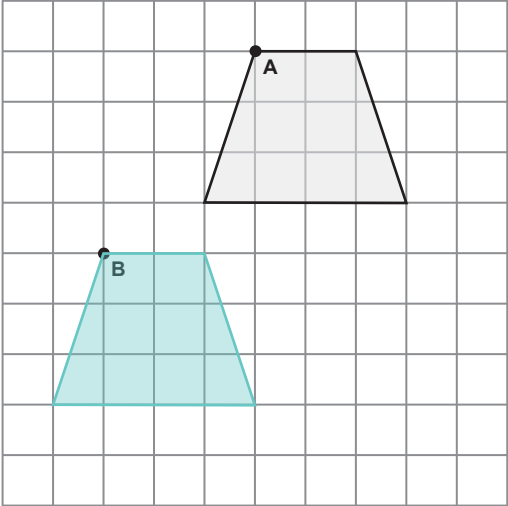
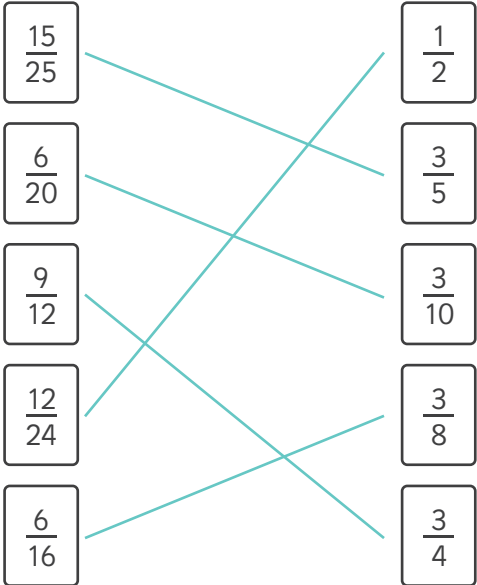
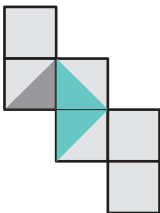
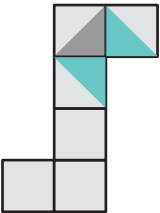
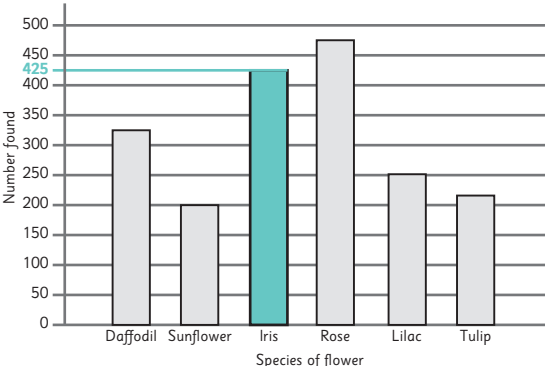


Pack B - Paper 3: Reasoning Mark Scheme

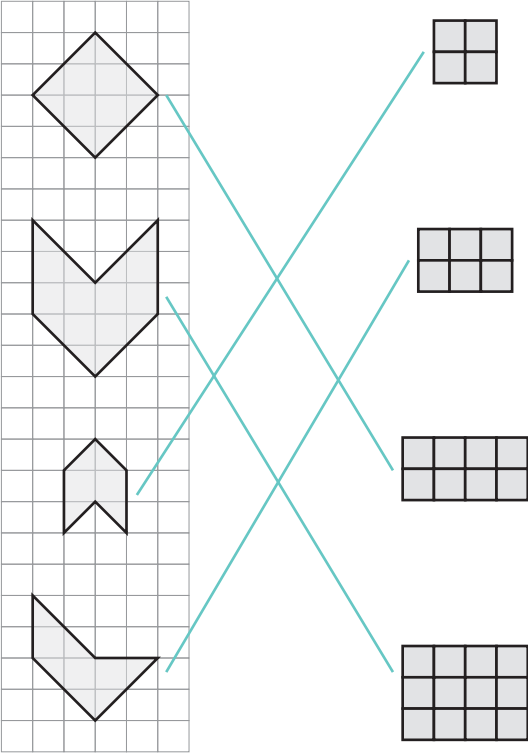
Qu	Requirement	Mark	Additional guidance
1	<p>Award ONE mark for the correct order, as shown:</p> <div> <div>300</div> <div>205</div> <div>110</div> <div>15</div> <div>-80</div> </div>	1m	
2	<p>Award ONE mark for all four numbers matched correctly, as shown:</p> <div> <div>1,023,201</div> <div>1,203,001</div> <div>1,023,021</div> <div>1,203,012</div> <div>1st largest</div> <div>2nd</div> <div>3rd</div> <div>4th smallest</div> </div>	1m	<p>Lines do not need to touch the boxes and words, provided the intention is clear.</p> <p>Accept responses where the labels largest and smallest are swapped and lines correspond to this, for example:</p> <div> <div>1,023,201</div> <div>1,203,001</div> <div>1,023,021</div> <div>1,203,012</div> <div>1st largest smallest</div> <div>2nd</div> <div>3rd</div> <div>4th smallest largest</div> </div> <p>Do not accept a diagram matched to more than one name.</p>
3	<p>Award TWO marks for all three correct responses, as shown:</p> <div> <div>to one decimal place</div> <div>218.5</div> <div>to the nearest whole number</div> <div>218</div> <div>to the nearest 10</div> <div>220</div> </div> <p>Award ONE mark for two correct answers given</p>	Up to 2m	
4	41,800	1m	

