

1MA0 Higher Tier – Practice Paper 1H (Set D)					
Qn		Working	Answer	Mark	Notes
1	(b)		110	1	B1 for 108 – 112
	(c)		Position of <i>B</i> marked	2	B1 for a point marked on a bearing of 40° (±2°) from <i>H</i> or for a line on a bearing of 40° (±2°) (use straight line guidelines on overlay)  B1 for a point 4 cm (± 0.2cm) from <i>H</i> or for a line of length 4 cm (± 0.2cm) from <i>H</i> (use circular guidelines on overlay)  NB. No label needed for point
2	(a)		$m^{-10}$	1	B1 for $m^{-10}$ or $\frac{1}{m^{10}}$
3		$15x + 6y = 33$ $8x - 6y = 36$  $23x = 69$  $5 \times 3 + 2y = 11$  <b>OR</b> $x = \frac{11 - 2y}{5}$ $4 \times \left(\frac{11 - 2y}{5}\right) - 3y = 18$ $44 - 8y - 15y = 90$ $-46 = 23y$ $y = -2$	$x = 3$ $y = -2$	4	M1 for coefficients of <i>x</i> or <i>y</i> the same followed by correct operation (condone one arithmetic error) A1 cao for first solution M1 (dep on M1) for correct substitution of found value into one of the equations or appropriate method after starting again (condone one arithmetic error) A1 cao for second solution  <b>OR</b> M1 for full method to rearrange and substitute to eliminate <i>x</i> or <i>y</i> , (condone one arithmetical error) A1 cao for first solution M1 (dep on M1) for correct substitution of found value into one of the equations or appropriate method after starting again (condone one arithmetic error) A1 cao for second solution  Trial and improvement 0 marks unless both <i>x</i> and <i>y</i> correct values found

1MA0 Higher Tier – Practice Paper 1H (Set D)				
Qn	Working	Answer	Mark	Notes
4		Region shaded	3	B1 for circle arc of radius 3cm ( $\pm 2$ mm) centre Burford B1 for circle arc of radius 5 cm ( $\pm 2$ mm) centre Hightown B1 for overlapping regions of circle arcs shaded
5	(c)	18 – 24	2	M1 for indication of taking a reading from 90 or ft from their cf graph A1 for 18 – 24
6	(c)	Two correct comparisons	2	B1 ft from (b) for a correct <b>comparison</b> of range <b>or</b> inter-quartile range eg. the range / iqr is smaller for group B than group A  B1 ft from (b) for a correct <b>comparison</b> of median <b>or</b> upper quartile <b>or</b> lower quartile <b>or</b> minimum <b>or</b> maximum eg. the median in group A is greater than the median in group B
7		$6 \times 10 \times 8 = 480$ $480 \div (6 \times 20) =$	4	3 M1 for $6 \times 10 \times 8$ or 480 seen M1 (dep) for '480' $\div (6 \times 20)$ oe A1 cao  OR  M1 for $20 \div 10 (=2)$ or $10 \div 20 (= \frac{1}{2})$ or $\frac{1}{20}$ oe or $\frac{8}{8}$ oe  M1 (dep) for $8 \div '2'$ or $8 \times \frac{1}{2}$ or $\frac{8}{20} \times 10$ oe or $\frac{20}{10 \div 8}$ A1 cao  SC : B2 for answer of 16 coming from $\frac{20 \times 8 \times 6}{10 \times 6}$ oe

