

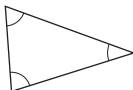
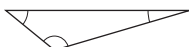
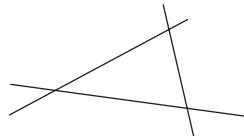
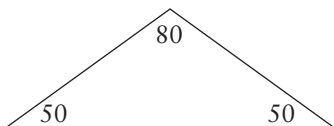
Tier & Question				Cat food		
3-5	4-6	5-7	6-8			
18	9	1			Correct response	Additional guidance
a	a	a		1m	$\frac{1}{4}$ or equivalent probability	
b	b	b		1m	$\frac{1}{3}$ or equivalent probability	! <i>Probability rounded</i> Accept 0.33 or better, or percentage equivalents
c	c	c		1m	0.3 or equivalent probability	

Tier & Question							Wine gums			
3-5	4-6	5-7	6-8							
16	10	2								
				Correct response			Additional guidance			
a	a	a		3m	Completes all three rows of the table correctly, ie			! Inaccurate reading of bar charts for Ravi and Tina Accept values in the following ranges provided the total for the row is correct eg, accept ♦ Ravi 35 ± 1 15 ± 1 Tina 100 ± 4 100 ± 4 eg, within a 1m response using only percentages, accept ♦ Ravi 70 ± 2 30 ± 2 Tina 50 ± 2 50 ± 2		
				or 2m	Completes two rows of the table correctly			! Incorrect units inserted Ignore		
					or					
					Completes one column of the table correctly					
					or					
					Completes the table with the two columns transposed but otherwise correct					
				or 1m	Completes either the row for Ravi or the row for Tina correctly					
					or					
					Completes the table using correct percentages from the bar charts, ie					

Tier & Question					Wine gums (cont)	
3-5	4-6	5-7	6-8			
16	10	2			Correct response	Additional guidance
b	b	b		1m	<p>Explains that Tina used the largest sample size eg</p> <ul style="list-style-type: none"> ■ The more tests you do, the more reliable the results ■ Tina asked more people than the others ■ 200 is bigger than 100 or 50 	<p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ More tests ♦ More people ♦ More wine gums ♦ 200 is bigger ♦ She asked 200 and the others asked 100 or 50 [comparison implicit] ♦ She asked twice as many people as Sita [comparison with Ravi implicit] <p>! <i>Irrelevant information or claim</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ It was 50/50 ♦ Hers were more evenly split ♦ She asked a wider range of people <p>Ignore if accompanying a correct response</p> <p>✗ <i>Incomplete or incorrect explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ More ♦ She asked 200 people [no comparison] ♦ Her results are more reliable as it was half and half

U1

Tier & Question					Values	
3-5	4-6	5-7	6-8			
17	11	3			Correct response	Additional guidance
				2m	<p>Gives all three correct values in the correct positions, ie 18, 30 and 100</p>	<p>! <i>Incorrect notation</i></p> <p>eg, for the value of $8 + k$</p> <ul style="list-style-type: none"> ♦ $18k$ <p>Withhold 1 mark only for the first occurrence</p>
				or 1m	<p>Gives two correct values in the correct positions</p> <p>or</p> <p>Shows all three values 18, 30 and 100, even if their positions are incorrect</p> <p>or</p> <p>Shows correct substitutions, interpreting the addition, multiplication and squaring correctly, but fails to process or processes incorrectly</p> <p>eg</p> <ul style="list-style-type: none"> ■ $8 + 10$, 3×10, 10×10 seen 	

