

# Year 9 – End of Term 1 Assessment

Question	Working	Answer	Mark	Notes
1		-13, -5, 0, 7, 11	1	B1 cao
2		2.09, 2.12, 2.19, 2.2	1	B1 cao
3		15 > 16 is circled	1	B1 cao
4		He has not used the correct order of operations	1	C1 oe eg He has added before dividing
5	(a)	24	1	
	(b)	25	1	
	(c)	23	1	
6		Gives all six correct two-digit numbers with no errors,  i.e. 31, 32, 34, 41, 42, 43	2	M1 if at least four correct two-digit number, even if there are errors  i.e. 32, 33, 34, 41, 42  A1 for cao

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7	$\begin{array}{r} 515 \\ \underline{35} \times \\ 2575 \\ \underline{15450} \\ 18025 \end{array}$ $\begin{array}{l} 10 \times 515 = 5150 \\ 10 \times 515 = 5150 \\ 10 \times 515 = 5150 \\ 5 \times 515 = 2575 \\ \hline 18025 \end{array}$ <table border="1" data-bbox="378 448 736 734"> <tr><td></td><td>5</td><td>1</td><td>5</td><td>×</td></tr> <tr><td></td><td>1</td><td>0</td><td>1</td><td>3</td></tr> <tr><td></td><td>5</td><td>3</td><td>5</td><td></td></tr> <tr><td>1</td><td>2</td><td>0</td><td>2</td><td>5</td></tr> <tr><td></td><td>5</td><td>5</td><td>5</td><td></td></tr> <tr><td>8</td><td>0</td><td>2</td><td>5</td><td></td></tr> </table> <table border="1" data-bbox="378 767 743 884"> <tr><td></td><td>500</td><td>10</td><td>5</td></tr> <tr><td>30</td><td>15000</td><td>300</td><td>150</td></tr> <tr><td>5</td><td>2500</td><td>50</td><td>25</td></tr> </table> $15000 + 2500 + 300 + 50 + 150 + 25 = 18025$		5	1	5	×		1	0	1	3		5	3	5		1	2	0	2	5		5	5	5		8	0	2	5			500	10	5	30	15000	300	150	5	2500	50	25	£180.25	3	<p>M1 for a complete method with relative place value correct. Condone one arithmetic error,</p> <p>M1 for complete correct method or the digits 18025</p> <p>A1 for £180.25(p) or 18025p (with '£' sign deleted)</p>
	5	1	5	×																																										
	1	0	1	3																																										
	5	3	5																																											
1	2	0	2	5																																										
	5	5	5																																											
8	0	2	5																																											
	500	10	5																																											
30	15000	300	150																																											
5	2500	50	25																																											
8		14	2	<p>M1 for <math>2 \times 2^3 - 2</math></p> <p>A1 cao</p>																																										
9		$10x - 15$	1	B1 cao																																										
10		$3(t + 4)$	1	B1 cao																																										

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11 (a)		$7 - m$	1	A1 cao																																									
(b)		$5d + 3$	1	A1 cao																																									
(c)		$4k$	1	A1 cao																																									
12	$14x + 7 + 6x + 18$	$20x + 25$	2	M1 for $7 \times 2x + 7 \times 1$ or $14x + 7$ or $6 \times x + 6 \times 3$ or $6x + 18$  A1 for $20x + 25$ (accept $5(4x + 5)$ )																																									
13 (a)	--- (16) ---	16	1	B1 cao																																									
(b)		Answer in the range 150 to 174 inclusive	2	M1 for at least two of 29 or 30, 20 or 24, 4 used in a calculation  A1 cao																																									
14	$\begin{array}{r} 240 \\ \times 120 \\ \hline 4800 \\ 24000 \\ \hline 28800 \end{array}$ <table border="1" style="display: inline-table; vertical-align: middle;"> <tr><td></td><td>2</td><td>4</td><td>0</td><td>×</td></tr> <tr><td>0</td><td>0</td><td>2</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>2</td><td>0</td><td>4</td><td>0</td><td>8</td><td>0</td><td>2</td></tr> <tr><td>8</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>8</td><td>0</td><td>0</td><td></td><td></td><td></td><td></td></tr> </table> <table border="1" style="display: inline-table; vertical-align: middle; margin-top: 10px;"> <tr><td>×</td><td>200</td><td>40</td></tr> <tr><td>100</td><td>20000</td><td>4000</td></tr> <tr><td>20</td><td>4000</td><td>800</td></tr> </table> <p><math>= 20000 + 4000 + 4000 + 800</math> <math>= 28800</math></p>		2	4	0	×	0	0	2	0	0	1	2	0	4	0	8	0	2	8	0	0	0	0	0	0	8	0	0					×	200	40	100	20000	4000	20	4000	800	£288	3	M2 for complete method, no errors  <b>OR</b>  M1 for complete method, with no more than one computational error  e.g. $\begin{array}{r} 240 \\ \times 120 \\ \hline 14000 \\ 4800 \\ \hline 18800 \end{array}$ Answer 188.00  e.g. $240 \times \pounds 1 = \pounds 240$ , and $240 \times 20p = \pounds 240 \div 5 = 46$ so the answer is 286  A1 cao
	2	4	0	×																																									
0	0	2	0	0	1																																								
2	0	4	0	8	0	2																																							
8	0	0	0	0	0	0																																							
8	0	0																																											
×	200	40																																											
100	20000	4000																																											
20	4000	800																																											

