

1.	$3.005 + 6.12 =$	
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A blank sheet of graph paper with a grid pattern. The grid consists of small squares formed by thin red lines. There are 20 columns and 15 rows of squares. A thick black border runs along the top and left edges of the page.

1 mark

2.	$15.98 + 26.314 =$	
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[illegible]

1 mark

3.	$16.4 + 7.18 =$	
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[illegible]

1 mark

4. $5.09 + 27.4 =$

A blank sheet of white graph paper with a light gray grid. The grid consists of small squares, approximately 1 cm by 1 cm. There are 20 columns and 15 rows of squares. A thick black border surrounds the entire grid area.

1 mark

5.

$$876 + 543 - 198 =$$

--

A blank sheet of graph paper with a grid pattern. The grid consists of small squares formed by light blue lines. There are 20 columns and 10 rows of squares. A thick black border surrounds the entire grid area.

1 mark

6.

$$6 - 5.738 =$$

--

[illegible]

1 mark

7. $4 - 1.15 =$

--

A blank sheet of graph paper with a grid pattern. The grid consists of small squares formed by light blue lines. There are 20 columns and 15 rows of squares. A thick black border surrounds the entire grid area.

1 mark

8. $7,624 - 931 - 87 =$

[illegible]

1 mark

9.

$36.4 - 27.8 =$

1 mark

10.

$20 - 4 \times 2 =$

1 mark

$$\begin{array}{r} 3468 \\ \times \quad 62 \\ \hline \end{array}$$

2 marks

$$\begin{array}{r} 5413 \\ \times \quad 86 \\ \hline \end{array}$$

2 marks

13.

$$\begin{array}{r} 4781 \\ \times 23 \\ \hline \end{array}$$

Show
your
method

2 marks

14.

$$15 \times 6.1 =$$

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A blank sheet of graph paper with a grid pattern. The grid consists of small squares formed by thin red lines. There are 20 columns and 15 rows of squares. A thick black border runs along the top and left edges of the page.

1 mark

15.

$$\begin{array}{r} 6574 \\ \times \quad 31 \\ \hline \end{array}$$

Show your method	

2 marks

16.

$$3 \ 7 \overline{) 8 \ 8 \ 8}$$

Show your method	

2 marks

17. $83 \overline{) 8051}$

Show your method	

2 marks

18. $97 \overline{) 8827}$

Show your method	

2 marks

Mark schemes

- | | | |
|-----|--------|-----|
| 1. | 9.125 | [1] |
| 2. | 42.294 | [1] |
| 3. | 23.58 | [1] |
| 4. | 32.49 | [1] |
| 5. | 1221 | [1] |
| 6. | 0.262 | [1] |
| 7. | 2.85 | [1] |
| 8. | 6606 | [1] |
| 9. | 8.6 | [1] |
| 10. | 12 | |

Commentary: Pupils are expected to use their knowledge of the order of operations to carry out calculations involving the four operations (6C9) in this case to evaluate 4×2 first and then to subtract that product from 20.

[1]

11.

Award **TWO** marks for the correct answer of 215,016

If the answer is incorrect, award **ONE** mark for the formal method of long multiplication with no more than **ONE** arithmetic error, e.g.

- $$\begin{array}{r} 3468 \\ \times \quad 62 \\ \hline 6936 \\ 208080 \\ \hline 214016 \text{ (error)} \end{array}$$

OR

- $$\begin{array}{r} 3468 \\ \times \quad 62 \\ \hline 6934 \text{ (error)} \\ 208080 \\ \hline 215014 \end{array}$$

*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:*

$$\begin{array}{r} 3468 \\ \times \quad 62 \\ \hline 6936 \\ 20808 \text{ (place value error)} \\ \hline 27744 \end{array}$$

Up to 2m

[2]

12.

Award **TWO** marks for the correct answer of 465,518

If the answer is incorrect, award **ONE** mark for the formal method of long multiplication with no more than **ONE** arithmetic error, e.g.

•

$$\begin{array}{r} 5413 \\ \times \quad 86 \\ \hline 32478 \\ 433040 \\ \hline 465438 \text{ (error)} \end{array}$$

OR

•

$$\begin{array}{r} 5413 \\ \times \quad 86 \\ \hline 32478 \\ 423040 \text{ (error)} \\ \hline 455518 \end{array}$$

*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:*

$$\begin{array}{r} 5413 \\ \times \quad 86 \\ \hline 32478 \\ 43304 \text{ (place value error)} \\ \hline 75782 \end{array}$$

Up to 2m

[2]

13.Award **TWO** marks for the correct answer of 109,963

If the answer is incorrect, award **ONE** mark for a formal method of long multiplication with no more than **ONE** arithmetical error, e.g.