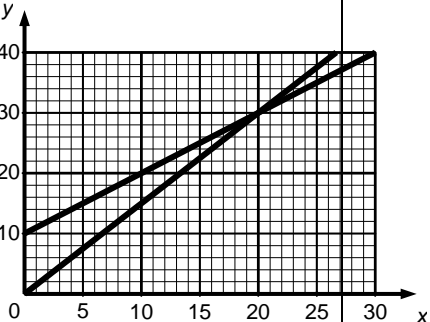
**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn		Working	Answer	Mark	Notes
8			84	4	<p>M1 for <math>x - 1 + 3x + 1 + 3x (= 56)</math> or <math>7x = 56 + 1 - 1</math> or <math>3x(x - 1)</math> oe 2</p> <p>M1 for <math>7x = 56</math> or 8 seen</p> <p>M1 for <math>0.5 \times ('8' - 1) \times (3 \times '8')</math></p> <p>A1 cao Ignore any statement of units.</p> <p>SC B2 for 8 as the answer or 7 identified as the height and 24 identified as the base of the triangle.</p>
9	(a)		Type of film Tally Frequency	2	<p>B2 for a table with all 3 aspects: Column/row heading 'type of film' or list of at least 3 film types Column/row heading 'tally' or tally marks (or key) Column/row heading 'frequency' or totals oe (B1 for a table with 2 of the 3 aspects)</p>
10		$12x + 8y = 16$ $12x + 15y = 51$ $7y = 35$ $3x + 2 \times 5 = 6$  Alternative method $x = \frac{4 - 2y}{3}$ $4\left(\frac{4 - 2y}{3}\right) + 5y = 17$ $16 - 8y + 15y = 51$ $7y = 35$ $x = \frac{4 - 2 \times 5}{3}$	$x = -2$ $y = 5$	4	<p>M1 for a correct process to eliminate either x or y or leading to substitution (condone one arithmetic error)</p> <p>A1 for either <math>x = -2</math> or <math>y = 5</math></p> <p>M1 (dep) for correct substitution of their found value</p> <p>A1 cao</p> <p>SC If M0 scored B1 for <math>y = -2</math> and <math>x = 5</math></p>

**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn	Working	Answer	Mark	Notes
11	$180 - (360 \div 6) = 120$ $180 - (360 \div 8) = 135$ $360 - 120 - 135 =$  OR $360 \div 6 = 60$ $360 \div 8 = 45$ $60 + 45 =$	105	4	<p>NB. Do remember to look at the diagram when marking this question. Looking at the complete method should confirm if interior or exterior angles are being calculated</p> <p>M1 for a correct method to work out the interior angle of a regular hexagon eg. <math>180 - (360 \div 6)</math> oe or <math>(6 - 2) \times 180 \div 6</math> oe or 120 as interior angle of the hexagon                      M1 for a correct method to work out the interior angle of a regular octagon <math>180 - (360 \div 8)</math> oe or <math>(8 - 2) \times 180 \div 8</math> oe or 135 as interior angle of the octagon                      M1 (dep on at least M1) for a complete method eg. <math>360 - "120" - "135"</math>                      A1 cao</p> <p>OR</p> <p>M1 for a correct method to work out an exterior angle of a regular hexagon eg. <math>360 \div 6</math> or 60 as exterior angle of the hexagon                      M1 for a correct method to work out an exterior angle of a regular hexagon <math>360 \div 8</math> or 45 as exterior angle of the octagon                      M1 (dep on at least M1) for a complete method eg. <math>"60" + "45"</math>                      A1 cao</p> <p>SC : B1 for answer of 255</p>

**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn	(b)	Working	Answer	Mark	Notes																		
12	(b)	 <table border="1" data-bbox="401 797 732 873"> <thead> <tr> <th>Miles</th> <th>0</th> <th>10</th> <th>20</th> <th>30</th> <th>40</th> </tr> </thead> <tbody> <tr> <td>Ed</td> <td>0</td> <td>15</td> <td>30</td> <td>45</td> <td>60</td> </tr> <tr> <td>Bill</td> <td>10</td> <td>20</td> <td>30</td> <td>40</td> <td>50</td> </tr> </tbody> </table>	Miles	0	10	20	30	40	Ed	0	15	30	45	60	Bill	10	20	30	40	50	<p>Ed is cheaper up to 20 miles, Bill is cheaper for more than 20 miles</p>	3	<p>M1 for correct line for Ed intersecting at (20,30) <math>\pm 1</math> sq tolerance or <math>10 + x = 1.5x</math> oe                      C2 (dep on M1) for a correct full statement ft from graph                      eg. Ed cheaper up to 20 miles and Bill cheaper for more than 20 miles                      (C1 (dep on M1) for a correct conclusion ft from graph                      eg. cheaper at 10 miles with Ed ; eg. cheaper at 50 miles with Bill                      eg. same cost at 20 miles; eg for £5 go further with Bill OR                      A general statement covering short and long distances eg. Ed is cheaper for shorter distances and Bill is cheaper for long distances)</p> <p>OR</p> <p>M1 for correct method to work out Ed's delivery cost for at least 2 values of n miles where <math>0 &lt; n \leq 50</math> OR                      for correct method to work out Ed and Bill's delivery cost for n miles where <math>0 &lt; n \leq 50</math>                      C2 (dep on M1) for 20 miles linked with £30 for Ed and Bill with correct full statement                      eg. Ed cheaper up to 20 miles and Bill cheaper for more than 20 miles                      (C1 (dep on M1) for a correct conclusion                      eg. cheaper at 10 miles with Ed; eg. cheaper at 50 miles with Bill                      eg. same cost at 20 miles; eg for £5 go further with Bill OR                      A general statement covering short and long distances eg. Ed is cheaper for shorter distances and Bill is cheaper for long distances)</p> <p>SC : B1 for correct full statement seen with no working                      eg. Ed cheaper up to 20 miles and Bill cheaper for more than 20 miles</p> <p>QWC: Decision and justification should be clear with working clearly presented and attributable</p>
Miles	0	10	20	30	40																		
Ed	0	15	30	45	60																		
Bill	10	20	30	40	50																		

