100 Arithmetic Questions for SATs

Answers and Mark Scheme

THIRD SPACE LEARNING

This pack contains the answers and mark scheme to the 100 Arithmetic Questions for SATs. Once your child has completed all of the questions, or even as they finish each section, you can use this simple mark scheme.

How to share the results with your child

Once they have completed the questions it is really important to congratulate your child for sitting down and trying their best, whatever their results are.

It is up to you to share as much as you think you should with your child. For some children, you may just want to pick out one or two examples of where they did well or less well. For others, a full breakdown of their results might be seen as a welcome challenge!

It's important to reassure your child of your continued support especially if they need some additional help with SATs style questions.

Q	Requirement	Mark	Additional guidance
1	1007	1m	
2	660	1m	
3	923	1m	
4	1205	1m	
5	387	1m	
6	1	1m	
7	43	1m	
8	925	1m	
9	83,371	1m	
10	90	1m	
11	3840	1m	
12	3600	1m	
13	9.02	1m	
14	7.581	1m	
15	174.14	1m	
16	134	1m	
17	270,382	1m	
18	11	1m	
19	10.07	1m	
20	6.01	1m	

Q	Requirement	Mark	Additional guidance
21	Award TWO marks for the correct answer of 1,550 If the answer is incorrect, award ONE mark for the formal method of long multiplication with no more than ONE arithmetical error, e.g. $\begin{array}{r} 62 \\ \times\ 25 \\ \hline 310 \\ 1240 \\ \hline 1650 \end{array}$ *(error)* or $\begin{array}{r} 62 \\ \times\ 25 \\ \hline 310 \\ 1240 \\ \hline 1650 \end{array}$ *(error)*	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: $\begin{array}{r} 62 \\ \times\ 25 \\ \hline 310 \\ 124 \\ \hline 434 \end{array}$ *(place value error)* Do not accept 720%
22	720	1m	
23	115	1m	
24	124.2	1m	

Q	Requirement	Mark	Additional guidance
25	1 2/9 OR 11/9	1m	Accept equivalent fractions or the exact decimal equivalent, e.g. 1.222... (accept any unambiguous indication of the recurring digits). Do not accept rounded or truncated decimals.
26	-9	1m	
27	13	1m	
28	2.63	1m	
29	27.802	1m	
30	12,000	1m	
31	2,397,562	1m	
32	5/7	1m	
33	30,700	1m	
34	700	1m	
35	14.695	1m	
36	9,999,899	1m	
37	3/12 or 1/4	1m	
38	81	1m	

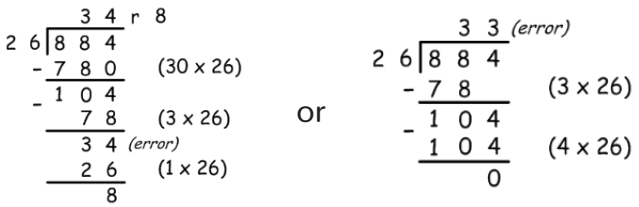
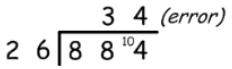
Q	Requirement	Mark	Additional guidance
39	3 12/9 or 4 1/3	1m	
40	200	1m	
41	17.92	1m	
42	Award TWO marks for the correct answer of 24. If the answer is incorrect, award ONE mark for the formal methods of division with no more than ONE arithmetical error, i.e. 2 4 r 2 1 9 | 4 5 6 - 3 8 0 (20 x 19) 7 6 - 7 4 (error) (4 x 19) 2 OR 2 4 r 10 1 9 | 4 5 6 - 3 8 (2 x 19) 8 6 (error) - 7 6 (4 x 19) 1 0 Short division algorithm e.g. 2 3 r 18 (error) 1 9 | 4 5 7 6	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.
43	960	1m	