Tier & Question						Thinking triangularly
3-5	4-6	5-7	6-8			
19	12	4		Correct response		
				3m	<p>Gives all four correct responses, including examples for the two true statements</p> <p>eg</p> <div><div>false</div><div>true<div></div></div><div>true<div></div></div><div>false</div></div>	<p>✓ <i>Unambiguous indication of ‘true’ and ‘false’</i></p> <p>eg</p> <ul style="list-style-type: none">♦ ✓ for true, ✕ for false <p>! <i>‘True’ example(s) drawn correctly but indication of ‘true’ omitted</i></p> <p>Condone, provided the examples show unambiguously that the statement is true</p> <p>! <i>Angles in the triangles not marked or marked incorrectly</i></p> <p>Ignore</p> <p>! <i>Triangles not drawn accurately</i></p> <p>Accept provided the pupil’s intention is clear eg, for the first ‘true’ example accept</p> <div><div></div><div></div></div> <p>! <i>Acute or obtuse angles look like right angles</i></p> <p>Do not accept if the angles are $90^\circ \pm 1^\circ$</p> <p>Otherwise, condone</p> <p>! <i>Example(s) given alongside ‘false’</i></p> <p>As these may be trials, ignore</p>
				or 2m	<p>Gives any three correct responses, including a correct example for any true statement</p> <p>or</p> <p>Gives correct responses for the two true statements, including correct examples, but leaves the spaces for the false statements blank</p>	
				or 1m	<p>Gives a correct response for one of the true statements, including a correct example</p> <p>or</p> <p>Correctly labels all four statements ‘true’ or ‘false’ but examples for the true statements are incorrect or omitted</p>	
					U1	