**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn	Working	Answer	Mark	Notes										
13	$\frac{1}{2} \times 4 \times 3 = 6$ $\left(\frac{1}{2}\right)^2 \times 6 =$	1.5	3	$\frac{1}{2} \times 4 \times 3$ oe M1 for $\frac{1}{2} \times 4 \times 3$ oe $\left(\frac{1}{2}\right)^2 \times "6"$ M1 for $\left(\frac{1}{2}\right)^2 \times "6"$ A1 cao  OR $\frac{1}{2} \times 2 \times 1.5$ oe M2 for $\frac{1}{2} \times 2 \times 1.5$ oe  $\frac{1}{2}$ (M1 for triangle with all lengths $\frac{1}{2}$ corresponding lengths of triangle ABC seen in any position or vertices seen at (1, 1) (3,1) and (2.5, 2.5) or stated) A1 cao										
14	(a) <table border="1" style="margin-left: 20px;"> <tr> <td align="center">F</td> <td align="center">15</td> <td align="center">25</td> <td align="center">36</td> <td align="center">24</td> </tr> <tr> <td align="center">Fd</td> <td align="center">3</td> <td align="center">5</td> <td align="center">3.6</td> <td align="center">1.2</td> </tr> </table>	F	15	25	36	24	Fd	3	5	3.6	1.2	Correct histogram	3	B3 for fully correct histogram (overlay) (B2 for 3 correct blocks) (B1 for 2 correct blocks of different widths)  SC : B1 for correct key, eg. 1 cm <sup>2</sup> = 5 (cars) or correct values for (freq ÷ class interval) for at least 3 frequencies (3, 5, 3.6, 1.2)  NB: The overlay shows one possible histogram, there are other correct solutions.
F	15	25	36	24										
Fd	3	5	3.6	1.2										
	(b) $0.75 \times 24$	18	2	M1 for $0.75 \times 24 (=18)$ oe or $0.25 \times 24 (=6)$ oe A1 cao  OR M1 ft histogram for $15 \times "1.2"$ or $5 \times "1.2"$ A1 ft										

1MA0 Higher Tier – Practice Paper 1H (Set D)				
Qn	Working	Answer	Mark	Notes
15		$36 - 9\pi$	3	<p>M1 for <math>\pi \times 6 \times 6</math> or <math>36\pi</math> seen value 113.03-113.2  M1 for <math>(12 \times 12 - \pi \times 6 \times 6) \div 4</math> or value 7.7-7.8  A1 for <math>36 - 9\pi</math> oe  OR  M1 for <math>\pi \times 6 \times 6 \div 4</math> or <math>9\pi</math> seen or value 28.2-28.3  M1 for <math>6 \times 6 - \pi \times 6 \times 6 \div 4</math> or value 7.7-7.8  A1 for <math>36 - 9\pi</math> oe</p> <p>NB: for M marks <math>\pi</math> may be given numerically.</p>
16		12	4	<p>B1 for 60 seen  M1 for <math>(360 - 60) \div 2 (=150)</math>  M1 for <math>360 \div (180 - 150)</math> or <math>150 \times n = 180(n-2)</math> oe  A1 cao</p> <p>OR</p> <p>B1 for 60 seen  M1 for <math>60 \div 2 (=30)</math>  M1 for <math>360 \div (60 \div 2)</math>  A1 cao</p> <p>OR</p> <p>M2 for 30 seen  M1 for <math>360 \div 30</math>  A1 cao</p>

