

Key Stage 2

Mathematics

PiXL Paper C

1, 2 and 3: Mark Scheme

Mathematics Paper C: Mark Scheme

1 - Arithmetic (Out of 40 marks)

Question NC ref code	Requirement	Mark	Additional guidance
1 3N2b	466	1m	
2 4N2b	6,928	1m	
3 4C7	3,072	1m	
4 3C2	114	1m	
5 4C2	8,617	1m	
6 3N2b	7,005	1m	
7 4C7	513	1m	
8 4C6a	108	1m	
9 3F4	$\frac{7}{9}$	1m	
10 4F9	0.19	1m	
11 4F4	$\frac{8}{7}$ or $1\frac{1}{7}$	1m	
12 5C7b	539	1m	
13 5C2	68,700	1m	
14 4C2	1,801	1m	
15 5C8a	89	1m	
16 5C6b	69,000	1m	
17 5F10	52.05	1m	

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18 5C7b	1,242	1m	
19 5F4	$\frac{7}{6}$ or $1\frac{1}{6}$	1m	
20 6F9b	66.72	1m	
21 5C2	10,241	1m	
22 5F10	28.54	1m	
23 6c7a	<p>Award TWO marks for the correct answer of 16,175</p> <p>If the answer is incorrect, award ONE mark for a formal method of long multiplication with no more than ONE arithmetic error, e.g.</p> $\begin{array}{r} 6\ 4\ 7 \\ \times \quad 2\ 5 \\ \hline 3\ 2\ 3\ 5 \\ 1\ 2\ 9\ 4\ 0 \\ \hline 1\ 6\ 1\ 6\ 5 \end{array} \text{ (error)}$ <p>OR</p> $\begin{array}{r} 6\ 4\ 7 \\ \times \quad 2\ 5 \\ \hline 3\ 2\ 3\ 5 \\ 1\ 2\ 9\ 7\ 0 \\ \hline 1\ 6\ 2\ 0\ 5 \end{array} \text{ (error)}$	Up to 2m	<p>Working must be carried through to reach a final answer for the award of ONE mark.</p> <p>Do not award any marks if the error is in the place value, e.g. the omission of the zero when multiplying the tens:</p> $\begin{array}{r} 6\ 4\ 7 \\ \times \quad 2\ 5 \\ \hline 3\ 2\ 3\ 5 \\ 1\ 2\ 9\ 4 \text{ (place value error)} \\ \hline 4\ 5\ 2\ 9 \end{array}$
24 5F5	$\frac{12}{7}$ or $1\frac{5}{7}$	1m	
25 6R2	320	1m	
26 5F10	34.881	1m	
27 6F4	$5\frac{1}{6}$	1m	

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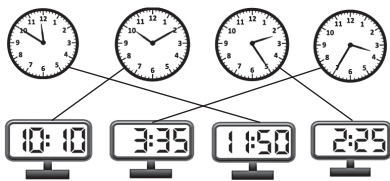
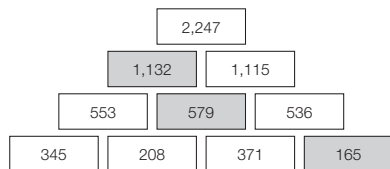
<p>28 6C7b</p>	<p>Award TWO marks for the correct answer of 44</p> <p>If the answer is incorrect, award ONE mark for a formal method of division with no more than ONE arithmetic error, i.e.</p> <ul style="list-style-type: none"> long division algorithm, e.g. $ \begin{array}{r} 44 \text{ r } 2 \\ 23 \overline{) 1012} \\ \underline{- 92} \\ 94 \\ \underline{- 92} \\ 2 \end{array} $ <p>(4 x 23) (error) (4 x 23)</p> <p>OR</p> $ \begin{array}{r} 47 \\ 23 \overline{) 1012} \\ \underline{- 91} \\ 94 \\ \underline{- 94} \\ 0 \end{array} $ <p>(error) (4 x 23) (4 x 23)</p> <ul style="list-style-type: none"> short division algorithm, e.g. $ \begin{array}{r} 43 \text{ r } 13 \\ 23 \overline{) 101^8 2} \end{array} $ <p>(error in carrying digit)</p>	<p>Up to 2m</p>	
<p>29 6C7a</p>	<p>Award TWO marks for the correct answer of 23,328</p> <p>If the answer is incorrect, award ONE mark for a formal method of long multiplication with no more than ONE arithmetic error, e.g.</p> $ \begin{array}{r} 432 \\ \times 54 \\ \hline 1728 \\ 21600 \\ \hline 23308 \text{ (error)} \end{array} $ <p>OR</p> $ \begin{array}{r} 432 \\ \times 54 \\ \hline 1728 \\ 21650 \text{ (error)} \\ \hline 23378 \end{array} $	<p>Up to 2m</p>	<p>Working must be carried through to reach a final answer for the award of ONE mark.</p> <p>Do not award any marks if the error is in the place value, e.g. the omission of the zero when multiplying the tens:</p> $ \begin{array}{r} 432 \\ \times 54 \\ \hline 1728 \\ 2160 \text{ (place value error)} \\ \hline 3888 \end{array} $

