



OXFORD CAMBRIDGE AND RSA EXAMINATIONS

General Certificate of Secondary Education

MATHEMATICS A

A503/01

Unit C (Foundation)

Specimen Mark Scheme

The maximum mark for this paper is **100**.

This document consists of **6** printed pages and **2** blank pages.

1	(a)	8	1	
	(b)	27	2	M1 for $45 \div 5 \times 3$ soi
	(c)	12	2	M1 for $\frac{15}{100} \times 80$ soi
	(d)	$\frac{2}{15}$	1	
2	(a)	b 4 a	1 1 1	
	(b)	(i) $\frac{3}{9}$ oe	1	
		(ii) 1 oe	1	
	(c)	$\frac{4}{5} > \frac{4}{9}$ (Sanjiv)	2	M1 for $\frac{4}{5}$ or $\frac{4}{9}$ shown
3		Cylinder Cube Pyramid	1 1 1	
4	(a)	-7	1	
	(b)	Plymouth and Sheffield	1	
	(c)	3	1	
	(d)	October 1 for each (correct) supporting piece of evidence cited from chart or table	1 4	With no explanation May not necessarily be numerical Max. 4 e.g. Apr/Jul/Aug/Sep/Oct are 25–30°C April/September have 2 stormy days and October has 1 stormy day April and October have 1 cm of rain
5	(a)	Three rectangles drawn where length add width = 8 cm	3	1 for each correct. Extras count as choice
	(b)	Calculates the area of each of <i>their</i> rectangles and multiplies by £3.60 Makes comment about costs	2ft 1ft	1 for two correct dep on at least two costs found
6	(a)	(i) 16	1	
		(ii) 64	1ft	ft 4 × <i>their</i> (a)
	(b)	(i) 30	1	
		(ii) 34	2ft	<i>Their</i> (a)(ii) – <i>their</i> (b)(i) NB alternative answers possible M1 for cube number shown e.g. 64, 125, etc Accept answers for bigger cubes eg $125 - 30 = 95$, $216 - 30 = 186$

7		B D E C	4	1 for each correct
8	(a)	1·11(11...) oe	2	B1 for 12·6 ÷ 11·34
	(b)	$\frac{13}{35}$ or 0·371...	1	
	(c)	8·169 or 8·17 or 8·2	2	B1 for 66·73 seen
9	(a)	(i) 11.00 am	1	
		(ii) 50 minutes	1	
	(b)	4 hours oe	2	M1 for identifying the 2.30 boat from Seacombe
10		10	3	B2 for 9·3 or better Or M1 for $\frac{2}{3} \times 2 \times 7$
11	(a)	All 9 pairs correct	2	B1 for 4 correct pairs Ignore entries in shaded sections
	(b)	(i) Cannot play themselves oe	1	
		(ii) Play each other once only	1	
12	(a)	20	2	M1 for 50 ÷ 2·5 oe Condone 2.30 for M1
	(b)	BC, steeper line	1	
	(c)	Horizontal line to (4,120) Line from <i>their</i> (4,120) to (6,0)	1 1ft	By eye May be curve as long as no vertical part
13	(a)	(i) 26·46	2	M1 for 4·2 × 6·3
		(ii) 30	2	M1 for $\frac{1}{2} (5 \times 12)$ oe
		(iii) 9·8	3	M2 for complete correct method shown M1 for 0·8 or 2·2 seen
	(b)	38·5 cm ³	2 1	M1 for 2·2 × 5 × 3·5 Indep
14	(a)	(i) 12x	1	
		(ii) -x + 5y final answer	2	B1 for either term
	(b)	20a + 8 final answer	1	
	(c)	3x (2 – 3y)	2	M1 for 3x (...) or 3(2x – 3xy) or x(6 – 9y)

15	(a)	(i) 100	1	
		(ii) 80	1	
	(b) *	<p>A clear comprehensive answer that addresses the major issues (costs the same for both companies for 250 miles, Econospeed cheaper for below 250 miles and Smoothstyle cheaper for greater than 250 miles). Answer is coherent and uses correct spelling, punctuation and grammar and perhaps uses accurate graphs, tables or algebra.</p> <p>Some understanding of the problem shown – some values either side of 250 miles correctly calculated for both companies – with a structure and strategy evident without clear conclusions – could be on graph, table or written. No more than two errors in spelling, punctuation and grammar.</p> <p>At least two correct values found for different mileages between 100 and 350 for at least one company with a comment. Weaker communication and little structure to solution with possible errors in spelling, punctuation and grammar.</p> <p>No relevant content</p>	<p>5-6</p> <p>3-4</p> <p>1-2</p> <p>0</p>	<p>For the lower mark – there may be a slight slip in the mathematics or minor errors in spelling, punctuation or grammar.</p> <p>For the lower mark – look for a weaker structure, more random attempts at values and weak comments not addressing the original costs problem.</p> <p>For the lower mark – random attempts to find at least two values but with one error – no conclusions or comments made.</p>
16	(a)	2 and 7	1	
	(b)	7 correct points plotted Curve within 2mm of their points Parabola shape	1ft 1	
	(c)	Reads both values from curve at $y = 1$ within 1 mm	1ft	

17	(a)	$\frac{1}{6}$	1																																																		
	(b)	<p style="text-align: center;">Red dice</p> <table style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> </tr> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> </tr> <tr> <td>2</td> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> </tr> <tr> <td>3</td> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> </tr> <tr> <td>4</td> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> </tr> <tr> <td>5</td> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> </tr> <tr> <td>6</td> <td>7</td> <td>8</td> <td>9</td> <td>10</td> <td>11</td> <td>12</td> </tr> </table>		1	2	3	4	5	6	1	2	3	4	5	6	7	2	3	4	5	6	7	8	3	4	5	6	7	8	9	4	5	6	7	8	9	10	5	6	7	8	9	10	11	6	7	8	9	10	11	12	2	B1 for 20 correct entries
	1	2	3	4	5	6																																															
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	(c)	(i) $\frac{8}{36}$ oe	2	1 for numerator or denominator																																																	
		(ii) $\frac{6}{36}$ oe	1																																																		
	(d)	Michael 32 Henna 24	1ft 1ft	ft 4 times <i>their</i> (c)(i) numerator ft 4 times <i>their</i> (c)(ii) numerator																																																	
18		Value between 1 and 2 inclusive 1·8 or 1·9 Value between 1·8 and 1·9 1·8	1 1 1 1	Or after 1·8 and 1·9 used, mention of closer to 1·8																																																	

Assessment Objectives and Functional Elements Grid

GCSE MATHEMATICS A

A503/01: Unit C (Foundation)

Qn	Topic	AO1	AO2	AO3	Functional
1	Calculations	6			
2	Probability	5		2	2
3	Nets of shapes and names	3			
4	Negatives and temperature		3	5	7
5	Rectangular patios		3	3	6
6	Counting cubes	2	1	2	2
7	Views	4			
8	Calculator work	5			
9	Timetable and costings		4		2
10	Fractions			3	3
11	Listing		4		2
12	Dist/time graph		3	2	
13	Areas and volumes	10			
14	Collect like terms, expand, factorise	6			
15	Hire costs problem	2		6	6
16	Quadratic graph	4			
17	Sample space and probability dice game		8		
18	Trial and improvement	4			
	TOTAL	51	26	23	30