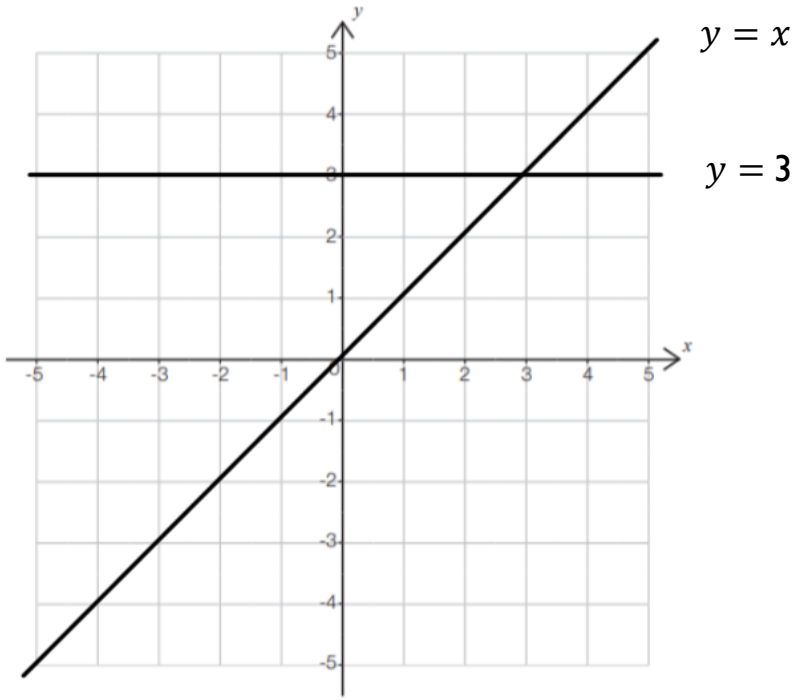
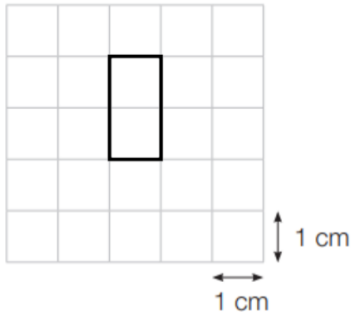
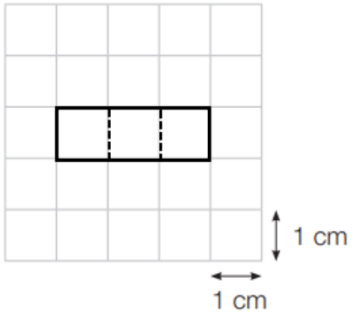
Question	Answer	Marks	Notes and guidance
1	Draws correct graphs as shown  	1 1	Award 1 mark for $y = x$ correct. Condone no label and slight inaccuracy if the intention is clear. Award 1 mark for $y = 3$ correct. Condone no label and slight inaccuracy if the intention is clear.
	(3, 3)	1	Follow through their point of intersection provided at least one graph is of the correct form.

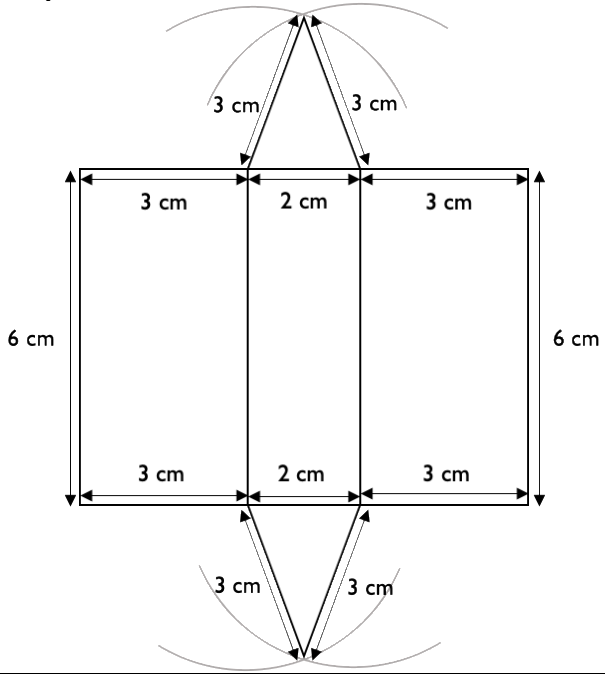
Year 9 Autumn Core Mark Scheme A

2	Indicates $9 + 2a = 23$	1	Accept any clear indication – circle, underlined etc.
	$t = 3$	3	Award 2 marks for fully correct method with one arithmetical error Award 1 mark for correct first step e.g. $5t - 12 = 3$ or $7t - 15 = 2t$
	$w > 1$	2	Award 1 mark for evidence of correct method e.g. multiplying out brackets and rearranging, or dividing both sides by 3, or $w = 1$
3	Draws a rectangle 1 cm by 2 cm e.g. 	1	Allow anywhere on the grid.
	Draws correct plan view e.g. 	1	Allow anywhere on the grid.