Tier & Question				Toilet rolls																			
3-5	4-6	5-7	6-8																				
22	13	5																					
				Correct response	Additional guidance																		
				<p>3m</p> <p>Indicates the pack of 6 toilet rolls and gives a correct justification, based on a pair of comparable values</p> <p>eg</p> <ul style="list-style-type: none">■ The 6-pack costs £1.25 for 3 rolls, but the 9-pack costs £1.30 for 3 rolls■ $3.9(0) \div 9 = 0.43(\dots)$ $2.5(0) \div 6 = 0.41(\dots)$■ For 9 rolls we have 3.90 and $2.50 \div 2 \times 3 = 3.75$■ 6 rolls: $390 \div 3 \times 2 = 260$, ie 10p more■ The 3 extra toilet rolls in the 9-pack cost £1.40, but in the 6-pack 3 rolls cost £1.25■ If the 9-pack were decreased by 3 rolls its price should go down by £1.30, but the difference is £1.40 so it's a better reduction■ 3 extra rolls cost £1.40 so 12 rolls using the large pack is $3.90 + 1.40 = 5.30$, whereas $2.50 + 2.50$ for the small pack is only 5.00	<p>✗ For 3m, no decision</p> <p>✓ For 3m, correct decision and any pair of comparable values shown</p> <p>Note that common pairs (in pounds) are:</p> <table><tr><td>1.3 and 1.25</td><td>(per 3 rolls)</td></tr><tr><td>0.43(...) and 0.41(...) or 0.42</td><td>(per 1 roll)</td></tr><tr><td>(3.9 and) 3.75</td><td>(per 9 rolls)</td></tr><tr><td>2.6 (and 2.5)</td><td>(per 6 rolls)</td></tr><tr><td>7.8 and 7.5</td><td>(per 18 rolls)</td></tr><tr><td>15.6 and 15</td><td>(per 36 rolls)</td></tr><tr><td>23.4 and 22.5</td><td>(per 54 rolls)</td></tr><tr><td>1.4 and 1.25 [or 1.3]</td><td>(3 extra rolls)</td></tr><tr><td>2.3(...) and 2.4</td><td>(rolls per pound)</td></tr></table> <p>! Comparison is per 9 rolls or per 6 rolls but the given price is not restated</p> <p>Condone</p> <p>eg, for 3m accept</p> <ul style="list-style-type: none">♦ The 6-pack, because 9 rolls should be £3.75 <p>! Units omitted, incorrect or inconsistent</p> <p>Condone provided the pupil's intention is clear</p> <p>eg, for 3m accept</p> <ul style="list-style-type: none">♦ The 6-pack, because $3.9(0) \div 9 = 43$ $2.5(0) \div 6 = 42$ <p>! Additional incorrect working</p> <p>Ignore</p>	1.3 and 1.25	(per 3 rolls)	0.43(...) and 0.41(...) or 0.42	(per 1 roll)	(3.9 and) 3.75	(per 9 rolls)	2.6 (and 2.5)	(per 6 rolls)	7.8 and 7.5	(per 18 rolls)	15.6 and 15	(per 36 rolls)	23.4 and 22.5	(per 54 rolls)	1.4 and 1.25 [or 1.3]	(3 extra rolls)	2.3(...) and 2.4	(rolls per pound)
1.3 and 1.25	(per 3 rolls)																						
0.43(...) and 0.41(...) or 0.42	(per 1 roll)																						
(3.9 and) 3.75	(per 9 rolls)																						
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7.8 and 7.5	(per 18 rolls)																						
15.6 and 15	(per 36 rolls)																						
23.4 and 22.5	(per 54 rolls)																						
1.4 and 1.25 [or 1.3]	(3 extra rolls)																						
2.3(...) and 2.4	(rolls per pound)																						
				<p>or</p> <p>2m</p> <p>Shows a correct pair of comparable values but makes either an incorrect or no decision</p> <p>or</p> <p>Attempts to find a pair of comparable values, making not more than one computational or rounding error, then follows through to make their correct decision</p> <p>eg</p> <ul style="list-style-type: none">■ The 6-pack is £1.30 (error) for 3 rolls and so is the 9-pack, so they are the same■ The 9-pack is £3.90 but should be $2.50 \div 6 \times 9 = 0.41(\text{rounding error}) \times 9 = 3.69$ so 6-pack is cheaper																			
				<p>or</p> <p>1m</p> <p>Shows, or implies by a correct value, a correct method to calculate at least one value for comparison, even if there are computational or rounding errors</p> <p>or</p> <p>Shows the difference in price for 3, 6, 9 or 18 rolls, even if the comparable values or the methods to calculate them are not shown</p> <p>eg</p> <ul style="list-style-type: none">■ The 6-pack is 5p cheaper■ The big pack is 10p more■ 15p difference■ 30p less	<p>Note that common calculations are:</p> <table><tr><td>$3.9 \div 3$ or $2.5 \div 2$</td><td>(per 3 rolls)</td></tr><tr><td>$3.9 \div 9$ or $2.5 \div 6$</td><td>(per 1 roll)</td></tr><tr><td>$2.5 \div 2 \times 3$</td><td>(per 9 rolls)</td></tr><tr><td>$3.9 \div 3 \times 2$</td><td>(per 6 rolls)</td></tr><tr><td>3.9×2 or 2.5×3</td><td>(per 18 rolls)</td></tr><tr><td>3.9×4 or 2.5×6</td><td>(per 36 rolls)</td></tr><tr><td>3.9×6 or 2.5×9</td><td>(per 54 rolls)</td></tr><tr><td>$3.9 - 2.5$ or $2.5 \div 2$ [or $3.9 \div 3$]</td><td>(3 extra rolls)</td></tr><tr><td>$9 \div 3.9$ or $6 \div 2.5$</td><td>(rolls per pound)</td></tr></table>	$3.9 \div 3$ or $2.5 \div 2$	(per 3 rolls)	$3.9 \div 9$ or $2.5 \div 6$	(per 1 roll)	$2.5 \div 2 \times 3$	(per 9 rolls)	$3.9 \div 3 \times 2$	(per 6 rolls)	3.9×2 or 2.5×3	(per 18 rolls)	3.9×4 or 2.5×6	(per 36 rolls)	3.9×6 or 2.5×9	(per 54 rolls)	$3.9 - 2.5$ or $2.5 \div 2$ [or $3.9 \div 3$]	(3 extra rolls)	$9 \div 3.9$ or $6 \div 2.5$	(rolls per pound)
$3.9 \div 3$ or $2.5 \div 2$	(per 3 rolls)																						
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$3.9 - 2.5$ or $2.5 \div 2$ [or $3.9 \div 3$]	(3 extra rolls)																						
$9 \div 3.9$ or $6 \div 2.5$	(rolls per pound)																						
				U1																			

Tier & Question				Woodpeckers					
3-5	4-6	5-7	6-8						
20	14	6			Correct response	Additional guidance			
a	a	a		1m	Gives all three correct values in the correct order, ie <table><tr><td>60</td><td>10</td><td>30</td></tr></table>	60	10	30	
60	10	30							
b	b	b		1m	1 : 3	✓ <i>Equivalent ratio</i> eg ♦ $\frac{1}{3} : 1$ ♦ 10 : 30			

