Cambridge International Examinations
Cambridge Secondary 1 Checkpoint

MATHEMATICS **1112/02**

Paper 2 **April 2016**

MARK SCHEME

Maximum Mark: 50

IMPORTANT NOTICE

Mark Schemes have been issued on the basis of **one** copy per Assistant examiner and two copies per Team Leader.

This document consists of **10** printed pages.

CAMBRIDGE International Examinations

Question number	1		
Part	**Mark**	**Answer**	**Further Information**
(a)	1	7 (kg)	
(b)	1	55 (g)	
Total	**2**		

Question number	2		
Part	**Mark**	**Answer**	**Further Information**
	1	28 (cm) 30 (cm) 320 (mm) 0.35 (m)	
Total	**1**		

Question number	3		
Part	**Mark**	**Answer**	**Further Information**
	1	10 (minibuses)	
Total	**1**		

Question number	4		
Part	**Mark**	**Answer**	**Further Information**
	2	☐ ☑ ☐ ☑ ☐ ☐ ☐ ☐ ☑	Award 1 mark if 2 ticks are correctly placed.
Total	**2**		

Question number	5		
Part	**Mark**	**Answer**	**Further Information**
	1	18 (edges)	
Total	**1**		

Question number	6		
Part	**Mark**	**Answer**	**Further Information**
	2	(17 to) 24 25 to 32	Award 1 mark for 2 correct numbers **or** if second interval has gap of 7 with any integer starting point greater than 17.
Total	**2**		

Question number	7		
Part	**Mark**	**Answer**	**Further Information**
(a)	1	Kendra has 3 more birds than cats. ☐ Kendra has 3 more cats than birds. ✓ Kendra has 1 cat and 3 birds. ☐ Kendra has 3 birds and 1 cat. ☐	
(b)	1	$r = 2b$ (or equivalent)	
Total	**2**		

Question number	8		
Part	**Mark**	**Answer**	**Further Information**
(a)	1	$\frac{1}{7}$	Accept decimal rounding to 0.14 (or percentage rounding to 14%). Do not accept ratio notation (e.g. 1 : 7) or an answer expressed in words (e.g. unlikely or 1 out of 7).
(b)	1	$\frac{3}{7}$	Accept decimal rounding to 0.43 (or percentage rounding to 43%). Do not accept ratio notation (e.g. 3 : 7) or an answer expressed in words.
(c)	1	$\frac{4}{7}$	Accept decimal rounding to 0.57 (or percentage rounding to 57%). Do not accept ratio notation (e.g. 4 : 7) or an answer expressed in words.
Total	**3**		

Question number	9		
Part	**Mark**	**Answer**	**Further Information**
(a)	1	(x =) 11	
(b)	2	(n =) 7	Award 1 mark for correct first step at simplifying equation, e.g. sight of any of: • $4n + 3 = 31$ • $6n = 2n + 28$ • $4n = 28$ • $3 = -4n + 31$ • $6n - 28 = 2n$
Total	**3**		

Question number	10		
Part	**Mark**	**Answer**	**Further Information**
	1	43(.3566…%)	
Total	**1**		

Question number	11		
Part	**Mark**	**Answer**	**Further Information**
	1	45 (minutes)	
Total	**1**		

Question number	12		
Part	**Mark**	**Answer**	**Further Information**
	2	$\frac{1}{(4)}$ = (0.) 25 $\frac{4}{(5)}$ = 80 (%)	Award 1 mark for either statement correct **or** for sight of one of these statements: $\frac{2}{4}$ = 0.5(0) $\frac{1}{5}$ = 20% $\frac{2}{5}$ = 40%
Total	**2**		

<table>
<tr><td>Question number</td><td>13</td><td colspan="2"></td></tr>
<tr><td>Part</td><td>Mark</td><td>Answer</td><td>Further Information</td></tr>
<tr><td></td><td>2</td><td>
<table>
<tr><th>Property</th><th>Name of quadrilateral</th></tr>
<tr><td>All sides equal</td><td>Square</td></tr>
<tr><td>Two sets of parallel sides</td><td>Rhombus or Parallelogram or Rectangle</td></tr>
<tr><td>Diagonals are equal in length</td><td>Rectangle (or Isosceles trapezium)</td></tr>
<tr><td>Rotational symmetry of order 2</td><td>Parallelogram or Rhombus or Rectangle</td></tr>
</table>
</td><td>For 2 marks, there should be 1 quadrilateral in each cell and the names written should all be different.

Do not allow square for two marks.