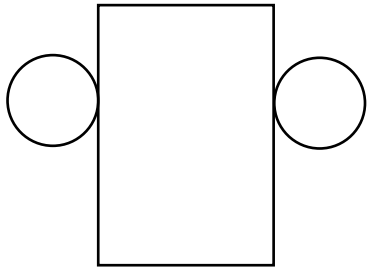
Year 9 Autumn Core Mark Scheme A

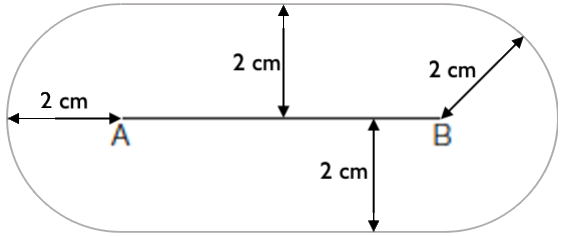
<table>
<tr><td>4</td><td>Draws accurate perpendicular bisector of AB with construction lines clearly visible</td><td>2</td><td>Award 1 mark for any correct method if incomplete, or within 2 mm.</td></tr>
<tr><td rowspan="2">5</td><td>$5x + 15 - 2x + 8$
$\equiv 3x + 23$</td><td>3</td><td>Award 1 mark for each correct expansion, 3rd mark for complete simplification.</td></tr>
<tr><td>$x^2 + 3x + 4x + 12$
$x^2 + 7x + 12$</td><td>2</td><td>Award 1 mark for any three terms correct.</td></tr>
<tr><td>6</td><td>Completes table correctly
<table><tr><th>Equation</th><th>Graph</th></tr><tr><td>$y = 3x + 2$</td><td>A</td></tr><tr><td>$y = 3x - 2$</td><td>C</td></tr><tr><td>$y = -3x + 2$</td><td>B</td></tr><tr><td>$y = -3x - 2$</td><td>D</td></tr></table></td><td>2</td><td>Award 1 mark for two correct.</td></tr>
<tr><td>7</td><td>Indicates true with fully correct working e.g. $105 \div 15 = 7$
Both rectangles are 15 cm by 7 cm so they are congruent</td><td>2</td><td>Award 1 mark for attempt to find unknown length in either rectangle.</td></tr>
</table>

Year 9 Autumn Core Mark Scheme A

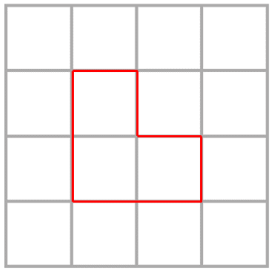
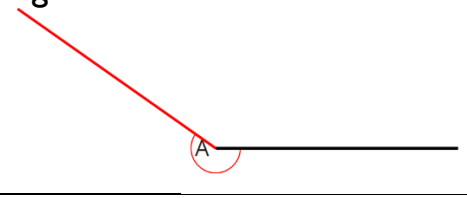
8	$a = \frac{c+b}{2}$	2	Accept any equivalent form e.g. $a = \frac{c}{2} + \frac{b}{2}$ Award 1 mark for correct first step e.g. $2a = b + c$ or $a - \frac{b}{2} = \frac{c}{2}$
9	(0, 1)	1	
	3	1	Do not accept e.g. $\frac{6}{2}$
10	Fully correct net with correct dimensions e.g.  	3	Award 2 marks for • correct shape and at least all rectangles correct or • correct shape and triangles correct. Award 1 mark for • correct shape or • at least one correct face.

Year 9 Autumn Core Mark Scheme A

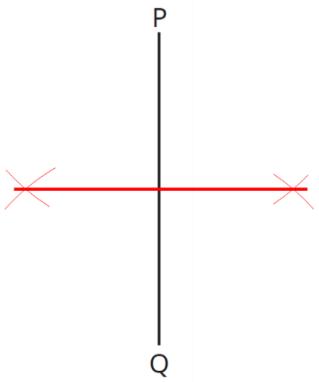
11	Draws any correct net for a cylinder e.g. 	1	
	33 929 or 10 800π	3	Allow rounding to 3sf or better. Award 2 marks for fully correct method. Award 1 mark for at least one correct area e.g. $\pi \times 40^2$ or $\pi \times 80 \times 95$ seen or implied.
12	120	4	Award 1 mark for correct process to find volume e.g. $144 \times 25 \times 250$ Award 1 mark for converting either volume of pool to litres or volume of bucket to litres Award 1 mark for (their volume of the pool) divided by (their volume of 1 bucket).

13	e.g. the locus of the points from the endpoints should be semicircles	1	Any reasonable explanation.
		2	Award two marks for correct locus 2 cm away from AB. Award 1 mark for correct shape.