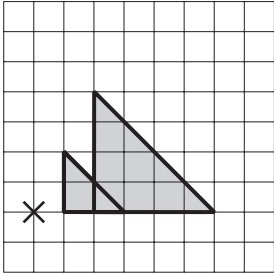
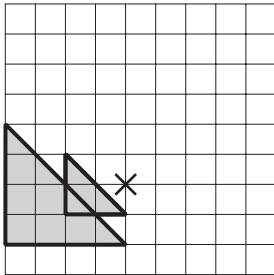
Tier & Question					Changing 120		
3-5	4-6	5-7	6-8				
21	15	7			Correct response	Additional guidance	
				1m	12		
				1m	1.2 or equivalent	✗ <i>1m 20cm</i>	
				1m	0.12 or equivalent		

Tier & Question					Four angles		
3-5	4-6	5-7	6-8				
	16	8	1		Correct response	Additional guidance	
				3m	Gives all four correct angles, ie $a = 110$ $b = 70$ $c = 50$ $d = 130$	✓ <i>Angles indicated on the diagram</i>	
				or 2m	Gives any three correct angles or Gives all four values 110, 70, 50 and 130, but in the incorrect order		
				or 1m	Gives any two correct angles or Shows three of the angles 110, 70, 50 and 130, but with the links to each letter incorrect or omitted or Gives four different angles (ie no two of the angles are equal) that sum to 360		
				Ⓢ			

Tier & Question					Balancing		
3-5	4-6	5-7	6-8				
	17	9	2		Correct response	Additional guidance	
	a	a	a	1m	5	! <i>Answers to parts (a) and (b) transposed but otherwise correct</i> Mark as 0, 1	
	b	b	b	1m	35		

Tier & Question					Five cubes	
3-5	4-6	5-7	6-8			
18	10	3				
					Correct response	Additional guidance
				1m	<p>Draws a correct view of the shape from above using the square grid, in either orientation</p> <p>eg</p> <div><div><div></div></div><div><div></div></div><div><div></div></div></div> <div><div><div></div><div></div><div></div></div></div>	<p>✓ <i>Internal lines omitted</i></p> <p>eg</p> <div><div></div></div> <p>! <i>Throughout the question, lines not ruled or accurate</i></p> <p>Accept provided the pupil's intention is clear</p>
				2m	<p>Draws a correct view of the shape using the isometric grid, in either correct orientation</p> <p>eg</p> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div> <div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div></div></div> <p>or</p> <p>1m</p> <p>Shows a shape drawn on the isometric grid that takes the given view as a view from one side rather than from above</p> <p>eg</p> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div> <p>or</p> <p>The only error is to omit some external lines or to show some hidden lines</p> <p>eg</p> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div> <div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div></div></div>	<p>✓ <i>For 2m or 1m, internal lines omitted</i></p> <p>eg, for 2m accept</p> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div> <p>! <i>Their shape takes the given view as a view from below rather than from above</i></p> <p>Condone</p> <p>eg, for 2m accept</p> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div>or</div><div><div><div></div><div></div><div></div><div></div></div><div><div></div><div></div></div></div></div> <p>! <i>Their shape takes the given view as a view from one side rather than from above</i></p> <p>For 2m, accept only if this error was penalised for the first mark</p> <p>eg</p> <div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div>then</div><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div><p>Mark as 0, 1, 1</p><p>! <i>Hidden lines shown</i></p><p>For 2m, accept provided they are clearly indicated as hidden lines</p><p>eg, for 2m accept</p><div><div><div><div></div><div></div></div><div><div></div><div></div></div></div></div><p>✗ <i>Shape with more than 5 cubes drawn</i></p></div>

Tier & Question							<i>nth term</i>
3-5	4-6	5-7	6-8				
	19	11	4		Correct response	Additional guidance	
	a	a	a	1m	Gives a correct expression eg <ul style="list-style-type: none">■ $4n + 2$■ $4n + 1 + 1$! <i>Unsimplified expression or unconventional notation</i> eg, for part (a) <ul style="list-style-type: none">♦ $4 \times n + 2$♦ $n4 + 2$ Condone	
	b	b	b	1m	Gives a correct expression eg <ul style="list-style-type: none">■ $3n + 3$■ $3(n + 1)$■ $\frac{1}{2}(6n + 6)$■ $(6n + 6) \div 2$■ $\frac{6n}{2} + \frac{6}{2}$	✕ <i>Necessary brackets omitted</i> eg, for part (b) <ul style="list-style-type: none">♦ $6n + 6 \div 2$ eg, for part (c) <ul style="list-style-type: none">♦ $2 \times 5n - 3$	
	c	c	c	1m	Gives a correct expression eg <ul style="list-style-type: none">■ $10n - 6$■ $2(5n - 3)$■ $(5n - 3) \times 2$		