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30 5C5d	343	1m	
31 6C7b	<p>Award TWO marks for the correct answer of 56</p> <p>If the answer is incorrect, award ONE mark for a formal method of division with no more than ONE arithmetic error, i.e.</p> <ul style="list-style-type: none"> long division algorithm, e.g. $ \begin{array}{r} 5 \ 5 \ r \ 45 \\ 4 \ 7 \overline{) 2 \ 6 \ 3 \ 2} \\ - \ 2 \ 3 \ 5 \quad (5 \times 47) \\ \hline 2 \ 8 \ 0 \quad (\text{error}) \\ - \ 2 \ 3 \ 5 \quad (5 \times 47) \\ \hline 4 \ 5 \end{array} $ <p>OR</p> $ \begin{array}{r} 5 \ 8 \quad (\text{error}) \\ 4 \ 7 \overline{) 2 \ 6 \ 3 \ 2} \\ - \ 2 \ 3 \ 5 \quad (5 \times 47) \\ \hline 2 \ 8 \ 2 \\ - \ 2 \ 8 \ 2 \quad (6 \times 47) \\ \hline 0 \end{array} $ <ul style="list-style-type: none"> short division algorithm, e.g. $ \begin{array}{r} 5 \ 3 \ r \ 41 \\ 4 \ 7 \overline{) 2 \ 6 \ 3} \text{ }^{18}2 \quad (\text{error in carrying digit}) \end{array} $	2m	
32 6C6	198	1m	
33 6F5b	$\frac{4}{21}$	1m	
34 6F5a	$\frac{1}{6}$	1m	
35 6R2	150	1m	
36 6F9b	1.26	1m	

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2 - Reasoning (Out of 35 marks)

Question NC ref code	Requirement	Mark	Additional guidance						
1 3N2a	145 <input type="text"/> 405 769 <input type="text"/> 967 110 <input type="text"/> 101	1m	All three correct for ONE mark.						
2 4M4a		1m	All four correct for ONE mark.						
3 3C8	183 spring bulbs	Up to 2m	If answer is incorrect, award ONE mark for evidence of an appropriate method which contains no more than ONE mathematical error.						
4 3N3	906	1m							
5 3S1	a) 20	1m							
	b) Superman	1m							
6 4C4		1m	Award ONE mark for three correct answers						
7 4M5	<div><div>$\frac{1}{2}$ an hour</div><div>45 minutes</div><div>1 hour 5 minutes</div><div>75 minutes</div></div>	1m	Accept times given in minutes only.						
8 5F2a	<table><tr><td>Improper fraction</td><td>Mixed number</td></tr><tr><td>$\frac{13}{9}$</td><td><div><div>1</div>$\frac{4}{9}$</div></td></tr><tr><td>$\frac{25}{6}$</td><td><div>4$\frac{1}{6}$</div></td></tr></table>	Improper fraction	Mixed number	$\frac{13}{9}$	<div><div>1</div>$\frac{4}{9}$</div>	$\frac{25}{6}$	<div>4$\frac{1}{6}$</div>	1m	Award ONE mark for two correct answers
	Improper fraction	Mixed number							
$\frac{13}{9}$	<div><div>1</div>$\frac{4}{9}$</div>								
$\frac{25}{6}$	<div>4$\frac{1}{6}$</div>								
9 5F8	a) 39.95	1m	Accept any indication for correct answer.						