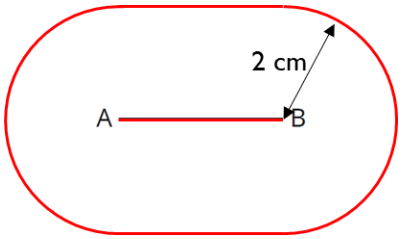
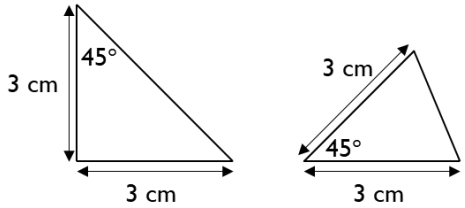
Year 9 Autumn Core Paper Mark Scheme B

Question	Answer	Marks	Notes and guidance
1	Triangular prism	1	
2		2	Award 1 mark for base correct and top square on right hand side.
3	False, e.g. $\frac{2}{6}$ of the spinner is grey, $\frac{2}{6} \neq \frac{1}{2}$	1	Do not accept 'False' without correct reasoning.
4	17.5 m	3	Award 1st mark for 35×50 seen or implied. Award 2nd mark for process to convert cm to m seen or implied. or Award 1st mark for 0.35 seen or implied. Award 2nd mark for 0.35×50 seen or implied.
5	e.g. 	1	Reflex angle must be indicated. Accept other orientations of 215° from A
6	$y^2 + 10y + 9$	2	Award 1 mark for any three correct terms from $y^2 + y + 9y + 9$ seen.

Year 9 Autumn Core Paper Mark Scheme B

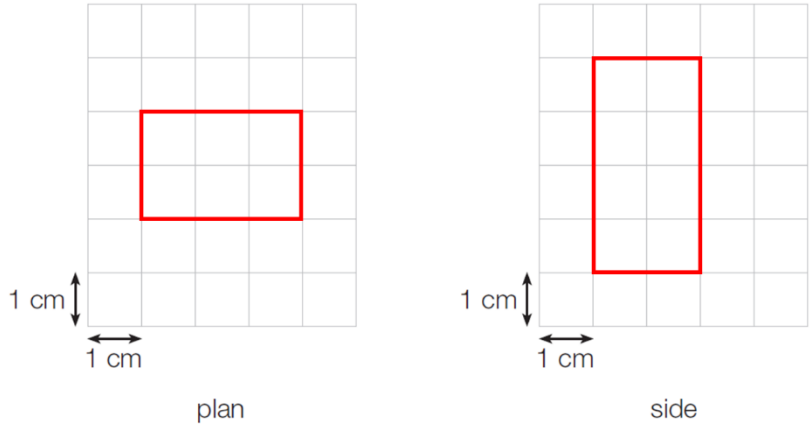
7		2	Award 1 mark for evidence of starting correct process to construct perpendicular bisector but not completed accurately.
8	$3\left(\frac{6}{5}\right)+4=7.6$ $10-2\left(\frac{6}{5}\right)=7.6$ Both lines go through $(\frac{6}{5}, 7.6)$	2	Need conclusion for both marks. Award 1 mark for substitution of $\frac{6}{5}$ into either equation correctly evaluated.
9	1311 mm^3	3	Award 1 mark for $\frac{1}{2}(7.6+12.4)\times 9.5$ seen or implied. Award 1 mark for $13.8\times$ "their area cross-section"
10	c. £25	1	
	e.g. For every mile travelled the cost of the journey increases by £1.50	1	Accept any correct reasonable explanation that uses the context of the question. Do not accept e.g. "1.5 is the gradient"
	e.g. the fixed cost of the taxi fare.	1	Accept any correct reasonable explanation that uses the context of the question. Do not accept e.g. "3 is the y-intercept"