**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn	Working	Answer	Mark	Notes
17*	<p> <math>ABO = ADO = 90^\circ</math>                      (Angle between tangent and radius is <math>90^\circ</math>)  <math>DOB = 360 - 90 - 90 - 50</math>                      (Angles in a quadrilateral add up to <math>360^\circ</math>)  <math>BCD = 130 \div 2</math>                      (Angle at centre is twice angle at circumference)                       OR  <math>ABD = (180 - 50) \div 2</math>                      (Base angles of an isosceles triangle)  <math>BCD = 65</math>                      (Alternate segment theorem)                 </p>	65o	4	<p>                     B1 for <math>ABO = 90</math> or <math>ADO = 90</math> (may be on diagram)                      B1 for <math>BCD = 65</math> (may be on diagram)                       C2 for <math>BCD = 65</math>o stated or <math>DCB = 65</math>o stated or angle <math>C = 65</math>o stated with all reasons:                      angle between tangent and radius is <math>90</math>o;                      angles in a quadrilateral sum to <math>360</math>o;                      angle at centre is twice angle at circumference  <math display="block">\frac{1}{2}</math>                      (accept angle at circumference is half (or <math>\frac{1}{2}</math>) the angle at the centre)                      (C1 for one correct and appropriate circle theorem reason)                      QWC: Working clearly laid out and reasons given using correct language                       OR                      B1 for <math>ABD = 65</math> or <math>ADB = 65</math> (may be on diagram)                      B1 for <math>BCD = 65</math> (may be on diagram)                       C2 for <math>BCD = 65</math>o stated or <math>DCB = 65</math>o stated or angle <math>C = 65</math>o stated with all reasons:                      base angles of an isosceles triangle are equal;                      angles in a triangle sum to <math>180</math>o;                      tangents from an external point are equal;                      alternate segment theorem                      (C1 for one correct and appropriate circle theorem reason)                      QWC: Working clearly laid out and reasons given using correct language                 </p>



**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn		Working	Answer	Mark	Notes
18	(a)		Parabola through (4, -1), (2, 3), (6, 3) (3, 0) (5, 0)	2	B2 for a parabola with min (4, -1), through (2, 3), (6, 3), (3, 0), (5, 0) (B1 for a parabola with min (4, -1) or a parabola through (2, 3) and (6, 3) or a parabola through (3, 0) and (5, 0) or a translation of the given parabola along the x-axis by any value other than +3 with the points (-1, 3) (0, 0) (1, -1) (2, 0) (3, 3) all translated by the same amount)
	(b)		Parabola through (1, -2), (0, 0), (2, 0)	2	B2 parabola with min (1, -2), through (0, 0) and (2, 0) (B1 parabola with min (1, -2) or parabola through (0, 0), (2, 0) (-1, 6) and (3, 6))
19	(a)	$\frac{(x+4)(x-1)}{(2x-3)(x-1)}$	$\frac{x+4}{2x-3}$	3	M1 for $(x+4)(x-1)$ M1 for $(2x-3)(x-1)$ A1 cao
	(b)	$\frac{4(x-2)}{(x+2)(x-2)} + \frac{3(x+2)}{(x+2)(x-2)}$	$\frac{7x-2}{(x+2)(x-2)}$	3	M1 for denominator $(x+2)(x-2)$ oe or $x^2-4$ $\frac{4(x-2)}{(x+2)(x-2)}$ oe or $\frac{3(x+2)}{(x+2)(x-2)}$ oe M1 for $(x+2)(x-2)$ oe or $(x+2)(x-2)$ oe (NB. The denominator must be $(x+2)(x-2)$ or $x^2-4$ or another suitable common denominator) $\frac{7x-2}{(x+2)(x-2)}$ or $\frac{7x-2}{x^2-4}$ A1 for  SC: If no marks awarded then award B1 for $\frac{4(x-2)}{x^2-2} + \frac{3(x+2)}{x^2-2}$ oe

