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**MATHEMATICS****0845/02**

Paper 2

**October 2019**

MARK SCHEME

Maximum Mark: 40

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**Published**

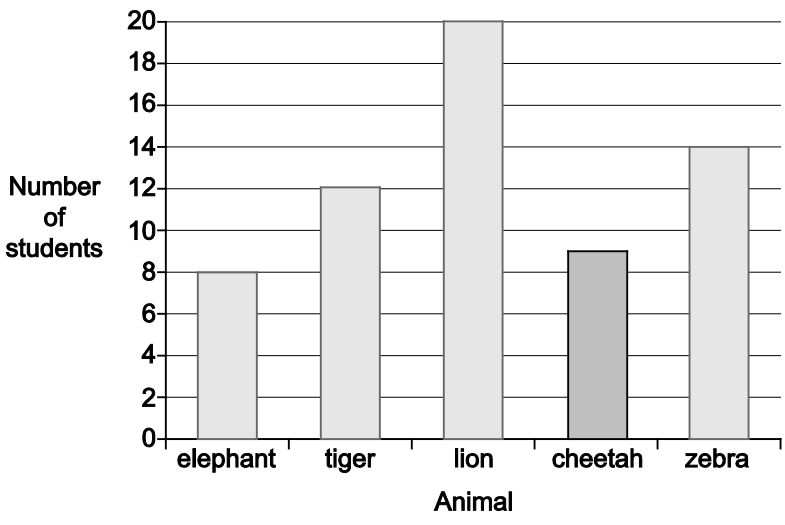
This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Markers were instructed to award marks. It does not indicate the details of the discussions that took place at an Markers' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the End of Series Report. Cambridge will not enter into discussions about these mark schemes.

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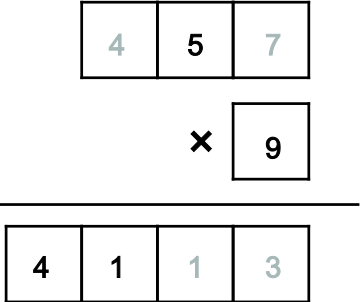
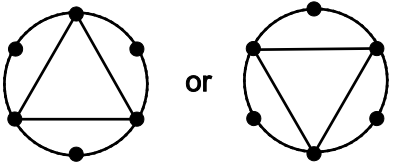
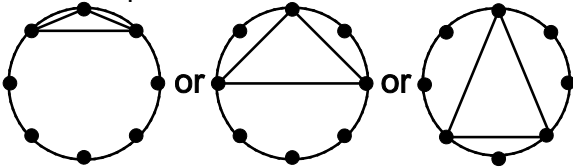
This document consists of **8** printed pages and **0** blank page.

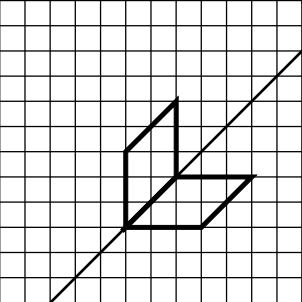
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Question	Answer	Marks	Further Information												
1(a)	8 (students)	1													
1(b)	 <table border="1" data-bbox="465 296 1247 823"> <caption>Bar Chart Data</caption> <thead> <tr> <th>Animal</th> <th>Number of students</th> </tr> </thead> <tbody> <tr> <td>elephant</td> <td>8</td> </tr> <tr> <td>tiger</td> <td>12</td> </tr> <tr> <td>lion</td> <td>20</td> </tr> <tr> <td>cheetah</td> <td>9</td> </tr> <tr> <td>zebra</td> <td>14</td> </tr> </tbody> </table>	Animal	Number of students	elephant	8	tiger	12	lion	20	cheetah	9	zebra	14	1	<p>Allow if the height of the bar representing the cheetah is in the space between 10 and 8</p> <p>Allow variable widths of bar so long as within confines of cheetah.</p> <p>The bar does not need to be shaded.</p>
Animal	Number of students														
elephant	8														
tiger	12														
lion	20														
cheetah	9														
zebra	14														
2	C, D, B, A	1	<p>Allow 130°, 110°, 90°, 75° allow ± 2°</p> <p>Must be in the given order.</p>												
3	$\frac{1}{3}$ or $\frac{4}{12}$ or $\frac{2}{6}$	1	Accept any equivalent fraction.												

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Question	Answer	Marks	Further Information
4	$\frac{2}{8} < \frac{4}{8}$ $\frac{7}{8} > \frac{5}{8}$ $\frac{3}{8} = \frac{3}{8}$ $\frac{6}{8} > \frac{1}{8}$	2	All 4 statements must be correct for 2 marks.
	2 or 3 correct answers.	<b>B1</b>	
5	8	1	
6	23 (packets)	1	
7	4601    4548    4635    4590    4610	1	Accept any clear indication.
8	Squares <b>or</b> square units	1	Accept mm <sup>2</sup> <b>or</b> cm <sup>2</sup> .  Accept any tessellating shape.