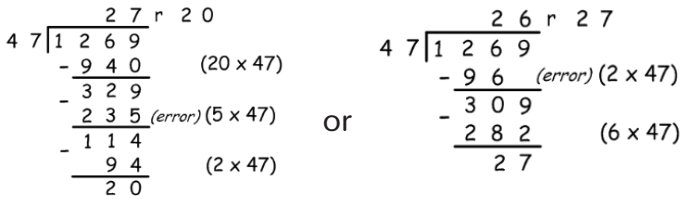
Q	Requirement	Mark	Additional guidance
44	Award TWO marks for the correct answer of 1 058 If the answer is incorrect, award ONE mark for the formal method of long multiplication with no more than ONE arithmetical error, e.g. $\begin{array}{r} 46 \\ \times\ 23 \\ \hline 138 \\ +\ 920 \\ \hline 1048 \end{array}$ *(error)* OR $\begin{array}{r} 46 \\ \times\ 23 \\ \hline 136 \\ +\ 920 \\ \hline 1046 \end{array}$ *(error)*	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: $\begin{array}{r} 46 \\ \times\ 23 \\ \hline 138 \\ +\ 92 \\ \hline 230 \end{array}$ *(place value error)*
45	1/4	1m	Accept equivalence
46	22	1m	

Q	Requirement	Mark	Additional guidance
47	Award TWO marks for the correct answer of 53 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. $\begin{array}{r} 54\text{ r }13 \\ 27\overline{)1431} \\ -1350 \quad (50\times27) \\ \hline 0121 \quad \textit{(error)} \\ -108 \quad (4\times27) \\ \hline 13 \end{array}$ OR $\begin{array}{r} 53\text{ r }3 \\ 27\overline{)1431} \\ -135 \quad (5\times27) \\ \hline 0081 \\ -78 \quad \textit{(error)}(3\times27) \\ \hline 3 \end{array}$ • short division algorithm, e.g. $\begin{array}{r} 53\text{ r }10 \\ 27\overline{)1431^{9}1} \quad \textit{(error)} \end{array}$	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. Accept 20/50 or equivalent fraction
48	5/14	1m	

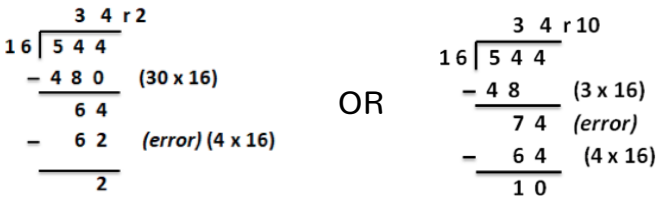
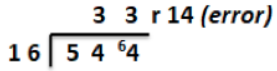
Q	Requirement	Mark	Additional guidance
49	Award TWO marks for the correct answer of 395 808 If the answer is incorrect, award ONE mark for the formal method of long multiplication with no more than ONE arithmetical error, e.g. 5 2 0 8 x 7 6 3 1 2 4 8 3 6 4 5 6 0 + 3 9 5 7 0 8 *(error)* OR 5 2 0 8 x 7 6 3 1 2 0 8 *(error)* 3 6 4 5 6 0 + 3 9 5 7 6 8	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:
50	1 7/12	1m	
51	3/14	1m	
52	88	1m	
53	3,835	1m	
54	0	1m	
55	734	1m	
56	8	1m	
57	75,598	1m	
58	6,169	1m	

Q	Requirement	Mark	Additional guidance
59	140	1m	
60	8.7	1m	
61	121	1m	
62	$\frac{5}{8}$	1m	Accept equivalent fractions or an exact decimal equivalent, e.g. 0.625 Do not accept 34%
63	34	1m	Working must be carried through to reach a final answer for the award of ONE mark.
64	Award TWO marks for the correct answer of 304,655 If the answer is incorrect, award ONE mark for the formal method of long multiplication with no more than ONE arithmetical error, e.g. 7085 × 43 = 21255 + 283200 = 204455 *(error)* or 7085 × 43 = 21255 + 283200 = 204455 *(error)*	Up to 2m	Do not award any marks if the error is in the place value, e.g. the omission of the zero when multiplying by tens: 7085 × 43 = 21255 + 28340 = 49595 *(place value error)*