1MA0 Higher Tier – Practice Paper 1H (Set D)

Qn		Working	Answer	Mark	Notes
20	(a)		$\frac{5\sqrt{2}}{2}$	2	M1 for $\frac{5}{\sqrt{2}} \times \frac{\sqrt{2}}{\sqrt{2}}$ oe A1 for $\frac{5\sqrt{2}}{2}$ oe
	(b)		$8\sqrt{3}$	2	M1 for $2 \times 2 + 2\sqrt{3} + 2\sqrt{3} + \sqrt{3} \times \sqrt{3}$ or $(4 + 4\sqrt{3} + 3) - (4 - 4\sqrt{3} + 3)$ or $2 \times 2 - 2\sqrt{3} - 2\sqrt{3} + \sqrt{3} \times \sqrt{3}$ at least three terms in either correct; could be in a grid. A1 cao  OR  Difference of two squares M1 for $((2 + \sqrt{3}) - (2 - \sqrt{3}))((2 + \sqrt{3}) + (2 - \sqrt{3}))$ A1 cao
21			230	2	M1 for $180 + 50$ A1 cao  OR M1 for $360 - (180 - 50)$ or $360 - 130$ A1 cao  OR M1 for $50 + (90 - 50) + 90 + 50$ or $50 + 40 + 90 + 50$ A1 cao  OR

1MA0 Higher Tier – Practice Paper 1H (Set D)				
Qn	Working	Answer	Mark	Notes
				M1 for a suitable diagram (sketch) with bearing of lighthouse from ship indicated and $50^\circ$ marked at lighthouse; diagram only intended to indicate position of $50^\circ$ ; ignore other labels and markings unless they create ambiguity. A1 cao
22	eg. $x = 0.28181\dots$ $100x = 28.181\dots$  $99x = 27.9$	$\frac{31}{110}$	3	M1 for 0.28181(...) or $0.2 + 0.08181\dots$ or evidence of correct recurring decimal eg. 281.81(...) M1 for two correct recurring decimals that, when subtracted, would result in a terminating decimal, and attempting the subtraction eg. $100x = 28.1818\dots$ , $x = 0.28181\dots$ and subtracting  eg. $1000x = 281.8181\dots$ , $10x = 2.8181\dots$ and subtracting  $\frac{27.9}{99}$ or $\frac{279}{990}$ oe A1 cao
23	Vol cylinder = $\pi \times (2x)^2 \times 9x$ $= 36\pi x^3$  $36\pi x^3 = \frac{4}{3}\pi r^3$ $r^3 = 27x^3$	$3x$	3	M1 for sub. into $\pi r^2 h$ eg. $\pi \times (2x)^2 \times 9x$ oe $\pi \times (2x)^2 \times 9x = \frac{4}{3}\pi r^3$ oe M1 for $\sqrt[3]{\frac{36x^3}{4}} = \frac{4}{3}$ A1 oe eg.  NB : For both method marks condone missing brackets around the $2x$

**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn		Working	Answer	Mark	Notes
24			(4,3), (4,4), (4,5), (5,4) marked	3	M2 for identifying the correct region or at least 3 correct points with no more than 3 incorrect points (M1 for drawing $x = 3$ (solid or dashed line) or at least 1 correct point with no more than 3 incorrect points)  A1 cao
25			$t = \frac{3-4p}{p+2}$	4	M1 for intention to multiply both sides by $4+t$ eg $p \times 4 + t = 3 - 2t$ M1 for intention to correctly move their t terms to one side, and correctly move their other terms to the other side eg $p \times 4 + t - 4p + 2t = 3 - 2t + 2t - 4p$ M1 for intention to factorise eg $t(p \pm 2)$ $t = \frac{3-4p}{p+2}$ A1 for oe
26	(a)		640	2	M1 for $80 \times \left(\frac{8}{4}\right)^3$ or $80 \div \left(\frac{4}{8}\right)^3$ A1 cao
	(b)		40	2	M1 for $160 \div \left(\frac{8}{4}\right)^2$ or $160 \times \left(\frac{4}{8}\right)^2$ or ft their scale factor from (a) A1 cao
27	(a)		Circle, centre O, radius 2	2	B2 cao (B1 for a circle radius 2 any centre or for a circle or part of a circle centre (0, 0) any radius)