- $$\begin{array}{r}
 4781 \\
 \times \quad 23 \\
 \hline
 14343 \\
 \underline{95620} \\
 209963 \text{ (error)}
 \end{array}$$

OR

- $$\begin{array}{r}
 4781 \\
 \times \quad 23 \\
 \hline
 14343 \\
 \underline{95630} \text{ (error)} \\
 109973
 \end{array}$$

*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:

$$\begin{array}{r}
 4781 \\
 \times \quad 23 \\
 \hline
 14343 \\
 \underline{9562} \text{ (place value error)} \\
 23905
 \end{array}$$

Up to 2m

[2]**14.**

91.5

[1]

15.

Award **TWO** marks for the correct answer of 203,794

If the answer is incorrect, award **ONE** mark for the formal method of long multiplication with no more than **ONE** arithmetical error,

e.g.

- $$\begin{array}{r} 6574 \\ \times \quad 31 \\ \hline 6574 \\ 143790 \\ \hline 150364 \end{array} \quad (\text{error})$$

OR

- $$\begin{array}{r} 6574 \\ \times \quad 31 \\ \hline 6574 \\ 197220 \\ \hline 193794 \end{array} \quad (\text{error})$$

*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:

$$\begin{array}{r} 6574 \\ \times \quad 31 \\ \hline 6574 \\ 19722 \\ \hline 26296 \end{array} \quad (\text{place value error})$$

Up to 2m

[2]

16.

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.

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

OR

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

- short division algorithm, e.g.

$$\begin{array}{r}
 23 \text{ r}27 \text{ (error)} \\
 37 \overline{) 888}
 \end{array}$$

*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.*

Up to 2m

[2]

17.

Award **TWO** marks for the correct answer of 97

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.

$$\begin{array}{r}
 96 \text{ r}2 \\
 83 \overline{) 8051} \\
 \underline{- 7470} \\
 580 \text{ (error)} \\
 \underline{- 498} \\
 82
 \end{array}$$

OR

$$\begin{array}{r}
 47 \text{ (error)} \\
 83 \overline{) 8051} \\
 \underline{- 4150} \quad 50 \times 83 \\
 3901 \\
 \underline{- 3320} \quad 40 \times 83 \\
 581 \\
 \underline{- 581} \quad 7 \times 83 \\
 0
 \end{array}$$

- short division algorithm, e.g.

$$\begin{array}{r}
 9 \ 6 \text{ r}73 \\
 83 \overline{) 805^{57}1} \text{ (error)}
 \end{array}$$

*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.*

Up to 2m

[2]

18.

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.

$$\begin{array}{r}
 81 \text{ (error)} \\
 97 \overline{) 8827} \\
 \underline{- 8730} \\
 97 \\
 \underline{- 97} \\
 0
 \end{array}$$

OR

$$\begin{array}{r}
 91 \text{ r}2 \\
 97 \overline{) 8827} \\
 \underline{- 7760} \\
 1069 \text{ (error)} \\
 \underline{- 970} \\
 99 \\
 \underline{- 97} \\
 2
 \end{array}
 \quad
 \begin{array}{l}
 80 \times 97 \\
 10 \times 97 \\
 1 \times 97
 \end{array}$$

*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.

- short division algorithm, e.g.

$$\begin{array}{r}
 71 \text{ (error)} \\
 97 \overline{) 882}^9 7
 \end{array}$$

*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.*

Up to 2m

[2]

19.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.

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

OR

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

- short division algorithm, e.g.

$$\begin{array}{r}
 3 \ 7 \text{ r}48 \quad (\text{error}) \\
 59 \overline{) 224} \text{ } ^{47} 2
 \end{array}$$

*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.

Up to 2m

[2]

20.

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.

$$\begin{array}{r}
 25\text{r}2 \\
 29 \overline{) 725} \\
 - \frac{580}{145} \quad (20 \times 29) \\
 - \frac{116}{31} \text{ (error) } (4 \times 29) \\
 - \frac{29}{2} \quad (1 \times 29)
 \end{array}$$

OR

$$\begin{array}{r}
 29 \overline{) \frac{24}{725}} \text{ (error)} \\
 - \frac{58}{145} \quad (2 \times 29) \\
 - \frac{145}{0} \quad (5 \times 29)
 \end{array}$$

- short division algorithm, e.g.

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

$$\begin{array}{r}
 2 \ 6 \\
 29 \overline{) 72^{14}5} \text{ (error)}
 \end{array}$$

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.

Up to 2m

[2]