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**MATHEMATICS**

**1112/01**

Paper 1

**For Examination from 2017**

SPECIMEN MARK SCHEME

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**MAXIMUM MARK: 50**

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This document consists of **11** printed pages and **1** blank page.

Question	1		
Part	Mark	Answer	Further Information
	1	3    56    (72)    93    146    (198)	
<b>Total</b>	<b>1</b>		

Question	2		
Part	Mark	Answer	Further Information
	2	25	Award 1 mark for 20, 15, 35 or $\frac{7}{12}$ or $\frac{5}{12}$
<b>Total</b>	<b>2</b>		

Question	3		
Part	Mark	Answer	Further Information
(a)	2	8 and 29	Award 1 mark for each.
(b)	1	$t = 7p - 6$	
<b>Total</b>	<b>3</b>		

Question	4		
Part	Mark	Answer	Further Information
(a)	1	Any two sections with odd numbers and four sections with even numbers.	
(b)	1	$\frac{2}{3}$	Or equivalent
<b>Total</b>	<b>2</b>		

<b>Question</b>	<b>5</b>		
<b>Part</b>	<b>Mark</b>	<b>Answer</b>	<b>Further Information</b>
	1	14	
<b>Total</b>	<b>1</b>		

<b>Question</b>	<b>6</b>		
<b>Part</b>	<b>Mark</b>	<b>Answer</b>	<b>Further Information</b>
(a)	1	111(°)	
(b)	1	<p>Angles in a triangle = 180°</p> <p><b>or</b></p> <p>Angles on a straight line = 180°</p> <p><b>or</b></p> <p>The external angle of a triangle is equal to the sum of the opposite interior angles.</p> <p><b>or</b></p> <p>The sum of an interior angle and its exterior angle = 180°</p>	
<b>Total</b>	<b>2</b>		

<b>Question</b>	<b>7</b>		
<b>Part</b>	<b>Mark</b>	<b>Answer</b>	<b>Further Information</b>
(a)	1	-7 (°C)	
(b)	1	-10 (°C)	
<b>Total</b>	<b>2</b>		

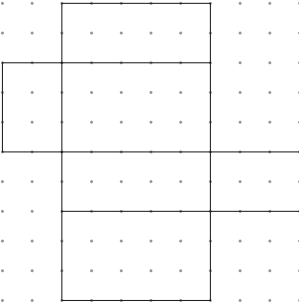
Question	8		
Part	Mark	Answer	Further Information
	1	0.7	Or equivalent Do not accept ratios.
<b>Total</b>	<b>1</b>		

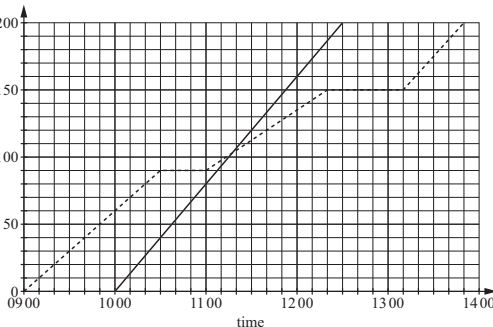
Question	9		
Part	Mark	Answer	Further Information
	2	Two calculations to enable comparison e.g. 72% of 50 = 36 and $\frac{1}{2}$ of 50 = 25 <b>or</b> 38 marks is 76% (or equivalent) and $\frac{1}{2} = 50\%$ <b>and</b> David scored the highest.	Do not award any marks for David with no correct working.  Award 1 mark for two correct calculations to enable comparison seen, but incorrect or no decision.
<b>Total</b>	<b>2</b>		

Question	10		
Part	Mark	Answer	Further Information
	1	$0.7 \times 1000$ ————— 7 $70 \times 0.1$ ————— 70 $700 \times 0.01$ ————— 700 $7000 \times 0.001$ ————— 7000 $700 \div 0.01$ ————— 70 000	All correct for 1 mark.
<b>Total</b>	<b>1</b>		

Question	11												
Part	Mark	Answer	Further Information										
	1	<table border="1"> <thead> <tr> <th>input</th> <th>output</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>5</td> </tr> <tr> <td>6</td> <td>15</td> </tr> <tr> <td>9</td> <td>21</td> </tr> <tr> <td>15</td> <td>33</td> </tr> </tbody> </table>	input	output	1	5	6	15	9	21	15	33	Both correct for the mark.
input	output												
1	5												
6	15												
9	21												
15	33												
<b>Total</b>	<b>1</b>												

Question	12		
Part	Mark	Answer	Further Information
(a)	1	38	
(b)	1	45.6	
(c)	1	4.56	
<b>Total</b>	<b>3</b>		

Question	13		
Part	Mark	Answer	Further Information
	1	<p>Award the mark for two 2 x 3 faces correctly positioned, one on each side of the net, e.g.</p> 	
<b>Total</b>	<b>1</b>		

Question	14		
Part	Mark	Answer	Further Information
(a)	1		Accuracy in drawing $\pm \frac{1}{2}$ square
(b)	1	80 minutes or equivalent	<p>Accept answers in hours and minutes e.g. 1 hour 20 (minutes)</p> <p>Follow through from (a) if their line reaches the top of the graph (<math>\pm \frac{1}{2}</math> square)</p>
<b>Total</b>	<b>2</b>		