1MA0 Higher Tier – Practice Paper 1H (Set D)				
Qn	Working	Answer	Mark	Notes
	(b)		2	B2 cao (ignore if sketch outside region) (B1 for a curve with correct intercepts but incorrect amplitude OR for a curve starting at (0,1) with correct amplitude but incorrect intercepts; curves must have a shape that approximates to a cosine curve)
28			4	<p>B1 for identifying A at 3 or D at 6 or A(3, 0) or D(0, 6) oe eg may be seen as labels on the diagram</p> <p>M1 for <math>0 = \frac{-1}{-2} \times 3 + c</math></p> <p>M1 (dep on previous M1) for 6 + '1.5'</p> <p>A1 cao</p> <p>OR</p> <p>B1 for identifying A at 3 or D at 6 or A(3, 0) or D(0, 6) oe eg may be seen as labels on the diagram</p> <p>M1 for <math>3/6 = OP/3</math> or 1.5 oe seen (from similar triangles)</p> <p>M1 for 6 + '1.5'</p> <p>A1 cao</p> <p>OR</p> <p>B1 for identifying A at 3 or D at 6 or A(3, 0) or D(0, 6) oe eg may be seen as labels on the diagram</p> <p>M1 for <math>(6+OP)^2 = (6^2+32) + (32+OP^2)</math> oe (from Pythagoras)</p> <p>M1 for 6 + '1.5'</p> <p>A1 cao</p>

**1MA0 Higher Tier – Practice Paper 1H (Set D)**

Qn	Working	Answer	Mark	Notes
29	(a)	$a - 3b$	1	B1 for $a - 3b$ oe
	(b)		4	<p>M1 for (NC <math>\Rightarrow</math>) <math>2a - 2b</math> oe</p> <p>M1 for (NM <math>\Rightarrow</math>) <math>b + \frac{1}{2}(a - 3b)</math>"</p> <p>A1 for <math>\frac{1}{2}(a - b)</math> oe and <math>2a - 2b</math> oe</p> <p>C1 for NC is a multiple of NM (+ common point)</p> <p>OR</p> <p>M1 for (NC <math>\Rightarrow</math>) <math>2a - 2b</math> oe</p> <p>M1 for (MC <math>\Rightarrow</math>) <math>\frac{1}{2}(a - 3b) + a</math></p> <p>A1 for <math>\frac{3}{2}(a - b)</math> oe and <math>2a - 2b</math> oe</p> <p>C1 for NC is a multiple of MC (+ common point)</p> <p>OR</p> <p>M1 for (NM <math>\Rightarrow</math>) <math>b + \frac{1}{2}(a - 3b)</math>"</p> <p>M1 for (MC <math>\Rightarrow</math>) <math>\frac{1}{2}(a - 3b) + a</math></p> <p>A1 for <math>\frac{1}{2}(a - b)</math> oe and <math>\frac{3}{2}(a - b)</math> oe</p> <p>C1 for NM is a multiple to MC (+ common point)</p>