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<div>10</div> <div>6C7a</div>	<div>Award TWO marks for both digits correct, as shown:</div> <div><table><tr><td></td><td></td><td></td><td></td><td>4</td><td>8</td><td></td></tr><tr><td>5</td><td>2</td><td>2</td><td>4</td><td>9</td><td>6</td><td></td></tr><tr><td></td><td>-</td><td>2</td><td>0</td><td>8</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td>4</td><td>1</td><td>6</td><td></td></tr><tr><td></td><td></td><td></td><td>4</td><td>1</td><td>6</td><td></td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>0</td><td></td></tr></table></div>					4	8		5	2	2	4	9	6			-	2	0	8						4	1	6					4	1	6							0		<div>Up to 2m</div> <div>If the answer is incorrect, award ONE mark for one digit correctly placed.</div>
				4	8																																							
5	2	2	4	9	6																																							
	-	2	0	8																																								
			4	1	6																																							
			4	1	6																																							
					0																																							
<div>11</div> <div>6c8</div>	<div>91,581</div>	<div>Up to 2m</div> <div>If answer is incorrect, award ONE mark for evidence of an appropriate method which contains no more than ONE mathematical error.</div>																																										
<div>12</div> <div>5N3b</div>	<div>XIX LXX XV CCC</div>	<div>Up to 2m</div> <div>Award TWO marks for all four correct answers. Award ONE mark for three correct answers.</div>																																										
<div>13</div> <div>6F11</div>	<div>0.75</div>	<div>1m</div>																																										
	<div>$\frac{3}{4}$</div>	<div>1m</div>																																										
<div>14</div> <div>5M9b</div>	<div>18</div>	<div>Up to 2m</div> <div>If answer is incorrect, award ONE mark for evidence of an appropriate method which contains no more than ONE mathematical error.</div>																																										
<div>15</div> <div>6G5</div>	<div>a)</div> <div><div><div>circumference</div><div>radius</div><div>diameter</div></div><div></div></div>	<div>1m</div>																																										
	<div>b) 43cm</div>	<div>1m</div>																																										
<div>16</div> <div>5M9a</div>	<div>£17.75</div>	<div>Up to 2m</div> <div>If answer is incorrect, award ONE mark for evidence of an appropriate method which contains no more than ONE mathematical error.</div>																																										

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17 6S1	a) 25 girls	1m	
	b) Award ONE mark for an explanation which recognises that the two pie charts represent different numbers of children, e.g: Half of 50 boys chose milk = 25 The size of the sector in girls' pie chart is more than a quarter and a quarter of 100 is 25 so more than boys.	1m	Do not accept vague or incomplete explanation s e.g. '100 is more than 50' or 'More girls took part than boys so more girls like milk chocolate'
18 6R2	a) 72	1m	
	b) £245	Up to 2m	If answer is incorrect, award ONE mark for evidence of an appropriate method which contains no more than ONE mathematical error.
19 5F5 5F5	a) $\frac{5}{5}$ or 1	1m	
	b) $\frac{4}{10}$ or $\frac{2}{5}$	1m	
20 5F 5C	6,024	Up to 3m	Award THREE marks for the correct answer of 6,024 If the answer is incorrect, award TWO marks for the correct answer of: $47,098 + 10,109 = 36,989$ $36,989 + 16,987 = 53,976$ $60,000 - 53,976$ If the answer is incorrect, award ONE mark for the correct answer of: $47,098 + 10,109 = 36,989$ $36,989 + 16,987 = 53,976$