Year 9 Autumn Core Paper Mark Scheme B

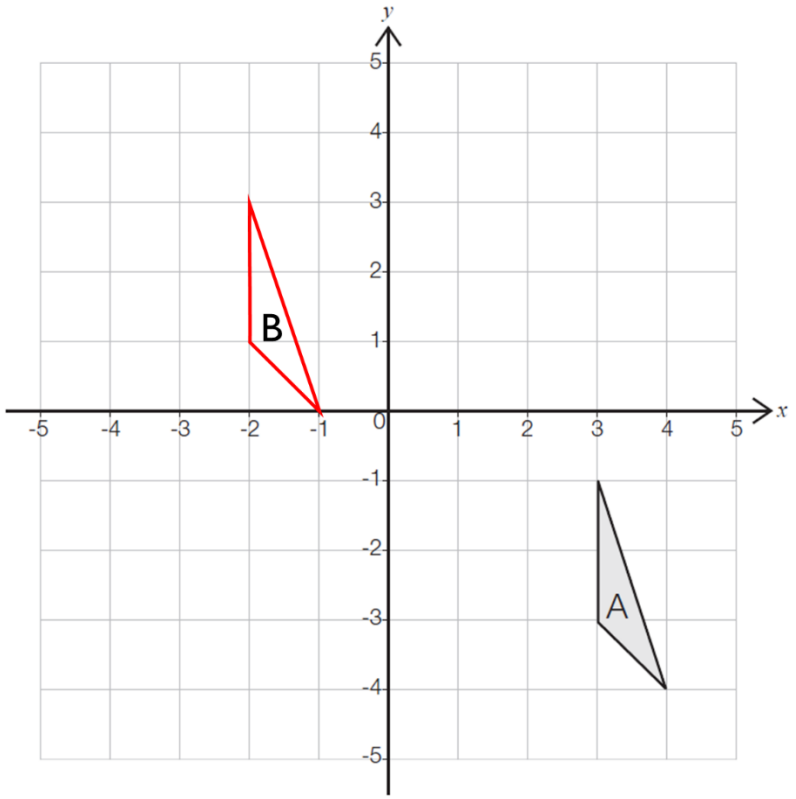
11		3	Award 1 mark an accurate locus of points from either A or B (semicircle) Award 1 mark for accurate locus points parallel (above and below) to the line AB Allow $\pm$ 1 mm
12	14	4	Award 1 mark for forming expressions for the ages e.g. x, $3x$ and $x - 4$ Award 1 mark for correct equation e.g. $6x - 4 = 21$ Award 1 ft mark for solving x (Aisha's age) = 5
13	2070.25	3	Award 1 mark for correctly evaluating either $q = -7$ or $p = 6.5$ Award 1 mark for correctly substituting their values into $(pq)^2$
14	$a = -3$	1	
	$b = 11$	2	Award 1 mark for forming equation $13 = 2x - 9$ and attempting to solve
15	e.g. 	1	Accept any pair of isosceles triangles that have both triangles show the same side lengths and angle but are not congruent.
16	$y = -3x$	1	Accept any equivalent form e.g. $y + 3x = 0$
	e.g. $y = -3x + 4$, $y = 4 - 3x$ etc.	1	Accept any equation of the form $y = -3x + c$ where $c > 0$

17	0.452	2	Accept awrt 0.452 or exact equivalent Award 1 mark for attempt to use $\pi r^2 h$
	3.77	2	Accept awrt 3.77 or exact equivalent Award 1 mark for finding curved surface area and at least one other face of the cylinder

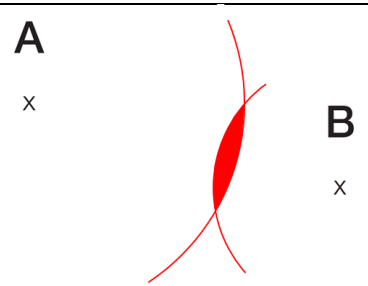
Year 9 Spring Core Paper Mark Scheme

Question	Answer	Marks	Notes and guidance
1	Indicates $\sqrt{144}$	1	Accept any clear indication – circle, underline, tick etc.
2	$p = 225$	1	
	$q = 4.2$	2	Award 1 mark for correct first step to solve e.g. $63 = 15q$, $2.8 = q - 1.4$
3	115°	1	
	Alternate angles are equal	1	
4		2	Award 1 mark for each correct drawing If neither correct, award 1 mark for two correct drawings from plan, side elevation and front elevation seen in the wrong grids
5	8	2	Award 1 mark for correct method e.g. attempting to list factors or draw factor tree for both numbers
	192	2	Award 1 mark for listing multiples of both 24 and 64 or attempt to use prime factors

Year 9 Spring Core Paper Mark Scheme

6	82.9%	2	Award 1 mark for 29 ÷ 35 or 0.8285… seen
7		2	Award 1 mark for any translation of the triangle to the left and up
	Translation by $\begin{pmatrix} 5 \\ -4 \end{pmatrix}$	2	Award 1 mark for "translation" stated with incorrect vector, or correct column vector only