New Qn	Question Number	Paper Date	Skill tested	Maximum score	Mean Score	Mean Percentage	Percentage scoring full marks
1a	Q14b	1H 1206	Measure or draw a bearing between the points on a map or scaled plan	1	0.30	30	30.1
1b	Q14c	1H 1206	Mark on a diagram the position of point B given its bearing from the point A	2	0.96	48	31.4
2	Q16a	1H 1206	Use instances of index laws, including use of fractional, zero and negative powers, and powers raised to a power	1	0.46	46	46.0
3	Q20	1H 1206	Use elimination or substitution to solve simultaneous equations	4	1.59	40	33.4
4	Q10	1H 1211	Construct regions which may be defined by "nearer to" or "greater than"	3	1.18	39	35.5
5	Q21c	1H 1211	From cumulative frequency graphs estimate frequency greater/less than a given value	2	0.78	39	21.3
6	Q15c	1H 1206	Interpret box plots	2	0.75	38	12.8
7	Q12	1H 1206	Calculate volumes of right prisms, including the triangular prism, and shapes made from cubes and cuboids	3	1.11	37	34.9
8	Q16	1H 1211	Set up simple equations	4	1.42	36	23.8
9	Q01a	1H 1206	Design and use data-collection sheets for grouped, discrete and continuous data	2	0.69	35	14.0
10	Q22	1H 1211	Use elimination or substitution to solve simultaneous equations	4	1.38	35	28.0
11	Q13	1H 1206	Calculate and use the sums of the interior and exterior angles of polygons - (GM.c)	4	1.37	34	14.0
12	Q03b	1H 1206	Discuss, plot and interpret graphs (which may be non-linear) modelling real situations - (As)	3	0.97	32	28.0
13	Q18	1H 1206	Enlarge shapes using (0, 0) as the centre of enlargement	3	0.80	27	23.7
14a	Q22a	1H 1206	Produce histograms from class intervals with unequal width	3	0.82	27	11.7
14b	Q22b	1H 1206	Use and understand frequency density	2	0.52	26	17.1
15	Q12	1H 1211	Find the perimeters and areas of semicircles and quarter circles	3	0.69	23	8.6
16	Q18	1H 1211	Calculate and use the sums of the interior and exterior angles of polygon	4	0.92	23	21.6
17	Q21	1H 1206	Find missing angles on diagrams	4	0.89	22	4.7
18a	Q26a	1H 1206	Apply to the graph of $y = f(x)$ the transformations $y = f(x) + a$ , $y = f(ax)$ , $y = f(x+a)$ , $y = af(x)$ for linear, quadratic, sine and cosine functions $f(x)$	2	0.41	21	12.9
18b	Q26b	1H 1206	Apply to the graph of $y = f(x)$ the transformations $y = f(x) + a$ , $y = f(ax)$ , $y = f(x+a)$ , $y = af(x)$ for linear, quadratic, sine and cosine functions $f(x)$	2	0.16	8	5.3

New Qn	Question Number	Paper Date	Skill tested	Maximum score	Mean Score	Mean Percentage	Percentage scoring full marks
19a	Q23a	1H 1206	Simplify rational expressions by cancelling, adding, subtracting, and multiplying	3	0.50	17	6.3
19b	Q23b	1H 1206	Simplify rational expressions by cancelling, adding, subtracting, and multiplying	3	0.53	18	
20a	Q26a	1H 1211	Rationalise a denominator	2	0.30	15	2.8
20b	Q26b	1H 1211	Rationalise surds	2	0.19	10	
21	Q14	1H 1211	Given the bearing of point A from point B, work out the bearing of B from A	2	0.26	13	11.6
22	Q24	1H 1206	Convert between recurring decimals and fractions	3	0.37	12	4.3
23	Q25	1H 1206	Find the surface area and volumes of compound solids constructed from cubes, cuboids, cones, pyramids, spheres, hemispheres, cylinders	3	0.26	9	2.4
24	Q17	1H 1211	Show the solution set of several inequalities in two variables on a graph	3	0.28	9	6.1
25	Q24	1H 1211	Change the subject of a formula including cases where the subject is on both sides of the original formula, or where a power of the subject appears	4	0.32	8	4.1
26a	Q25a	1H 1211	Know the relationships between linear, area and volume scale factors of mathematically similar shapes and solids	2	0.14	7	4.5
26b	Q25b	1H 1211	Know the relationships between linear, area and volume scale factors of mathematically similar shapes and solids	2	0.22	11	
27a	Q27a	1H 1211	Construct the graphs of simple loci	2	0.13	7	1.9
27b	Q27b	1H 1211	Plot graphs of the circular functions $y = \sin x$ and $y = \cos x$ , within the range -360 degrees to +360 degrees	2	0.11	6	
28	Q23	1H 1211	Understand the gradients of parallel lines	4	0.20	5	1.8
29a	Q28a	1H 1211	Understand and use vector notation	1	0.19	19	1.5
29b	Q28b	1H 1211	Solve geometrical problems in 2-D using vector methods	4	0.14	4	
				<b>100</b>	<b>22.31</b>	<b>22.31</b>	