Qu	Requirement	Mark	Additional guidance
5	<p>Diagram completed, as shown</p> 	1m	<p>Ignore any attempt to label the translated shape.</p> <p>Accept slight inaccuracies in drawing, provided the intention is clear.</p>
6	<p>Award ONE mark for all four numbers matched correctly, as shown:</p> 	1m	<p>Lines do not need to touch the boxes and words, provided the intention is clear.</p> <p>Do not accept a diagram matched to more than one name.</p>
7	70.000	1m	
8	<p>Award ONE mark for the three correct numbers given:</p> <p>5 x 3 x 7 = 105</p>	1m	Accept numbers in any order.
9	<p>Award ONE mark for both correct responses given, as shown:</p> <p>36 + 64 = 100</p> <p>square number cube number</p>	1m	Accept numbers in any order.
10a	198	1m	
10b	187	1m	

Qu	Requirement	Mark	Additional guidance
11	<p>Award ONE mark for two boxes ticked correctly, as shown:</p> <p>AC is parallel to DE <input checked="" type="checkbox"/></p> <p>DE is parallel to AF <input type="checkbox"/></p> <p>AF is perpendicular to CH <input type="checkbox"/></p> <p>CH is perpendicular to DE <input checked="" type="checkbox"/></p>	1m	Accept alternative unambiguous indication of the correct answer.
12	<p>Award TWO marks for the correct response of 160</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> $4 \times 22 = 88$ $6 \times 12 = 72$ $88 + 72 = 150 \text{ (error)}$ <p>OR</p> $4 \times 22 = 88$ $6 \times 12 = 70 \text{ (error)}$ $88 + 70 + 158$	Up to 2m	Answer need not be obtained for the award of ONE mark.
13a	$\boxed{298} - \boxed{211} = \boxed{87}$	1m	
13b	$\boxed{22} \times \boxed{16} = \boxed{352}$	1m	

Qu	Requirement	Mark	Additional guidance
14	<p>Award TWO marks for the correct response of 400g</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> $450 \div 9 = 60 \text{ (error)}$ $450 - 60 = 390$ <p>OR</p> $450 \div 9 = 50$ $9 - 1 = 8$ $50 \times 8 = 420 \text{ (error)}$	Up to 2m	Answer need not be obtained for the award of ONE mark.
15a	<p>Diagram shaded correctly, as shown:</p> 	1m	<p>Accept any unambiguous indication of the correct area shaded.</p> <p>Area does not need to be completely shaded.</p>
15b	<p>Diagram shaded correctly, as shown:</p> 	1m	<p>Accept any unambiguous indication of the correct area shaded.</p> <p>Area does not need to be completely shaded.</p>
16a	3:43pm	1m	
16b	2 hours 28 minutes	1m	
17	<p>Award ONE mark for drawing the bar in the range of 420 – 430, e.g.</p> 	1m	Ignore the width of the bar