Year 9 Spring Core Paper Mark Scheme

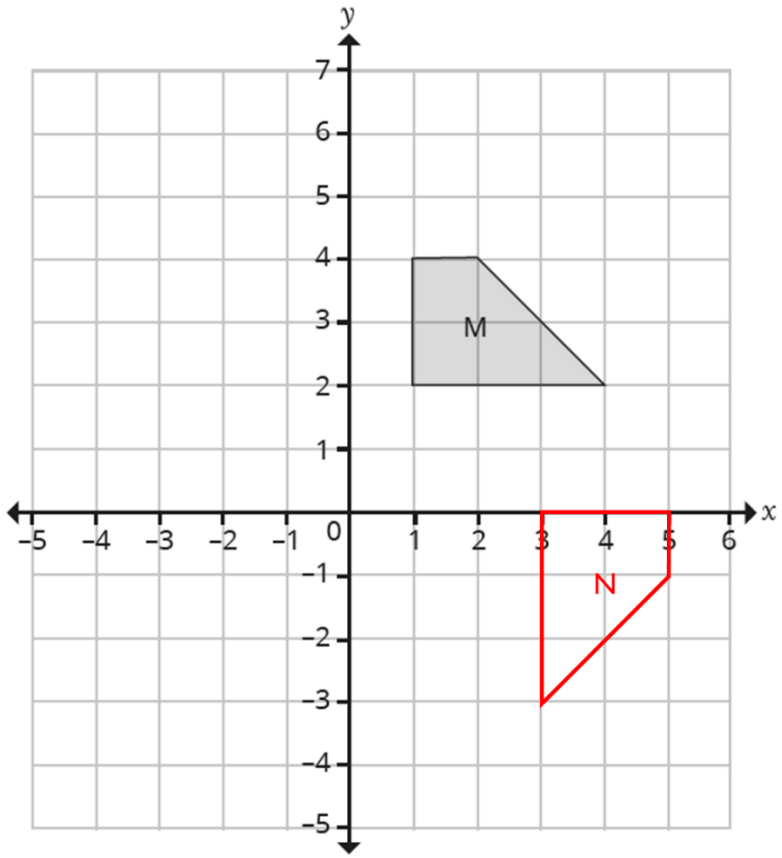
8	$a^2 + 2a - 35$	2	Award 1 mark for expansion with 3 out of 4 terms $a^2, -5a, 7a, -35$ correct
9	32.6	3	Award 1 mark for forming equation $8m + 5 + 2m - 3 = 180$ Award 2nd mark for $m = 17.8$ seen or implied
10		3	Award 1 mark for arc with radius 5 cm $\pm$ 2 mm from A Award 1 mark for arc with radius 3 cm $\pm$ 2 mm from B Award 1 mark their overlap region shaded
11	e.g. "Carpet Co. because £82.64 is less than £87.91"	3	Award 1 mark for either £82.64 or £87.91seen Award 2nd mark for both £82.64 or £87.91seen Award 3rd mark for correct conclusion and justification No marks for just Carpet Co.
12	504π mm^3 or 1583.36… mm^3	3	Award 1 mark for $\pi \times 6^2 \times 14$ Award 2nd mark for 504π or 1583.26… seen or implied e.g. by 1580 Award 1 mark for mm^3
13	$a = 2.525$	2	Award 1 mark for correctly substituting $x = 2.8$ into equation of the line Condone rounding if evidence of substitution seen

14	£900	3	Award 1 mark for 65% = £585 seen or implied (e.g. a bar model) Award 2nd mark for correct method to find 100%
15	306 m	3	Award 1 mark for correct use of Pythagoras' theorem e.g. $145^2 - 17^2$ seen Award 2nd mark for AB = 144

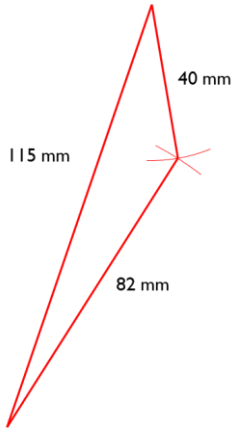
Year 9 Spring Core Paper Mark Scheme B

Question	Answer	Marks	Notes and guidance
1	$\frac{22}{11}$	1	
2	5	1	
3	$\frac{5}{8}$	2	Award 1 mark for any fraction of the form $\frac{k}{8}$ where $k \neq 5$
	e.g. 31 is not a multiple of 8	1	Accept any correct explanation.
4	$x = 2.7$	1	Accept any equivalent answer
	$y = 5\frac{5}{6}$	2	Accept any equivalent answer e.g. $5.8\dot{3}$ Award 1 mark for a correct first step to solve the equation seen or implied. e.g. $\frac{y}{5} = \frac{7}{6}$ or $y - \frac{10}{3} = \frac{5}{2}$
	$z > 12.5$	2	Award 1 mark for any correct first step to solve the inequality e.g. $25 > 2z$ or $5 < z - 2.5$
5	e.g. "True, 1 is a factor of every integer"	1	Accept equivalent correct explanations. Do not award mark for 'True' chosen with no or incorrect explanation.
6	e.g. "3 units right and 2 units down"	2	Award 1 mark for either component described correctly. Allow e.g. "3 squares right, 2 squares down"
7	$x^2 - 3x - 28$	2	Award 1 mark for any three correct terms from $x^2, -7x, +4x, -28$

Year 9 Spring Core Paper Mark Scheme B

8		2	Award 1 mark for correct rotation in the wrong position. Condone missing label N.
	e.g. "True, they are the same shape and size"	1	Accept equivalent correct explanations. Do not award mark for 'True' chosen with no or incorrect explanation.
9	£180	2	Award 1 mark a complete correct method to reduce the price of the coat by 28% e.g. 250×0.72 or $250 - (0.28 \times 250)$

