

**SULIT**  
**1449/1(GMP)**  
**Mathematics**  
**Kertas 1**  
**Peraturan**  
**Pemarkahan**  
**2014**

**1449/1(GMP)**



**SKEMA PRAKTIS BESTARI**  
**PROJEK JAWAB UNTUK JAYA (JUJ) 2014**



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**MATHEMATICS**

**Kertas 1 (SET 2)**

**PERATURAN PEMARKAHAN**

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**UNTUK KEGUNAAN GURU MATA PELAJARAN SAHAJA**

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Peraturan pemarkahan ini mengandungi 2 halaman bercetak

**[Lihat halaman sebelah**

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**SULIT**

## SKEMA JUJ 2014 KERTAS 1

NO SOALAN	JAWAPAN	NO SOALAN	JAWAPAN
1.	D	21.	C
2.	B	22.	A
3.	B	23.	D
4.	B	24.	B
5.	A	25.	C
6.	D	26.	D
7.	A	27.	B
8.	C	28.	B
9.	B	29.	A
10.	C	30.	B
11.	A	31.	D
12.	B	32.	C
13.	D	33.	A
14.	C	34.	B
15.	B	35.	D
16.	C	36.	B
17.	D	37.	A
18.	B	38.	C
19.	B	39.	B
20.	C	40.	D



**SULIT**  
**1449/2(GMP)**  
**Mathematics**  
**Kertas 2 SET2**  
**Peraturan**  
**Pemarkahan**  
**2014**

**1449/2(GMP)**



**SKEMA PRAKTIS BESTARI**  
**PROJEK JAWAB UNTUK JAYA (JUJ) 2014**



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**MATHEMATICS**  
**Kertas 2**  
**SET 2**

**PERATURAN PEMARKAHAN**

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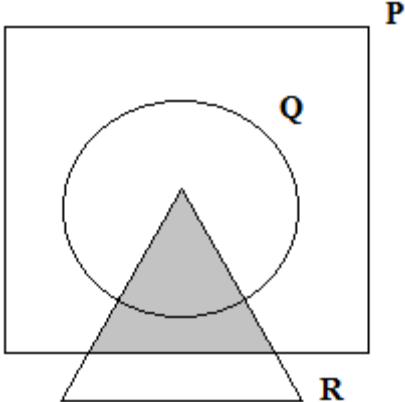
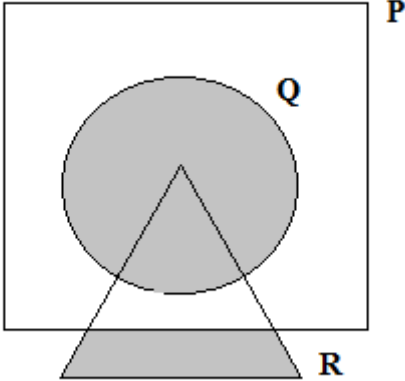
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**UNTUK KEGUNAAN GURU MATA PELAJARAN SAHAJA**

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Peraturan pemarkahan ini mengandungi 17 halaman bercetak

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Question	Solution and Mark Scheme	Marks	
<p>1(a)</p>		<p>P1</p>	
<p>(b)</p>			<p>P2</p>

Question	Solution and Mark Scheme	Marks	
2	$12x + 2y = 36$ or $3x - 6y = 48$ <u>or</u> equivalent	K1	
	<p><u>Note</u> Attempt to equate the coefficient one the unknowns, award K1</p> $13x = 52$ <u>or</u> $\frac{13y}{2} = -39$ <u>or</u> equivalent <p><b><u>OR</u></b></p> $x = 16 + 2y$ <u>or</u> $y = \frac{x-16}{2}$ <u>or</u> equivalent (K1) <p><u>Note</u> Attempt to make one of the unknowns as the subject, with two terms on other side, award K1</p> $\frac{13y}{2} = -39$ <u>or</u> $13x = 52$ <u>or</u> equivalent (K1) <p><b><u>OR</u></b></p> $\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{(-2 \times 3) - (1 \times \frac{1}{2})} \begin{pmatrix} -2 & -\frac{1}{2} \\ -1 & 3 \end{pmatrix} \begin{pmatrix} 9 \\ 16 \end{pmatrix}$ <u>or</u> equivalent (K2) <p><u>Note</u> Attempt to write matrix equation, award K1</p> $x = 4$ $y = -6$ <p><u>Note:</u> If <math>\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 4 \\ -6 \end{pmatrix}</math> as final answer, award N1</p>	K1	K1
		N1	N1
			<b>4</b>

