
MATHEMATICS

1112/02

Paper 2

For Examination from 2017

SPECIMEN MARK SCHEME

MAXIMUM MARK: 50

This document consists of **9** printed pages and **1** blank page.

Question	1		
Part	Mark	Answer	Further Information
	2	grams metres litres	Accept abbreviations. Award 1 mark for any two correct. Accept m ³ or cubic metres rather than litres.
Total	2		

Question	2		
Part	Mark	Answer	Further Information
	1	7	
Total	1		

Question	3		
Part	Mark	Answer	Further Information
	1	$15n + 21$	
Total	1		

Question	4		
Part	Mark	Answer	Further Information
(a)	1	68	
(b)	1	9.7 (142...)	Follow through from (a) as their (a) ÷ 7. Accept 10 if working is seen.
Total	2		

Question	5			
Part	Mark	Answer	Further Information	
	2	(\$)87.20	Award 1 method mark for either 43.2 or 44 seen. or 7.20 × 6 + 8.80 × 5 seen.	
Total	2			

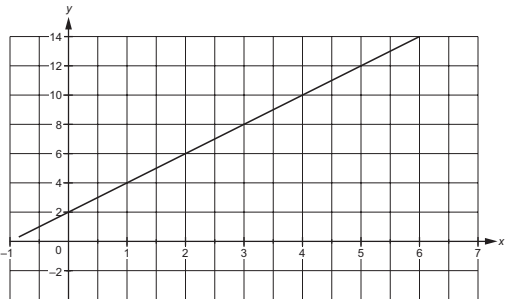
Question	6			
Part	Mark	Answer	Further Information	
	1	560 (cm ³)		
Total	1			

Question	7			
Part	Mark	Answer	Further Information	
	2	($n =$) 9.5 or equivalent	Award 1 mark for a correct first step that reduces the number of terms, e.g. $2n - 5 = 14$ $4n = 2n + 19$ (or better)	
Total	2			

Question	8																			
Part	Mark	Answer	Further Information																	
	2	<table border="1"> <tbody> <tr> <td>Grade 7</td> <td>11</td> <td>18</td> <td>16</td> <td>45</td> </tr> <tr> <td>Grade 8</td> <td>22</td> <td>19</td> <td>34</td> <td>75</td> </tr> <tr> <td>Total</td> <td>33</td> <td>37</td> <td>50</td> <td>120</td> </tr> </tbody> </table>	Grade 7	11	18	16	45	Grade 8	22	19	34	75	Total	33	37	50	120	1 mark for 3 correct.		
Grade 7	11	18	16	45																
Grade 8	22	19	34	75																
Total	33	37	50	120																
Total	2																			

Question	9		
Part	Mark	Answer	Further Information
(a)	1	4, 3	
(b)	2		Award 1 mark for a correct reflection in an incorrect vertical mirror line or $y = 1$.
(c)	1	5, 0	
(d)	1	2 (cm ²)	
Total	5		

Question	10		
Part	Mark	Answer	Further Information
	2	(\$)24	Award 1 mark for 8 seen. or $\frac{72}{9} \times 3$ seen.
Total	2		

Question	11												
Part	Mark	Answer	Further Information										
(a)	1	<table border="1"> <tr> <td>x</td> <td>0</td> <td>2</td> <td>4</td> <td>6</td> </tr> <tr> <td>y</td> <td>2</td> <td>6</td> <td>10</td> <td>14</td> </tr> </table>	x	0	2	4	6	y	2	6	10	14	All 3 correct for the mark.
x	0	2	4	6									
y	2	6	10	14									
(b)	1		<p>Follow through from (a) provided line drawn is straight.</p> <p>Line must extend at least from $x = 0$ to $x = 6$.</p>										
(c)	1	<p>$x = 2.5$ (accept 2.4 – 2.6 inclusive)</p> <p>$y = 7$ (accept 6.9 – 7.1 inclusive)</p>	<p>Both correct for one mark.</p> <p>Follow through from (b) if there is a single intersection.</p>										
Total	3												