Year 9 Spring Core Paper Mark Scheme B

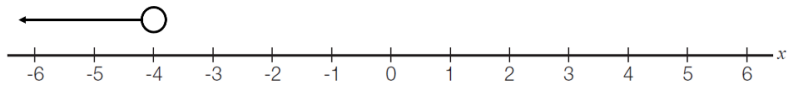
	£150	2	Award 1 mark equating 72% to108 and attempting to find 100%
10	e.g. 180 – 142 = 38 because angles on a straight line sum to 180° 180 – 90 = 90 because co interior angles sum to 180° 90 – 38 = 52 $a = 52°$	3	Accept other complete correct approaches. Award 1 mark for correct first step to find a e.g. 38° seen (could be on diagram) Award 2nd mark for correct numerical value of a Award 3rd mark for complete correct reasons used.
11	 or equivalent	2	Accept a fully correct construction in any orientation. Award 1 mark for one side drawn accurately with one construction arc accurately drawn. (±1 mm) Condone missing side length label
12	90π cm^3 or 282.7.. cm^3	3	Award 1 mark for correct method to find the volume of the cylinder i.e. $\pi \times 3^2 \times 10$ Award 1 mark for correct answer (awrt 283) Award 1 mark cm^3
13	£6955.64	3	Award 1 mark for correct method to add on 3% at least once

			Award 2 marks for complete correct method seen or implied. e.g. 6000×1.03^5 Ignore rounding errors
14	$y = x + 4$	2	Award 1 mark for either correct gradient found or $y = kx + 4$ where $m \neq 1$
15	13 cm	2	Award 1 mark for correct use of Pythagoras' theorem.
	660 cm^2	3	Award 1 mark for correct area at least two faces seen Award 2nd mark for complete correct method to find total surface area e.g. $(30 \times 2) + (20 \times$ "13") $+ (20 \times 12) + (20 \times 5)$

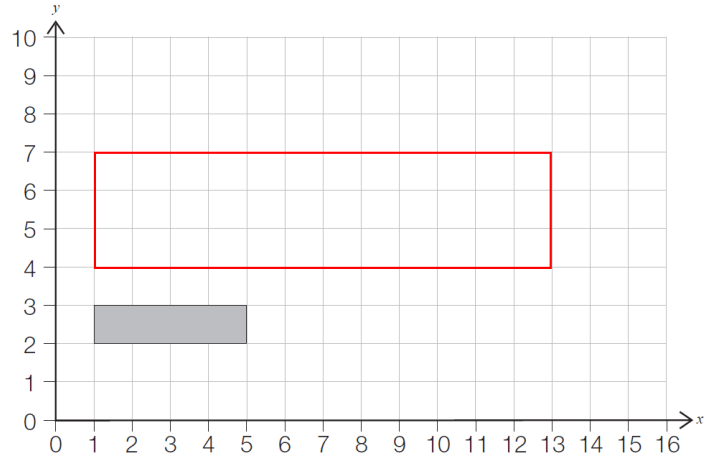
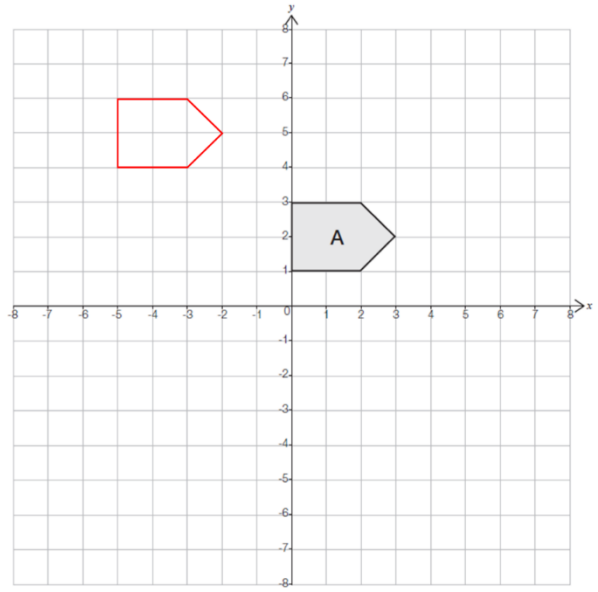
Year 9 Summer Core Paper Mark Scheme

Question	Answer	Marks	Notes and guidance
1	D	1	
2	31 or 37	1	Condone both answers given
	304	1	
3	8.3×10^8	1	
	0.000057	1	
4	120	1	
5	Draws a circle of radius 4 cm and shades the inside of the circle.	1	Allow circle of radius 3.9 cm to 4.1 cm Accept circle shaded or unshaded, but do not accept outside the circle shaded
	16π or 50.3	2	Award 1 mark for $\pi \times 4^2$ seen or implied. Accept awrt 50.3
6	5	1	
	(0, −4)	1	Must be expressed as a coordinate, do not accept just −4

Year 9 Summer Core Paper Mark Scheme

7	$n \geq -1$	1	
		3	Award 1 mark for correct first step to solve inequality e.g. $2x < -8$ or $x + 4.5 < 0.5$ seen Award 1 mark for correct solution seen $x < -4$ Award 1 mark for clear circle and correct arrow orientation plotted above their solution. Follow through their solution (provided still $<$) for the 3rd mark
8	0.3445	2	Accept any equivalent fraction, decimal or percentage condoning rounding Award 1 mark for $0.53 \times \frac{13}{20}$ seen or implied or $0.47 \times \frac{13}{20} = 0.3055$ or equivalent
9	e.g. $35^2 + 12^2 = 1369$ $37^2 = 1369$ $35^2 + 12^2 = 37^2$ so the triangle is right-angled	2	Award 1 mark for correct use of Pythagoras' theorem seen. Award full marks for fully correct working.

