7. Mark schemes for Paper 1: arithmetic

Qu.	Requirement	Mark	Additional guidance
1	712	1m	
2	$\frac{5}{11}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $0.\overline{45}$ (accept any unambiguous indication of the recurring digits). **Do not** accept rounded or truncated decimals.
3	90	1m	
4	838	1m	
5	9	1m	
6	200	1m	
7	6,562	1m	
8	46	1m	
9	81.08	1m	
10	308	1m	
11	90	1m	
12	600	1m	
13	4	1m	
14	4,921	1m	
15	50,000	1m	
16	4.6	1m	
17	$\frac{6}{7}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $0.\overline{857142}$ (accept any unambiguous indication of the recurring digits). **Do not** accept rounded or truncated decimals.
18	0.001	1m	Accept equivalent fractions, e.g. $\frac{1}{1000}$

Qu.	Requirement	Mark	Additional guidance
19	750	1m	
20	Award **TWO** marks for the correct answer of 18,055 If the answer is incorrect, award **ONE** mark for a formal method of long multiplication with no more than **ONE** arithmetic error, e.g. • 785 × 23 = 2355 + 15700 = 18155 *(error)* **OR** • 785 × 23 = 2345 *(error)* + 15700 = 18045	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: 785 × 23 = 2355 + 1570 *(place value error)* = 3925
21	240	1m	**Do not** accept 240%

Qu.	Requirement	Mark	Additional guidance
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. 43 ⟌ 645 = 14 *(error)* − 430 215 − 215 0 **OR** 43 ⟌ 645 = 15 r28 − 430 (10 × 43) 215 − 129 (3 × 43) 114 *(error)* − 86 (2 × 43) 28 • short division algorithm, e.g. 43 ⟌ 64²¹5 = 1 5 r3 *(error)*	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.
23	14	1m	
24	$\frac{7}{10}$	1m	Accept equivalent fractions or the **exact** decimal equivalent, e.g. 0.7
25	$2\frac{1}{2}$	1m	Accept equivalent mixed numbers, fractions or the **exact** decimal equivalent, e.g. 2.5
26	0.262	1m	
27	117	1m	

Qu.	Requirement	Mark	Additional guidance
28	$\frac{2}{3}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $0.\overline{6}$ (accept any unambiguous indication of the recurring digits). **Do not** accept rounded or truncated decimals.
29	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. • 5413 × 86 = 32478 + 433040 = 465438 *(error)* **OR** • 5413 × 86 = 32478 + 423040 *(error)* = 455518	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: • 5413 × 86 = 32478 + 43304 *(place value error)* = 75782
30	198	1m	**Do not** accept 198%
31	$\frac{1}{8}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. 0.125
32	77	1m	
33	60	1m	**Do not** accept unsimplified equivalent fractions unless accompanied by 60 or $\frac{60}{1}$
34	182	1m	**Do not** accept 182%
35	$2\frac{17}{21}$ **OR** $\frac{59}{21}$	1m	Accept equivalent mixed numbers, fractions or the **exact** decimal equivalent, e.g. $2.\overline{809523}$ (accept any unambiguous indication of the recurring digits). **Do not** accept rounded or truncated decimals.

Qu.	Requirement	Mark	Additional guidance
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. 81 *(error)* 97 | 8827 − 8730 97 − 97 0 **OR** 91 r2 97 | 8827 − 7760 80 × 97 1069 *(error)* − 970 10 × 97 99 − 97 1 × 97 2 • short division algorithm, e.g. 7 1 *(error)* 97 | 882 9 7	**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.