Question	12		
Part	Mark	Answer	Further Information
	1	5.455	
Total	1		

Question	13		
Part	Mark	Answer	Further Information
	1	<p>An answer that implies that each angle in a regular pentagon is 108° (or that the sum of the angles is 540°)</p> <p>or</p> <p>An answer that implies that each exterior angle in a regular pentagon is 72°.</p>	
Total	1		

Question	14		
Part	Mark	Answer	Further Information
	1	$y(y - 8)$	
Total	1		

Question	15		
Part	Mark	Answer	Further Information
(a)	1	22 (minutes)	
(b)	1	9 (minutes)	
(c)	1	27 (minutes)	
Total	3		

Question	16		
Part	Mark	Answer	Further Information
	2	6.25(%)	Award 1 mark for $500 \div 8000$ or 0.0625 or 93.75 or $1 - 0.9375$
Total	2		

Question	17		
Part	Mark	Answer	Further Information
	1	$(x + 3) (\boxed{x} - \boxed{4}) = x^2 - x - 12$	In correct order.
Total	1		

Question	18		
Part	Mark	Answer	Further Information
	1	92900 000 (miles)	
Total	1		

Question	19		
Part	Mark	Answer	Further Information
(a)	1	(\$)310 (accept answers between 307 and 313 inclusive)	
(b)	1	Puts a ring around \$530 and gives a suitable reason (e.g. it fits in with the other points) or if a line of best fit is referred to.	
Total	2		

Question	20		
Part	Mark	Answer	Further Information
	4	1 mark for correct answer of $x = 7.1$ 1 mark for at least 4 correct trials. 1 mark for evidence of 'improvement' (trials getting closer to 7.1) 1 mark for a trial of 7.15	
Total	4		

Question	21																											
Part	Mark	Answer	Further Information																									
(a)	1	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>1</td> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> <tr> <td>2</td> <td>2</td> <td>4</td> <td>6</td> <td>8</td> </tr> <tr> <td>3</td> <td>3</td> <td>6</td> <td>9</td> <td>12</td> </tr> <tr> <td>4</td> <td>4</td> <td>8</td> <td>12</td> <td>16</td> </tr> </table>		1	2	3	4	1	1	2	3	4	2	2	4	6	8	3	3	6	9	12	4	4	8	12	16	All correct for 1 mark.
	1	2	3	4																								
1	1	2	3	4																								
2	2	4	6	8																								
3	3	6	9	12																								
4	4	8	12	16																								
(b)	1	$\frac{3}{4}$ or $\frac{12}{16}$ or equivalent	Follow through for their number of even numbers $\div 16$																									
Total	2																											

Question	22		
Part	Mark	Answer	Further Information
	3	20 (years)	<p>Award 1 mark for correctly converting 2 tonnes to 2000 kg. (seen or implied)</p> <p>Award 1 mark for ('their 2000'-105) \div 95</p> <p>or</p> <p>Award 2 marks for answer of 19 (with working) or 19.9</p>
Total	3		

Question	23		
Part	Mark	Answer	Further Information
	3	Any answer that corrects to 5.0 to 1dp .e.g. 5.0462 or 5.05	Award 2 marks for an answer of 2.5... or Award 1 mark for $A = \pi r^2$ seen or evidence of its use. Award 1 mark for $r^2 = \frac{20}{\pi}$ (= 6.3...)
Total	3		

Question	24		
Part	Mark	Answer	Further Information
	3	8.65(68...) (cm)	Award 3 marks for 8.7 or 8.66 (cm) or $3 + \sqrt{32}$ Award 2 marks for sight of 5.65(68) or $\sqrt{32}$ or equivalent e.g. $4\sqrt{2}$ Award 1 mark for $4^2 + 4^2 = 32$ or Any attempt at using Pythagoras' theorem.
Total	3		

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