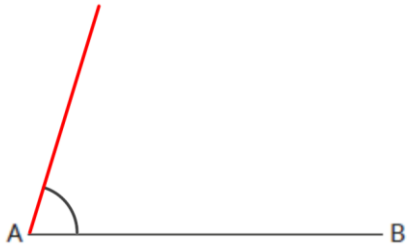
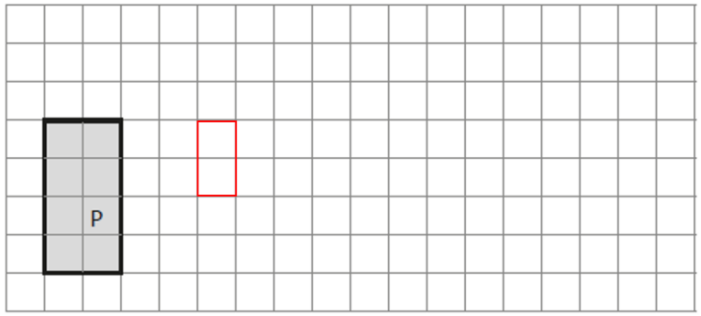
Year 9 Summer Core Paper Mark Scheme

10		2	Award 1 mark for correct enlargement incorrectly positioned or two vertices of their enlarged rectangle correctly plotted
11		2	Award 1 mark for a correct horizontal or vertical translation performed **or** four out of five vertices correctly positioned.

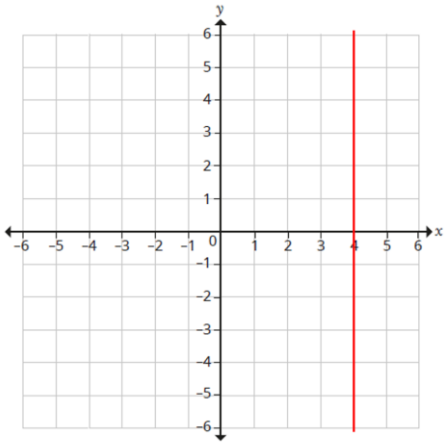
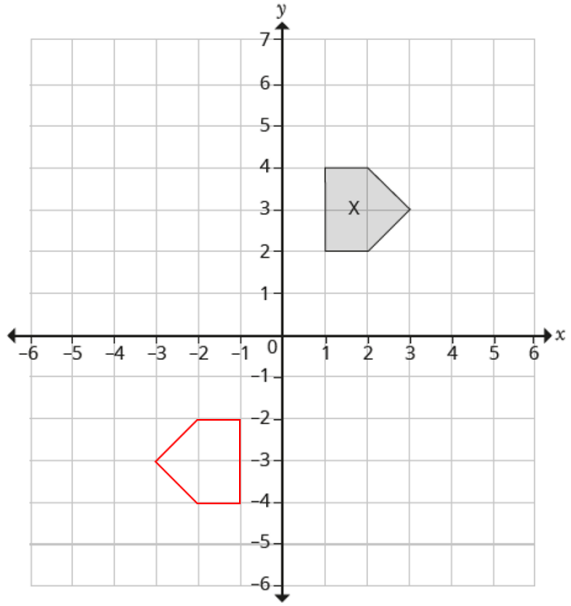
Year 9 Summer Core Paper Mark Scheme

12	Chooses Bargain Hut with working e.g. Bargain Hut: $20 \times 3.99 = 79.80$ Mega Saver: $30 \times 3.99 \times 0.8 = 95.76$ so Bargain Hut is cheaper	3	Award 1 mark for correct total price from either shop Award 2nd mark for correct total price from both shops Award full marks for fully correct working with conclusion.
13	855.32	2	Award 1 mark for attempt to $800 \times (1.034)^2$ seen or implied or complete attempt to increase 800 by 3.4% once Answer must be rounded to the nearest penny but condone rounding errors
14	831	3	Award 1 mark for correctly finding the area of at least one triangle (36 mm^2) Award 1 mark for finding the area of at least two rectangular faces (345, 161 and 253 mm^2)
15	Finds $\angle WPY = 49°$	3	Award 1 mark for forming a correct equation e.g. $x + x + 82 = 180$ Award 2nd mark for finding $\angle ZPX = 49°$
16	625 g	3	Award 1 mark for 120 % = 750 g seen or implied Award 1 mark for correct method to find normal size e.g. $750 \div 1.2$
17	3.98	3	Award 1 mark for correctly finding the volume of the cuboid i.e. $80 \div 0.67 = 119.4029$ ... Award ft 1 mark for correct method to find the height of the cuboid i.e. "119.4029" $\div (3 \times 10)$ Award final mark for awrt 3.98