Qu	Requirement	Mark	Additional guidance
18	<p>Award ONE mark for a correct explanation that demonstrates why Inaya is incorrect, e.g.</p> <p>Demonstrates that $40\% \text{ of } 24 = 9.6$ and explains that it is not possible to have a decimal of a child, e.g.</p> <p>$10\% \text{ of } 24 = 2.4$, so $40\% \text{ of } 24 = 2.4 \times 4 = 9.6$</p> <p>We cannot have 0.6 of a child, so Inaya can not be correct.</p> <p>OR</p> <p>Demonstrates that $40\% \text{ of } 24 = 9.6$ and explains that we need whole numbers (integers) as we are working with children, which cannot be divided into parts, e.g.</p> <p>$10\% \text{ of } 24 = 2.4$, so $40\% \text{ of } 24 = 2.4 \times 4 = 9.6$</p> <p>Any proportion of Inaya's data must be whole numbers (integers), because children cannot be divided into parts.</p>	1m	<p>Do not accept vague or incomplete explanations, e.g.</p> <ul style="list-style-type: none"> Because $40\% \text{ of } 24 = 9.6$ (incomplete) Because $40\% \text{ of } 24 = 9.6$ and you can't have 9.6 (incomplete) <p>Do not accept explanations which include incorrect mathematics or incorrect information relevant to the explanation, e.g.</p> <ul style="list-style-type: none"> Because $40\% \text{ of } 24 = 12.4$ (incorrect)
19	<p>Award ONE mark for any of the correct possible responses, as shown:</p> $\boxed{3} \times \boxed{4} - \boxed{7} = \boxed{5}$ $\boxed{3} \times \boxed{4} - \boxed{5} = \boxed{7}$ $\boxed{4} \times \boxed{3} - \boxed{7} = \boxed{5}$ $\boxed{4} \times \boxed{3} - \boxed{5} = \boxed{7}$	1m	

Qu	Requirement	Mark	Additional guidance
20	<p>Award TWO marks for both correct responses ticked correctly, as shown:</p> <p>20% of children like elephants best. <input checked="" type="checkbox"/></p> <p>$\frac{2}{5}$ of children like gorillas best. <input type="checkbox"/></p> <p>As a decimal, the proportion of children who prefer lions is 0.4 <input checked="" type="checkbox"/></p> <p>15% of children like giraffes best. <input type="checkbox"/></p> <p>Award ONE mark for one correct response.</p>	Up to 2m	<p>For TWO marks, accept alternative unambiguous positive indication of both correct responses.</p> <p>For ONE mark, accept alternative unambiguous positive indication of one correct response.</p>
21	<p>Award ONE mark for all four diagrams matched correctly, as shown:</p> 	1m	<p>Lines do not need to touch the diagrams, provided the intention is clear.</p> <p>Do not accept a diagram matched to more than one diagram</p>



Qu	Requirement	Mark	Additional guidance									
22	<p>Award TWO marks for the correct response of £7.60</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <p>1.30 x 3 = 3.60 (error) 90 x 2 = 180 3.60 + 1.80 = 5.40 5.40 ÷ 3 = 1.80 1.80 x 4 = 7.20</p> <p>OR</p> <p>1.30 x 3 = 3.90 90 x 2 = 180 3.90 + 1.80 = 5.70 5.70 ÷ 3 = 1.90 1.90 x 4 = 7.40 (error)</p> <p>Award ONE mark for sight of:</p> <p>£5.70 and/or £1.90 as evidence they have found the total spent or $\frac{1}{4}$ of the total</p>	Up to 2m	<p>Accept for TWO marks, 760p for final answer in the working and the answer box blank OR 760 in the answer box where the £ has been replaced with p.</p> <p>Accept for ONE mark £760 in the answer box OR the final answer in the working and answer box blank.</p> <p>Answer need not be obtained for the award of ONE mark.</p> <p>Any conversion of units must be correct.</p> <p>Do not award the mark for a method that contains an incorrect conversion</p>									
23	<p>Award TWO marks for all three correct responses, as shown:</p> <table><tr><td>x + 23</td><td>=</td><td>31</td></tr><tr><td>x - 5</td><td>=</td><td>3</td></tr><tr><td>3x</td><td>=</td><td>24</td></tr></table> <p>Award ONE mark for any two correct responses.</p>	x + 23	=	31	x - 5	=	3	3x	=	24	Up to 2m	
x + 23	=	31										
x - 5	=	3										
3x	=	24										
24	<p>Award TWO marks for the correct answer of 42cm</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <p>6 x 6 = 36 6 ÷ 2 = 3 3 ÷ 2 = 1.5 1.5 x 3 = 4.5 (6 + 6 + 6 + 6) + (1.5 + 1.5) + (4.5 + 4.5) + (3 + 3) = 20 + 3 + 9 + 6 = 38 (error)</p>	Up to 2m	<p>Answer need not be obtained for the award of ONE mark.</p>									