<table>
<tr><td>For 1 mark, 2 cells containing only correct quadrilaterals from the below</td></tr>
<tr><td>Square</td></tr>
<tr><td>• Rhombus
• Parallelogram
• Rectangle
• Square</td></tr>
<tr><td>• Rectangle
• Isosceles trapezium
• Square</td></tr>
<tr><td>• Parallelogram
• Rhombus
• Rectangle
• Square</td></tr>
</table>
</td></tr>
<tr><td>Total</td><td>2</td><td colspan="2"></td></tr>
</table>

Question number	**14**		
Part	**Mark**	**Answer**	**Further Information**
(a)	1	$3a^2$	
(b)	1	$9 - 2a$ (or $-2a + 9$)	
Total	**2**		

Question number	15		
Part	**Mark**	**Answer**	**Further Information**
(a)	2	x | | 4 | y | | | 960	Award 1 mark for each correct answer.
(b)	1	$y = 32x$ **or** $x = \frac{y}{32}$ or equivalent	
Total	**3**		

Question number	16		
Part	**Mark**	**Answer**	**Further Information**
	1	13.6 | 136 000 196.5 | 1965 000	
Total	**1**		

Question number	17		
Part	**Mark**	**Answer**	**Further Information**
(a)	1	$3n + 4$	Do not accept $n = 3n + 4$
(b)	1	3004	Follow through from **(a)** for 1000 substituted for n and evaluated correctly.
Total	**2**		

Question number	18		
Part	**Mark**	**Answer**	**Further Information**
	2	Second team 1 7 2 0 0 1 3 4 3 5 8 4 0 1 2	Award 1 mark for unordered. **or** Award 1 mark for 1 error or omission. Unordered plus error or omission is no marks.
Total	**2**		

Question number	19		
Part	**Mark**	**Answer**	**Further Information**
	1	$(x \rightarrow)\ 4x$	
Total	**1**		

Question number	20		
Part	**Mark**	**Answer**	**Further Information**
	2	0.54 (m^3)	Award 1 mark for 1.2 × 0.6 × 0.75 **or** 120 × 60 × 75 **or** 540 000 seen.
Total	**2**		

Question number	21		
Part	**Mark**	**Answer**	**Further Information**
	1	increase **and** 120	
Total	**1**		

uestion number	22		
Part	**Mark**	**Answer**	**Further Information**
	2	$9^2 \times 9^7 \times 9$ $9^{13} \div 9^3$ $3^4 \times 3^6$ $9^{20} \div 9^2$ $9^5 \times 9^2$	Award 1 mark if one or two correct answers are ringed with at most one incorrect answer.
Total	**2**		

Question number	23		
Part	**Mark**	**Answer**	**Further Information**
(a)	1	$6(3 - 2e)$	
(b)	2	$-3c - 14d$ or $-14d - 3c$	Accept $-(3c + 14d)$ or $-(14d + 3c)$ Award 1 mark for $4c - 14d - 7c$ seen **or** follow through from an incorrect expansion to award 1 mark for correct simplification e.g. $4c - 14d + 7c$ leading to $11c - 14d$
Total	**3**		

Question number	24		
Part	**Mark**	**Answer**	**Further Information**
	2	80 (km/h)	Award 1 mark for $180 \div 2.25$ or equivalent. e.g. $180 \times \frac{4}{9}$ or $180 \times \frac{60}{135}$ Do not accept use of 2.15 instead of 2.25
Total	**2**		

Question number	25		
Part	**Mark**	**Answer**	**Further Information**
	1	(x =) 10 **and** (y =) 40	
Total	**1**		

Question number	26		
Part	**Mark**	**Answer**	**Further Information**
	3	Rotation 90(°) (or ¼ turn) anticlockwise Centre (3,9)	Award 1 mark for each. Do not accept 'turn right' or 'turn left' for the direction of turn.
Total	**3**		

Question number	27		
Part	**Mark**	**Answer**	**Further Information**
	2	Manuel **and** gives correct working. Correct working could involve finding how many litres of petrol Lotte buys (27.5 litres) **or** finding the cost of Manuel's petrol ($41.32 or $41.318).	Award 1 mark for sight of a correct method that could be used to make a comparison. This is likely to be $\frac{28.3}{18.5} \times 27.01$ (oe) (implied by 41.318 seen) **or** $\frac{40.15}{27.01} \times 18.5$ (oe) (implied by 27.5 seen) **or** Award 1 marks for 41.3 seen and Manual ticked **or** for 'Lotte buys 28' or 'Lotte buys 27' and Manuel ticked
Total	**2**		