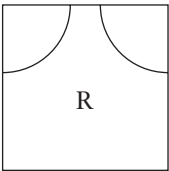
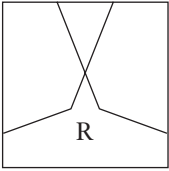
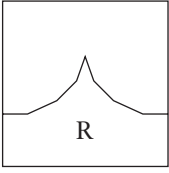
Tier & Question					Enlargement	
3-5	4-6	5-7	6-8			
20	12	5			Correct response	Additional guidance
				1m	<p>Indicates the correct centre of enlargement for the first diagram, ie</p> 	<p>! <i>Centre of enlargement indicated only by intersection of construction lines</i> Accept provided there is no ambiguity</p> <p>! <i>Inaccurate indication</i> Accept provided their indication is within 2mm of the correct position</p> <p>! <i>Incorrect construction lines shown</i> Ignore</p>
				1m	<p>Indicates the correct centre of enlargement for the second diagram, ie</p> 	

Tier & Question					Error	
3-5	4-6	5-7	6-8			
	21	14	6		Correct response	Additional guidance
		a	a	1m	120	! <i>Incorrect use of % sign</i> Ignore
				1m	84	
		b	b	2m	<p>Gives two correct percentages that sum to 100 eg</p> <ul style="list-style-type: none"> ■ 39 61 ■ 38.8 61.2 ■ 38.83 61.17 	<p>! <i>Values rounded</i> For 2m, accept percentages correctly rounded to two or more significant figures, provided they sum to 100</p> <p>Note to markers: Correct percentages are 38.834951456... 61.165048543...</p>
				or 1m	<p>Gives one correct percentage even if truncated, ie 38 or better, or 61 or better</p> <p>or</p> <p>Shows or implies a correct method for both percentages eg</p> <ul style="list-style-type: none"> ■ $80 \div 206$ 126 \div 206 ■ Digits 38(...) (or 39) and 61(...) 	

Tier & Question					Tomatoes	
3-5	4-6	5-7	6-8			
	22	15	7		Correct response	Additional guidance
	a	a	a	1m	Gives a value between 7.2 and 7.5 inclusive, or equivalent	
	b	b	b	1m	<p>Indicates A and gives a correct explanation</p> <p>The most common correct explanations:</p> <p>Use the trend line for type A</p> <p>eg</p> <ul style="list-style-type: none"> ■ It is closest to the line for type A ■ (3.2, 5.8) is close to (3, 6) which is on line A ■ Type A have smaller diameters with bigger heights than the other types ■ For A, the height is about double the diameter, and that's roughly true for this one <p>Refer to the diameters of type B being consistently larger than 3.2cm, or to the heights of type A differing from their diameters</p> <p>eg</p> <ul style="list-style-type: none"> ■ It's between the lines for A and B, but all the type Bs have diameters between 6 and 7 ■ It's too far from the type C line so it's A or B, and the A ones don't have similar diameters and heights 	<p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ It's closest to that line ♦ The line goes through (3, 6) which is very close ♦ It is closest to type A [with point correctly plotted on graph] ♦ Type A have small diameters with big heights ♦ For A, height is bigger than diameter ♦ A tomatoes are thin but tall <p>✗ <i>Incomplete or incorrect explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ It is closest to type A ♦ It's in the A section ♦ For A, the height is double the diameter ♦ The graph shows it ♦ It is on A's line ♦ Type A tomatoes have small diameters <p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ B tomatoes have bigger diameters ♦ A tomatoes have diameters that are not roughly equal to their heights <p>✗ <i>Incomplete explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ It could be A or B but it's more like A