Q	Requirement	Mark	Additional guidance
65	Award TWO marks for the correct answer of 34 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.  • short division algorithm, e.g.  	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. Accept equivalent fractions or an exact decimal equivalent, e.g. 3.1875 Do not accept for e.g. 2 19/16
66	3 3/16 OR 51/16	1m	

Q	Requirement	Mark	Additional guidance
67	$\frac{2}{11}$	1m	Accept equivalent fractions or an exact decimal equivalent, e.g. 0.1818... (accept any unambiguous indication of the recurring digits). Accept equivalent fractions or the exact decimal equivalent, e.g. 0.375
68	$\frac{3}{8}$	1m	Do not accept rounded or truncated decimals. Accept equivalent fractions or the exact decimal equivalent e.g. 0.7 Working must be carried through to reach a final answer for the award of ONE mark.
69	$\frac{7}{10}$	1m	
70	Award TWO marks for the correct answer of 27 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.  or 	Up to 2m	Short division methods must be supported by evidence of appropriate

Q	Requirement	Mark	Additional guidance
	• short division algorithm, e.g. 2 6 *(error)* 4 7 | 1 2 6 ^{32}9		carrying figures to indicate the use of a division algorithm, and be a complete method. The carrying figure must be less than the divisor.
71	75	1m	Do not accept 9
72	58	1m	
73	-9	1m	
74	53,195	1m	
75	6,288	1m	
76	119	1m	
77	6.9	1m	
78	24,000	1m	Accept equivalence
79	13	1m	
80	4/11	1m	
81	5.82	1m	
82	19.607	1m	
83	4,793,529	1m	
84	50,400	1m	
85	17.857	1m	
86	94	1m	
87	600	1m	

Q	Requirement	Mark	Additional guidance
88	9,999,599	1m	Accept equivalence
89	6/12 or 1/2 or 2/4	1m	
90	280	1m	
91	33.03	1m	
92	4 12/8 or 5 1/2	1m	Accept equivalence
93	Award TWO marks for the correct answer of 34. 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.  OR • short division algorithm, e.g.  	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.

Q	Requirement	Mark	Additional guidance
94	1/7	1m	Accept equivalence
95	Award TWO marks for the correct answer of 1 598 If the answer is incorrect, award ONE mark for the formal method of long multiplication with r : arithmetic 47 x 34 = 188 + 1410 = 1590 (error) OR 47 x 34 = 186 (error) + 1410 = 1596	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:
96	2,880	1m	
97	30	1m	
98	Award TWO marks for the correct answer of 48 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.	Up to 2m	

Q	Requirement	Mark	Additional guidance
	$\begin{array}{r} 47\text{ r }27 \\ 29\overline{)1392} \\ -1160 \\ \hline 230 \\ -203 \\ \hline 27 \end{array}$ (40 x 29) (error) (4 x 16) OR $\begin{array}{r} 47\text{ r }6 \\ 29\overline{)1392} \\ -116 \\ \hline 232 \\ -226 \\ \hline 6 \end{array}$ (4 x 29) (error) (8 x 29) • short division algorithm, e.g. $\begin{array}{r} 46\text{ r }18 \\ 29\overline{)139^{19}2} \end{array}$ (error)		
99	13/15	1m	
100	Award TWO marks for the correct answer of 350 262 If the answer is incorrect, award ONE mark for the formal method of long multiplication with no more than ONE arithmetical error, e.g. $\begin{array}{r} 6039 \\ \times\quad 58 \\ \hline 48312 \\ +301950 \\ \hline 349262 \end{array}$ (error) OR $\begin{array}{r} 6039 \\ \times\quad 58 \\ \hline 48012 \\ +301950 \\ \hline 349962 \end{array}$ (error)	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: $\begin{array}{r} 6039 \\ \times\quad 58 \\ \hline 48312 \\ +30195 \\ \hline 78507 \end{array}$ (place value error)

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