Question	Working	Answer	Mark	Notes
15		24	2	M1 for $2 \times 2 \times 2 \times 3$ or 12 or 6 A1 cao
16 (a) (b)		$6n + 5$	2 1	B2 for $6n + 5$ (B1 for $6n + k$ , where k is an integer) A1 for no with complete explanation, eg $6n = 116$ will not give a whole number

Question	Working	Answer	Mark	Notes
17 (a)		<p>Correct explanation showing both aspects below:</p> <p>Shows all three component parts</p> <p><math>7^2</math> or <math>7 \times 7</math></p> <p><math>7^3</math> or <math>7 \times 7 \times 7</math></p> <p><math>7^5</math> or <math>7 \times 7 \times 7 \times 7 \times 7</math></p> <p><b>and</b></p> <p>Shows how the component part are linked, either through multiplication or through addition of the power (must be stronger than a restatement of the given <math>49 \times 343 = 16807</math>)</p> <p>eg</p> <p><math>49 \times 343 = 7^2 \times 7^3 = 7^5</math></p> <p><math>7^2 \times 7^3 = 7^5</math></p> <p><math>7^5 = (7 \times 7) \times (7 \times 7 \times 7)</math></p> <p><math>7^2 \times 7^3</math>, add the powers to get <math>7^5</math></p>	1	<p>C1 cao</p> <p>C0 if component parts not all shown</p> <p>e.g. <math>49 \times 343 = 7^2 \times 7^3</math></p>
(b)		$a^3$	1	A1 cao
(c)		$x^6$	1	A1 cao

Question	Working	Answer	Mark	Notes
18		4	1	A1 cao NOTE : Accept A1 for 4 and/or -4
19		617 000	1	B1 cao
20		$8 \times 10^4$	1	B1 cao
21		$(x + 8)(x - 1)$	2	M1 for $(x \pm 8)(x \pm 1)$  A1 cao

### EXTENSION PAPER

Question	Working	Answer	Mark	Notes
1 (a)		6	1	B1 cao
(b)		shown	2	M1 for writing $100^a$ or $1000^b$ as a power of 10 $(= 10^{2a}$ or $10^{3b})$ or $10^{2a+3b}$  or $100 = 10^2$ and $1000 = 10^3$  C1 for complete chain of reasoning leading to conclusion

Question	Working	Answer	Mark	Notes
2		$10\sqrt{6}$	2	M1 for $\sqrt{75 \times 8}$ or $\sqrt{600}$ or $5\sqrt{3}$ or $2\sqrt{2}$ A1 cao
3		$2\sqrt{5}$	2	M1 for multiplication of denominator and numerator by $\sqrt{5}$ A1 cao
4		$n^2 + n + 4$	3	M1 begins to work with 2 <sup>nd</sup> differences  4 6 8 2 2  M1 identifies $n^2$ as part of the expression eg gives the sequence 1, 4, 9, 16, ... or gives a quadratic expression which includes the term $n^2$  A quadratic expression of the form $n^2 + bn + c$ can be awarded the first two marks  A1 oe