Tier & Question					Tomatoes (cont)	
3-5	4-6	5-7	6-8			
	22	15	7		Correct response	Additional guidance
	c	c	c	1m	<p>Indicates B and gives a correct explanation</p> <p>The most common correct explanations:</p> <p>Refer to the position of its line on the graph</p> <ul style="list-style-type: none"> ■ B's graph is closest to $y = x$ (or $h = d$) ■ The line for B is closest to the line drawn [line $h = d$ correctly indicated on graph] <p>Refer to the dimensions of the tomatoes</p> <p>eg</p> <ul style="list-style-type: none"> ■ The height and the diameter of a sphere are equal and that's also roughly true for B ■ The height and diameter of B are both around 6 ■ A tomatoes are too tall for their diameter, but C tomatoes are too fat for their height 	<p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ B's line is about 45° through the middle ♦ It goes through (0, 0) then when d goes up by 1, so does h ♦ The x and y (or h and d) coordinates are nearly equal <p>✗ <i>Incomplete or incorrect explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ B's line is at about 45° ♦ B's line is a diagonal through the middle ♦ The graph shows it ♦ B has $h = 2$ and $d = 2$ <p>✓ <i>Minimally acceptable explanation</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ Same height and diameter ♦ h and d are closest ♦ The two values are nearly equal ♦ The others are either too tall and thin or too short and wide
	d	d		2m	Gives the value 22.4(...) or 22.5	<p>! <i>For 2m, answer of 22 or 23</i></p> <p>Do not accept unless a correct method or a more accurate value is seen</p>
				or 1m	<p>Shows or implies a correct method with not more than one computational or rounding error</p> <p>eg</p> <ul style="list-style-type: none"> ■ $3.14 \times 3.5^3 \div 6$ ■ $\frac{1}{6} \pi 3.5^2 \times 3.5$ ■ $\pi \div 6 = 0.52$ (<i>premature rounding</i>), $0.52 \times 12.25 \times 3.5 = 22.3$ ■ Answer of 22 or 23, with no correct method or more accurate value 	<p>✗ <i>For 1m, no indication of multiplication</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ $\frac{1}{6} \pi 3.5^2 3.5$ ♦ $\frac{1}{6} \pi 12.25 3.5$ <p>✗ <i>For 1m, conceptual error</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ $\frac{1}{6} \times \pi \times 7 \times 3.5$

Tier & Question					Expressions	
3-5	4-6	5-7	6-8			
	23	13	8		Correct response	Additional guidance
				2m	$8x + 31$	
				or 1m	Shows or implies the four correct terms resulting from multiplying out the brackets, even if there is incorrect further working eg <ul style="list-style-type: none"> ■ $5x, 10, 21, 3x$ ■ $5x + 10$ and $21 + 3x$ ■ $5x + 31 + 3x$ ■ $8x + 10 + 21$ or Multiplies out both sets of brackets with not more than one error, then follows through using their expansion to give a fully simplified expression eg <ul style="list-style-type: none"> ■ $5x + 10 + 27$ (error) $+ 3x = 8x + 37$ 	✗ For 1m, incomplete processing in constant terms eg, for the first expression ♦ $5x + 5 \times 2 + 3 \times 7 + 3x$
				2m	$x^2 + 7x + 10$! Expression equated to zero Condone
				or 1m	Shows or implies the four correct terms resulting from multiplying out the brackets, even if there is incorrect further working eg <ul style="list-style-type: none"> ■ $x^2, 2x, 5x, 10$ ■ $x \times x + 5x$ and $2 \times x + 10$ or The only error in an otherwise correct and simplified expression is to give an incorrect but non-zero constant term, or to leave incomplete processing in the correct constant term eg <ul style="list-style-type: none"> ■ $x^2 + 2x + 5x + 7$ (error) $= x^2 + 7x + 7$ ■ $x^2 + 7x + 2 \times 5$ ■ $x \times x + 7 \times x + 2 \times 5$ 	