3 - Reasoning (Out of 35 marks)

Question NC ref code	Requirement	Mark	Additional guidance
1 4M1	-7 and 7	1m	Both answers required for ONE mark and in the correct order shown.
2 4M9	Yes circled or indicated with an explanation to show that the total cost of lunch is £7.10	1m	
3a 5M7a	62cm	1m	
3b 5M7b	36cm ²	1m	
4a 5S1 / 5N5	Oslo	1m	
4b 5S1/ 5N5	8 °C	1m	
4c 5S1 / 5N5	14 °C	1m	
5 5C8a	9 ²	1m	
6 5F12	$\frac{1}{4}$ is equivalent to 0.20 <input type="checkbox"/> x 30% is the same as $\frac{3}{10}$ <input checked="" type="checkbox"/> 0.4 is equivalent to $\frac{2}{5}$ <input checked="" type="checkbox"/> $\frac{3}{25}$ is equivalent to 12.25% <input type="checkbox"/> x 15% is the same as 0.15 <input checked="" type="checkbox"/>	Up to 2m	If the answer is incorrect, award ONE mark for four out of five correct statements
7 5M9c	550g	Up to 2m	If answer is incorrect, award ONE mark for evidence of an appropriate method which contains no more than ONE mathematical error.
8 4F10a	Any 12 out of 18 triangles shaded.	1m	

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9 6N2	Nine million, six hundred and seventy-five thousand, two hundred and seventeen.	1m													
10a 6A2	145 minutes or 2 hours 25 minutes	Up to 2m	If answer is incorrect, award ONE mark for evidence of an appropriate method which contains no more than ONE												
10b 5M4	12:35pm	1m													
11 6G4a	$a = 48^\circ$	1m													
	$b = 42^\circ$	1m													
12 5C6b	<table><tr><td>x</td><td>10</td><td>100</td><td>1,000</td></tr><tr><td>8</td><td>80</td><td>800</td><td>8,000</td></tr><tr><td>1.2</td><td>12</td><td>120</td><td>1,200</td></tr></table>	x	10	100	1,000	8	80	800	8,000	1.2	12	120	1,200	1m	Award ONE marks for all four correct answers.
x	10	100	1,000												
8	80	800	8,000												
1.2	12	120	1,200												
13 6P3	a) (12,0) b) (9,-8)	Up to 2m													
14 5C5a 6C5	Alex = 3 or 9 Dan = 36	Up to 2m													
15 6N4	<table><tr><td>Number</td><td>Rounded to nearest 1,000</td><td>Rounded to nearest 100,000</td></tr><tr><td>219,704</td><td>220,000</td><td>200,000</td></tr><tr><td>852,081</td><td>852,000</td><td>900,000</td></tr></table>	Number	Rounded to nearest 1,000	Rounded to nearest 100,000	219,704	220,000	200,000	852,081	852,000	900,000	Up to 2m	Award ONE mark for 2 out of 3 missing boxes correctly completed.			
Number	Rounded to nearest 1,000	Rounded to nearest 100,000													
219,704	220,000	200,000													
852,081	852,000	900,000													
16 6M6	a) 48 km b) 55 miles	2m	Award ONE mark for both statements correctly ticked.												
17 6R4	£460	Up to 3m	If answer is incorrect, award TWO marks for the correct calculations of finding one third, one fifth and one twelfth of the £1200. Award ONE mark for only two out of the three fractions calculations.												
18 6A4	Award TWO marks for the correct answer of 55p OR £0.55.	2m	If the answer is incorrect, award ONE mark for evidence of appropriate working.												

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<p>19 Code 5C (5C6b / 5C6a)</p>	<p>262</p>	<p>Up to 2m</p>	<p>Award TWO marks for the correct answer of 262</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"> • $2,075 + 3,679 = 5,754$ $5,754 - 5,492$ <p>Answer need not be obtained for the award of ONE mark.</p>
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