Question	15		
Part	Mark	Answer	Further Information
	1	$0.2^2, \sqrt[3]{64}, \sqrt{25}, 3^2$	Accept 0.04, 4, 5, 9
<b>Total</b>	<b>1</b>		

Question	16		
Part	Mark	Answer	Further Information
(a)	2	5.616	Award 1 mark for attempting to multiply 156 by 36 (condone numerical errors but do not accept place value errors).
(b)	2	3.4	Award 1 mark for correct method (e.g. changing to $54.4 \div 16$ )
<b>Total</b>	<b>4</b>		

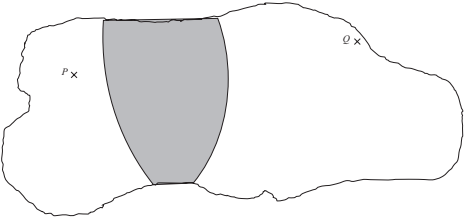
Question	17		
Part	Mark	Answer	Further Information
	2	$(n = ) 31$	Award 1 mark for sight of $n - 3$ or for an equation that simplifies to $2n - 3 = 59$ .  or  Award 1 mark for an answer of 28.
<b>Total</b>	<b>2</b>		

Question	18		
Part	Mark	Answer	Further Information
	2		<p>Accept <math>\pm 2^\circ</math> accuracy of bearings for 2 marks.</p> <p>Accept any clear indication of boat's position including intersecting lines.</p> <p>Award 1 mark for sight of a correct method (accept a line drawn from either <i>A</i> or <i>B</i> with bearing accurate to <math>\pm 2^\circ</math>).</p>
<b>Total</b>	<b>2</b>		

Question	19														
Part	Mark	Answer	Further Information												
	1	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;"></th> <th style="width: 10%; text-align: center;">True</th> <th style="width: 10%; text-align: center;">False</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><math>9^0 = 0</math></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><math>9^3 \times 9^2 = 9^5</math></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td style="text-align: center;"><input type="checkbox"/></td> </tr> <tr> <td style="text-align: center;"><math>9^8 \div 9^4 = 9^2</math></td> <td style="text-align: center;"><input type="checkbox"/></td> <td style="text-align: center;"><input checked="" type="checkbox"/></td> </tr> </tbody> </table>		True	False	$9^0 = 0$	<input type="checkbox"/>	<input checked="" type="checkbox"/>	$9^3 \times 9^2 = 9^5$	<input checked="" type="checkbox"/>	<input type="checkbox"/>	$9^8 \div 9^4 = 9^2$	<input type="checkbox"/>	<input checked="" type="checkbox"/>	All correct for 1 mark.
	True	False													
$9^0 = 0$	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
$9^3 \times 9^2 = 9^5$	<input checked="" type="checkbox"/>	<input type="checkbox"/>													
$9^8 \div 9^4 = 9^2$	<input type="checkbox"/>	<input checked="" type="checkbox"/>													
<b>Total</b>	<b>1</b>														



Question	20		
Part	Mark	Answer	Further Information
(a)	2	$\frac{11}{12}$ or equivalent fraction	Award 1 method mark for attempting to subtract two relevant fractions by converting to a common denominator (12 or a multiple of 12).
(b)	2	$3\frac{1}{5}$ or $\frac{16}{5}$ or equivalent fraction	Award 1 method mark for attempting to change to improper fractions and attempting to multiply numerators and denominators together.
<b>Total</b>	<b>4</b>		

Question	21		
Part	Mark	Answer	Further Information
	2		<p>1 mark for sight of an arc of a circle centred on <math>P</math> and <math>Q</math> with a radius accurate to <math>\pm 2\text{mm}</math></p> <p>Accept any clear indication of the correct region.</p>
<b>Total</b>	<b>2</b>		

Question	22		
Part	Mark	Answer	Further Information
(a)	1	19	
(b)	1	40	
<b>Total</b>	<b>2</b>		

Question	23		
Part	Mark	Answer	Further Information
	1	$-2 \leq n \leq 5$ <input type="checkbox"/> $-2 < n \leq 5$ <input checked="" type="checkbox"/> $-2 \leq n < 5$ <input type="checkbox"/> $5 \geq n < -2$ <input type="checkbox"/>	
<b>Total</b>	<b>1</b>		

Question	24		
Part	Mark	Answer	Further Information
(a)	1	32 (cm)	
(b)	1	165 (cm)	
(c)	2	Two distinct and valid comparative statements e.g. <ul style="list-style-type: none"> <li>▪ Class 8B is taller</li> <li>▪ The range of class B is larger</li> <li>▪ The median of 8B is higher than 8A</li> <li>▪ The tallest person is in Class B.</li> </ul>	Award 1 mark for 1 correct statement.
<b>Total</b>	<b>4</b>		

Question	25		
Part	Mark	Answer	Further Information
	3	(\$) $0.35$ or equivalent	<p>Award 1 mark for finding profit of \$2 or total \$7.</p> <p>Award 1 mark for their profit (including follow through from an incorrect profit) <math>\div 20</math></p> <p><b>or</b></p> <p>Award 1 mark for finding 1 can costs \$0.25</p> <p>Award 1 mark for their can cost (including follow through from an incorrect cost) <math>\times 1.4</math></p>
<b>Total</b>	<b>3</b>		