Tier & Question					Marking overlay available	Tracking elephants
3-5	4-6	5-7	6-8			
		16	9		Correct response	Additional guidance
				2m	Uses compasses to draw two arcs centred on A and B within the tolerances as shown on the overlay, and indicates the correct region	<p>! <i>Arcs extended</i> Ignore</p> <p>! <i>Extra arcs drawn</i> Ignore provided there is no ambiguity</p>
				or 1m	<p>Draws two arcs centred on A and B within the tolerances as shown on the overlay, even if compasses are not used, and/or an incorrect or no region is indicated</p> <p>or</p> <p>Indicates the correct region for their arcs centred on A and B, even if they are outside the tolerance as shown on the overlay</p> <p>or</p> <p>The only error is that the two arcs are centred on the incorrect vertices of the square</p>	<p>! <i>For 1m, follow through</i> Accept unambiguous indication of a correct region formed by an attempt at two symmetrical arcs or sets of lines 'centred' on A and B, even if inaccurately drawn eg, accept</p> <p>♦</p>  <p>♦</p>  <p>♦</p>  <p>Do not accept follow through from only one arc or line, or from non-symmetrical arcs or lines</p>

Tier & Question					Algebra grids	
3-5	4-6	5-7	6-8			
		17	10		Correct response	Additional guidance
				3m	Completes all three grids correctly, ie <div><div><div>6x</div><div><div>2x</div><div>4x</div></div><div>8x²</div></div><div><div>3x + 1</div><div><div>x + 1</div><div>2x</div></div><div>2x(x + 1) or 2x² + 2x</div></div></div> <div><div><div>5x</div><div><div>2x</div><div>3x</div></div><div>6x²</div></div>or<div><div>5x</div><div><div>3x</div><div>2x</div></div><div>6x²</div></div></div>	! <i>Unconventional notation</i> eg, for 6x ♦ x6 ♦ 6 × x eg, for 8x ² ♦ 8 × x × x Withhold 1 mark only for the first occurrence × <i>Unsimplified expression(s) and/or incomplete processing</i> eg, for 6x ♦ 2x + 4x eg, for 8x ² ♦ 2 × 4 × x ²
				or 2m	Completes the first two grids correctly or Completes the third grid correctly and gives any two correct entries in the first two grids or Completes the third grid correctly, gives any one correct entry in the first grid, makes an error in the right-hand entry of the second grid, but follows through correctly to give their product	
				or 1m	Gives any two correct entries in the first two grids or Completes the third grid correctly or Gives any one correct entry in the first grid, makes an error in the right-hand entry of the second grid, but follows through correctly to give their product	
				U1		

Tier & Question					Four kites	
3-5	4-6	5-7	6-8			
		18	11		Correct response	Additional guidance
				2m	115	
				or 1m	Shows the value 230 or 130 or Shows the value 90, provided there is no evidence that this value has been assigned to angle k or Shows or implies a complete correct method with not more than one computational error eg <ul style="list-style-type: none"> ■ $\frac{1}{2} \left(320 - \frac{360}{4} \right)$ ■ $180 - 45 - 20$ ■ $\frac{1080 - 4 \times 40}{8}$ or Forms a correct equation involving k , even if the 90° angle has not been found eg <ul style="list-style-type: none"> ■ $2k = 360 - 40 - x$ ■ $(k =) 160 - \frac{1}{2} x$ 	

Tier & Question					Volume of 100	
3-5	4-6	5-7	6-8			
		19	12		Correct response	Additional guidance
				1m	Gives a correct pair of positive values such that $x^2y = 100$ eg <ul style="list-style-type: none"> ■ $x = 2, y = 25$ ■ $x = 1, y = 100$ ■ $x = 5, y = 4$ ■ $x = 10, y = 1$ ■ $x = 4, y = 6.25$! <i>Value(s) rounded</i> Accept x as $\sqrt{100 \div \text{their } y}$ or y as $100 \div \text{their } x^2$ to 3 s.f. or better eg, accept <ul style="list-style-type: none"> ♦ $x = 3.16, y = 10$ ♦ $x = 3, y = 11.1$ ✗ <i>Negative value of x</i>
				1m	Gives a different correct pair of positive values from any credited for the first mark	! <i>For both marks, values of x and y transposed, but otherwise correct</i> Mark as 0, 1

