{)}64^{2}15} \end{array}$$	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.

Key Stage 2: 2018 Paper 1 Arithmetic

8.

| 36 | Award **TWO** marks for the correct answer of 91

If the answer is incorrect, award **ONE** mark for the formal methods of division with no more than **ONE** arithmetic error, i.e.

• long division algorithm, e.g.

$$\begin{array}{r} 81 \quad (error) \\ 97 \overline{\smash{)}8827} \\ -\ 8730 \\ \hline 97 \\ -\ \ 97 \\ \hline 0 \end{array}$$

OR

$$\begin{array}{r} 91\ r2 \\ 97 \overline{\smash{)}8827} \\ -\ 7760 \qquad 80 \times 97 \\ \hline 1069 \quad (error) \\ -\ \ 970 \qquad 10 \times 97 \\ \hline 99 \\ -\ \ 97 \qquad 1 \times 97 \\ \hline 2 \end{array}$$

• short division algorithm, e.g.

$$\begin{array}{r} 7\ 1 \quad (error) \\ 97 \overline{\smash{)}882\,^9 7} \end{array}$$ | Up to 2m | Working must be carried through to reach a final answer for the award of **ONE** mark.

Sometimes an error in calculation leads to a remainder which equals the truncated decimal equivalent. In such cases when the remainder is expressed as a decimal, evidence of working leading to the decimal must be seen in order to condone the possible notation error. (See General Marking Principle 13, page 8.)

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. |

Key Stage 2: 2019 Paper 1 Arithmetic

1.

7	60	1m	

Key Stage 2: 2019 Paper 1 Arithmetic

2.

8	10	1m	

Key Stage 2: 2019 Paper 1 Arithmetic

3.

10	13	1m	

Key Stage 2: 2019 Paper 1 Arithmetic

4.

13	110	1m	

Key Stage 2: 2019 Paper 1 Arithmetic

5.

20	0.009	1m	

Key Stage 2: 2019 Paper 1 Arithmetic

6.

| 25 | Award **TWO** marks for the correct answer of 24

If the answer is incorrect, award **ONE** mark for the formal methods of division with no more than **ONE** arithmetic error, i.e.

• long division algorithm, e.g.

$\begin{array}{r} 23\ r29 \\ 37\overline{)888} \\ -\ 740 \\ \hline 140\ (error) \\ -\ 111 \\ \hline 29 \end{array}$

OR

$\begin{array}{r} 42\ (error) \\ 37\overline{)888} \\ -\ 740\quad\quad 20\times 37 \\ \hline 148 \\ -\ 148\quad\quad 4\times 37 \\ \hline 0 \end{array}$

• short division algorithm, e.g.

$\begin{array}{r} 2\ 3\ r27\ (error) \\ 37\overline{)88^{14}8} \end{array}$ | 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. |

7.

36	Award **TWO** marks for the correct answer of 97	Up to 2m	
	If the answer is incorrect, award **ONE** mark for the formal methods of division with no more than **ONE** arithmetic error, i.e.		Working must be carried through to reach a final answer for the award of **ONE** mark.
	• long division algorithm, e.g.		
	``` 96 r82 83│ 8051 − 7470 580 (error) − 498 82 ```		
	OR		
	• ``` 47 (error) 83│ 8051 − 4150 50 × 83 3901 − 3320 40 × 83 581 581 7 × 83 0 ```		
	• short division algorithm, e.g.		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.
	``` 9 6 r73 83│ 805⁵⁷1 (error) ```		