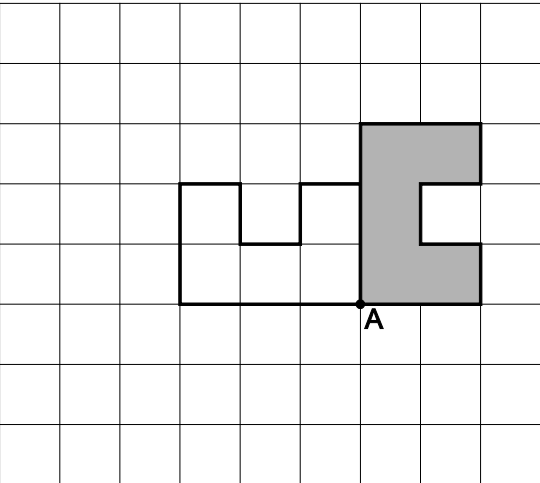
Question	Answer	Marks	Further Information
9	42 + 58 or 52 + 48	1	
10		2	All 4 boxes correct.
	2 or 3 boxes correct.	M1	
11(a)		1	Award 1 mark for an equilateral triangle in any position.  Dots must be used as the vertices of the triangle.
11(b)	Here are 3 different answers. For example: 	1	Award 1 mark for an isosceles triangle in any position.  Dots must be used as the vertices of the triangle.

Question	Answer	Marks	Further Information																		
12	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="3">Frequency table of scores</th> </tr> <tr> <th>Scores</th> <th>Tally</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>3–6</td> <td> </td> <td>1</td> </tr> <tr> <td>7–10</td> <td>   </td> <td>3</td> </tr> <tr> <td>11–14</td> <td>    </td> <td>6</td> </tr> <tr> <td>15–18</td> <td>    </td> <td>5</td> </tr> </tbody> </table>	Frequency table of scores			Scores	Tally	Frequency	3–6		1	7–10		3	11–14		6	15–18		5	2	Award 2 marks if both columns are correct. Tallies must be in groups of 5
	Frequency table of scores																				
Scores	Tally	Frequency																			
3–6		1																			
7–10		3																			
11–14		6																			
15–18		5																			
<p>Either the tally or the frequency column is correct.</p> <p><b>or</b></p> <p>4 or more boxes are correct.</p>	B1	Tallies must be in groups of 5																			
13		1	The diagram must be sufficiently accurate for the intention to be clear.																		
14	$3\frac{1}{4}$ <b>and</b> $5\frac{1}{2}$	2	Do <b>not</b> accept decimal answers. Accept equivalent mixed numbers.																		
	one correct answer.	B1																			

Question	Answer	Marks	Further Information
15	$\boxed{17} + \boxed{5} > 20$ $\boxed{11} + \boxed{9} = 20$ $\boxed{2} + \boxed{3} < 20$	1	Numbers in each row can be given in any order.
16	4.1 7.8 2.4	1	All 3 answers need to be correct for 1 mark. Accept answers such as 4.10 etc.
17	84, 12, 54	2	All 3 correct
	2 correct answers.	B1	
18(a)	$\boxed{6}$ out of 10 is the same as 60%.	1	
18(b)	5 out of 20 is the same as $\boxed{25}$ %.	1	
19	350	1	
20	28 May	1	

Question	Answer	Marks	Further Information									
21	55 cents or \$0.55	1	Do not accept 55 or 0.55									
22	$59 \times 30 = 1770$	1										
23	An explanation which recognises that all numbers ending in 3 are not prime, for example: <ul style="list-style-type: none"> <li>• 33 divides by 3 so it is not prime</li> <li>• 63 is divisible by 3</li> </ul>	1	Accept a counter example, for example: 93  Do not accept a statement without exemplification, e.g. Not all numbers that end in 3 are prime.									
24(a)	(\$) 3338	1										
24(b)	(\$) 745	1										
25	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>Multiples of 4</th> <th>Not multiples of 4</th> </tr> </thead> <tbody> <tr> <th>Multiples of 5</th> <td>40</td> <td></td> </tr> <tr> <th>Not multiples of 5</th> <td>24 36 64</td> <td>54</td> </tr> </tbody> </table>		Multiples of 4	Not multiples of 4	Multiples of 5	40		Not multiples of 5	24 36 64	54	2	Award 2 marks for 4 numbers correctly placed.
	Multiples of 4	Not multiples of 4										
Multiples of 5	40											
Not multiples of 5	24 36 64	54										
	3 numbers correctly placed	B1										

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Question	Answer	Marks	Further Information
26	5.5	1	Do not allow –5.5
27	30 (°C)	1	Do not allow –30 (°C)
28		1	The diagram must be sufficiently accurate for the intention to be clear.
29(a)	124 (°)	1	Accept 123 – 125 (°) inclusive
29(b)	7.9 (cm)	1	Accept 7.8 – 8.0 (cm) inclusive Accept 78 mm – 80 mm inclusive