Tier & Question						
3-5	4-6	5-7	6-8			Bias
		20	13			
				Correct response	Additional guidance	
				<p>2m</p> <p>Indicates the coin is not biased (eg ‘Not biased’ or ‘No’) and gives a correct justification eg</p> <ul style="list-style-type: none"> ■ Of the 200 trials, 110 are heads $\frac{110}{200} = 0.55$ $0.55 < 0.56$ ■ $0.56 \times 200 = 112$ $112 > 110$ ■ The mean number of heads is 11 $20 \times 0.56 = 11.2$, $11 < 11.2$ ■ $0 + 3 + 1 + 1 + 2 + 2 + 1 - 1 + 0 + 1 = 10$, $10 \div 200 = 5\%$, so it’s 55% which is less than 56% 	<p>✓ <i>Minimally acceptable justification</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ 55% ♦ $\frac{110}{200}$ ♦ 110, 112 ♦ 11, 11.2 <p>! <i>Response assumes the pupil has already concluded the coin is biased</i></p> <p>Condone eg, for 2m accept</p> <ul style="list-style-type: none"> ♦ 55%, so her conclusion is wrong <p>! <i>Irrelevant information</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ 7 of the 10 sets of results were less than 11.2 <p>Ignore if accompanying a correct response, otherwise do not accept</p> <p>✕ <i>For 2m, incomplete or incorrect justification</i></p> <p>eg</p> <ul style="list-style-type: none"> ♦ They add up to 110 ♦ The mean is 11 ♦ $0.56 \times 20 = 11.2$ ♦ Median = 11 and $11 < 11.2$ 	
				<p>or</p> <p>1m</p> <p>Shows a correct estimate of probability based on all 200 results, even if it is written unconventionally, but makes an incorrect or no decision</p> <p>eg</p> <ul style="list-style-type: none"> ■ 0.55 ■ 55(%) ■ $\frac{110}{200}$ ■ $\frac{11}{20}$ ■ 110 out of 200 <p>or</p> <p>Shows the values 110 and 112, or 11 and 11.2, but makes an incorrect or no decision</p> <p>or</p> <p>Shows or implies a correct method with not more than one computational error, then follows through to make their correct decision</p> <p>eg</p> <ul style="list-style-type: none"> ■ $5 + 6.5 + 5.5 + 5.5 + \dots + 5.5$ so not biased ■ $10 + 13 + 11 + \dots + 11 = 114$ (<i>error</i>), $\frac{114}{200} > 0.56$ so biased 		

U1

Tier & Question					Area A	
3-5	4-6	5-7	6-8			
		21	14		Correct response	Additional guidance
				2m	45, with no evidence of an incorrect method	✗ Incorrect method eg ♦ $3 \times (5 + 10)$
				or 1m	Shows or implies that the width of B is 6 eg <ul style="list-style-type: none"> ■ $15 \times 2 \div 5 = 6$ ■ C is 5 by 3, so B is 5 by 6 ■ B is 5×6 ■ 6 correctly marked on diagram ■ The width of A must be 9 or Shows or implies a complete correct method with not more than one computational error eg <ul style="list-style-type: none"> ■ $5 \times (15 - (15 \times 2 \div 5))$ ■ $75 - 15 \times 2$ ■ $15 \times 8 - 15 - 30 - 30$ ■ $15 \times 2 = 30,$ $30 \div 5 = 5$ (error), $15 - 5 = 10,$ $10 \times 5 = 50$! Incorrect units inserted Ignore ! For 1m, dimension of 6 for B within incorrect working As this could represent the height rather than the width, do not accept eg, do not accept ♦ B is 6 by 10
				(U1)		

Tier & Question					Field voles		
3-5	4-6	5-7	6-8				
		22	15				
					Correct response		Additional guidance
			a	1m	<p>Gives a value between 0.65 and 0.68 inclusive or equivalent probability</p> <p>eg</p> <ul style="list-style-type: none"> ▪ $\frac{660}{1000}$ [0.66] 		
			b	1m			
					<p>Gives a value between 0.5 and 0.61 inclusive or equivalent probability</p> <p>eg</p> <ul style="list-style-type: none"> ▪ $\frac{160}{290}$ [0.5517...] ▪ $\frac{150}{290}$ [0.5172...] ▪ $\frac{160}{300}$ [0.5333...] 		