7. Mark schemes for Paper 1: arithmetic

Qu.	Requirement	Mark	Additional guidance
1	1,040	1m	
2	2,525	1m	
3	$1\frac{1}{6}$ **OR** $\frac{7}{6}$	1m	Accept equivalent mixed numbers, fractions or an **exact** decimal equivalent, e.g. $1.1\overline{6}$ (accept any unambiguous indication of the recurring digit). **Do not** accept rounded or truncated decimals.
4	505	1m	
5	285	1m	
6	5.714	1m	
7	5,100	1m	
8	264	1m	
9	8	1m	
10	668	1m	
11	4,088	1m	
12	$\frac{6}{25}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $\frac{24}{100}$ or 0.24
13	1,159	1m	
14	56	1m	
15	$\frac{2}{5}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $\frac{12}{30}$ or 0.4
16	1,200	1m	
17	83	1m	
18	0.004	1m	
19	2,345,000	1m	

Qu.	Requirement	Mark	Additional guidance
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. $$\begin{array}{r} 42\ \text{r2} \\ 17\overline{)714} \\ -\ 680 \quad (40 \times 17) \\ \hline 36 \quad \textit{(error)} \\ -\ 34 \quad (2 \times 17) \\ \hline 2 \end{array}$$ **OR** $$\begin{array}{r} 43 \quad \textit{(error)} \\ 17\overline{)714} \\ -\ 680 \quad (40 \times 17) \\ \hline 34 \\ -\ 34 \quad (2 \times 17) \\ \hline 0 \end{array}$$ • short division algorithm, e.g. $$\begin{array}{r} 4\ 1\ \text{r7} \\ 17\overline{)71^{2}4} \quad \textit{(error in carrying digit)} \end{array}$$	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.
21	5.55	1m	

Qu.	Requirement	Mark	Additional guidance

22	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** arithmetic error, e.g.
	
	• 4781
	  × 23
	    14343
	    95620
	  209963 *(error)*
	
	OR
	
	• 4781
	  × 23
	    14343
	    95630 *(error)*
	  109973
		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:
			
			    4781
			 × 23
			  14343
			   9562 *(place value error)*
			  23905

23	$\dfrac{3}{8}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. 0.375

24	Award **TWO** marks for the correct answer of 19,228
	
	If the answer is incorrect, award **ONE** mark for a formal method of long multiplication with no more than **ONE** arithmetic error, e.g.
	
	• 418
	  × 46
	   2508
	  16720
	  18228 *(error)*
	
	OR
	
	• 418
	  × 46
	   2508
	  16620 *(error)*
	  19128
		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:
			
			• 418
			  × 46
			   2508
			  1672 *(place value error)*
			  4180

25	23.129	1m	
26	$\dfrac{11}{20}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. 0.55

Qu.	Requirement	Mark	Additional guidance
27	$\dfrac{1}{5}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $\dfrac{4}{20}$ or 0.2
28	$\dfrac{5}{16}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. 0.3125
29	207	1m	**Do not** accept 207%
30	$3\dfrac{1}{6}$ **OR** $\dfrac{19}{6}$	1m	Accept equivalent mixed numbers, fractions or an **exact** decimal equivalent, e.g. $3.1\overline{6}$ (accept any unambiguous indication of the recurring digit). **Do not** accept rounded or truncated decimals. **Do not** accept $2\dfrac{7}{6}$
31	35	1m	**Do not** accept 35%
32	$\dfrac{5}{24}$	1m	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $\dfrac{10}{48}$ or $0.2083\overline{3}$ (accept any unambiguous indication of the recurring digit). **Do not** accept rounded or truncated decimals.
33	180	1m	
34	150	1m	**Do not** accept 150%
35	$85\dfrac{1}{2}$	1m	Accept equivalent fractions or an **exact** decimal equivalent e.g. $\dfrac{171}{2}$ or 85.5

Qu.	Requirement	Mark	Additional guidance
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. $\begin{array}{r} 38\ r2 \\ 59\overline{)2242} \\ -\ 1770 \quad (30 \times 59) \\ \hline 474 \quad \textit{(error)} \\ -\ 472 \quad (8 \times 59) \\ \hline 2 \end{array}$ **OR** $\begin{array}{r} 35 \quad \textit{(error)} \\ 59\overline{)2242} \\ -\ 1770 \quad (30 \times 59) \\ \hline 472 \\ -\ 472 \quad (8 \times 59) \\ \hline 0 \end{array}$ • short division algorithm, e.g. $\begin{array}{r} 3\ 7\ r48 \quad \textit{(error)} \\ 59\overline{)224^{47}2} \end{array}$	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.