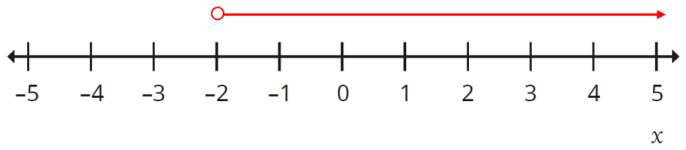
Year 9 Summer Core Paper Mark Scheme B

Question	Answer	Marks	Notes and guidance
1	e.g. 	1	Allow $\pm 2°$ Could be above or below the line. Angle must be indicated. Must be from A and not from B
2	Indicates $(3, -11)$	1	Accept any clear indication
3	$2 \times 2 \times 3 \times 23$	2	Allow factors in any order, exponent form etc. Do not allow 1s within the product Award 1 mark for method that produces at least two correct prime factors
4	e.g. 	2	Allow anywhere on the grid Award 1 mark for correct enlargement by any other scale factor except 1 OR incomplete shape with at least two sides correct
5	Indicates $\sqrt{1}, \sqrt{4}$ and $\frac{1}{2}$	2	Accept any clear indication Award 1 mark for two correct and no extras.

Year 9 Summer Core Paper Mark Scheme B

6		1	Condone dotted line. Must extend at least as far as (4, 5) and (4, −5) If more than one line drawn, final choice must be clearly labelled
7		2	Award 1 mark for any rotation of shape X by 180°

Year 9 Summer Core Paper Mark Scheme B

8	13	2	Award 1 mark for correct method e.g. valid attempt to solve $2a + 15 = 41$ or attempt to subtract 15 from 41 and halve the result seen
9	119	2	Award 1 mark for complete correct method e.g. $77.35 \div 0.65$ or attempt to find 1% and multiply the result by 100 seen
10	$x > -2$	2	Allow $-2 < x$ Award 1 mark for -2 seen e.g. $x = -2$
		1	Follow through from their solution provided this is a strict inequality
11	Indicates "Yes" with justification e.g. $43.2^2 + 57.6^2 = 5184$ $72^2 = 5184$ $43.2^2 + 57.6^2 = 72^2$	2	Award 1 mark for attempt to use Pythagoras' theorem. Units must be consistent for both marks.
12	Indicates "True" with justification e.g. $3 \times 1.7^3 = 5.1 \times 1.7 \times 1.7$	1	Accept any clear explanation in words or using calculations.
	Shows they are not equal e.g. $6 \times 1.7^2 = 17.34$ $5.1 \times 1.7 \times 4 + 2 \times 1.7^2 = 46.24$ $3 \times 17.34 \neq 46.24$	2	Accept any clear explanation e.g. "The faces of the cuboid have 14 squares with sides 1.7 cm, three cubes would have 18" Award 1 mark for clear attempt to work out/compare the surface areas of the cuboid and three cubes

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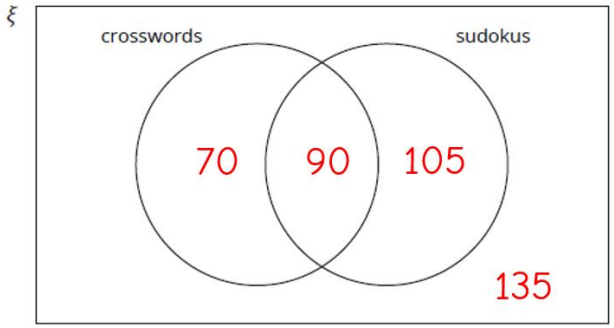
13	e.g. $\angle XYZ = 42°$ (base angles in an isosceles triangle are equal) $138° + 42° = 180°$ so ZY is parallel to WX (co-interior angles add up to 180°) So WXYZ is a trapezium (it has a pair of parallel sides)	2	Full workings and reasons must be seen for both marks. Award 1 mark for attempt to use both angles in an isosceles triangle and co-interior angles (even if terms not seen)
14	120	1	
	16	2	Award 1 mark for correct method i.e. using a scale factor of 0.4 or equivalent
15		2	Award 1 mark for at least two values correct
	$\frac{135}{400}$	1	Accept any equivalent form. Follow through from their Venn diagram.
16	Indicates "No" with justification e.g. Speed $= 34 \div (29 \div 60) = 70.3\ldots > 70$	2	Award 1 mark for correct method to find speed seen
17	£21 500	3	Award 2 marks for full correct method e.g. $0.2 \times 37\,500 + 0.4 \times 35\,000$ Award 1 mark for at least one element correct e.g. $0.2 \times 37\,500$ or $0.4 \times 35\,000$ seen

18	125 g	3	Must include units for all three marks, allow any equivalent answer e.g. 0.125 kg Award 1 mark for attempt to find scale factor e.g. converting 0.75 m = 75 cm and 75 ÷ 30 = 2.5 or equivalent Award 1 mark for "their 2.5" × 50 seen