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Question	Solution and Mark Scheme	Marks	
3	$x^2 - 5x - 6 = 0$ $(x+1)(x-6) = 0 \text{ or equivalent}$ <p><b><u>OR</u></b></p> $x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(1)(-6)}}{2(1)} \text{ or equivalent (K1)}$ $x = -1$ $x = 6$ <p><u>Note:</u></p> <ol style="list-style-type: none"> <li>1. Accept without “ = 0”</li> <li>2. Accept three terms on the same side, in any order</li> <li>3. Accept correct answers from three correct terms without factorization for Kk2.</li> </ol>	K1	
		K1	
		N1	
		N1	
			<b>4</b>
4(a)	$\angle JFG \text{ or } \angle GFJ$	P1	
(b)	$\tan \theta = \frac{4}{*10} \text{ or equivalent}$ $21.80^\circ \text{ or } 21^\circ 48'$	K1	
		N1	
			<b>3</b>

Question	Solution and Mark Scheme	Marks	
<p><b>5(a)</b></p> <p><b>(b)</b></p>	$m_{PS} = m_{QR} = -2$ $-2 = (-2)(3) + c \text{ or } y + 2 = (-2)(x - 3) \text{ or equivalent}$ <p>Note : <math>-2 = *(-2)(3) + c \text{ or } y + 2 = *(-2)(x - 3) \text{ or equivalent award K1}</math></p> $y = -2x + 4 \text{ or equivalent}$ $(0) = -2x + 4$ $x = 2$	P1	
	K1		
	N1		
	K1		
N1		<b>5</b>	
<p><b>6(a)</b></p> <p><b>(b)</b></p> <p><b>(c)</b></p>	$\frac{1}{2} \times (v + 18) \times 16 = 256$ $v = 14$ $256 + (12 \times 18) + \frac{1}{2} \times (12) \times (18)$ $580$ $\frac{580}{40}$ $14.5$		K1
	N1		
	K1		
	N1		
	K1		
	N1		<b>6</b>

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Question	Solution and Mark Scheme	Marks	
<p><b>7(a)</b></p> <p><b>(b) (i)</b></p> <p><b>(ii)</b></p> <p><b>(c)</b></p>	<p>False/Palsu</p> <p>If <math>x - y &gt; 0</math> then <math>x &gt; y</math> Jika <math>x - y &gt; 0</math> maka <math>x &gt; y</math></p> <p>If <math>x &gt; y</math> then <math>x - y &gt; 0</math> Jika <math>x &gt; y</math> maka <math>x - y &gt; 0</math></p> <p><math>x \neq 5</math></p>	<p>P1</p> <p>P1</p> <p>P1</p> <p>P1</p>	<p></p> <p></p> <p><b>4</b></p>
<p><b>8(a)</b></p> <p><b>(b)</b></p>	$-\frac{1}{2} \begin{pmatrix} 2 & 5 \\ 4 & 9 \end{pmatrix}$ $\begin{pmatrix} 9 & -5 \\ -4 & 2 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} -6 \\ -2 \end{pmatrix}$ $\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{(9)(2) - (-5)(-4)} \begin{pmatrix} 2 & 5 \\ 4 & 9 \end{pmatrix} \begin{pmatrix} -6 \\ -2 \end{pmatrix}$ $x = 11$ $y = 21$ <p><u>Note:</u></p> <p>1. Do not accept <math>\begin{matrix} * \\ \text{matrix} \end{matrix} \begin{pmatrix} \textit{inverse} \\ \end{pmatrix} = \begin{pmatrix} 2 &amp; -5 \\ -4 &amp; 2 \end{pmatrix}</math> <u>or</u></p> $\begin{matrix} * \\ \text{matrix} \end{matrix} \begin{pmatrix} \textit{inverse} \\ \end{pmatrix} = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}.$ <p>2. <math>\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 11 \\ 21 \end{pmatrix}</math> as final answer, award N1 .</p> <p>3. Do not accept solutions solved not using matrix method.</p>	<p>P2</p> <p>K1</p> <p>K1</p> <p>N1</p> <p>N1</p>	<p></p> <p></p> <p></p> <p></p> <p><b>6</b></p>

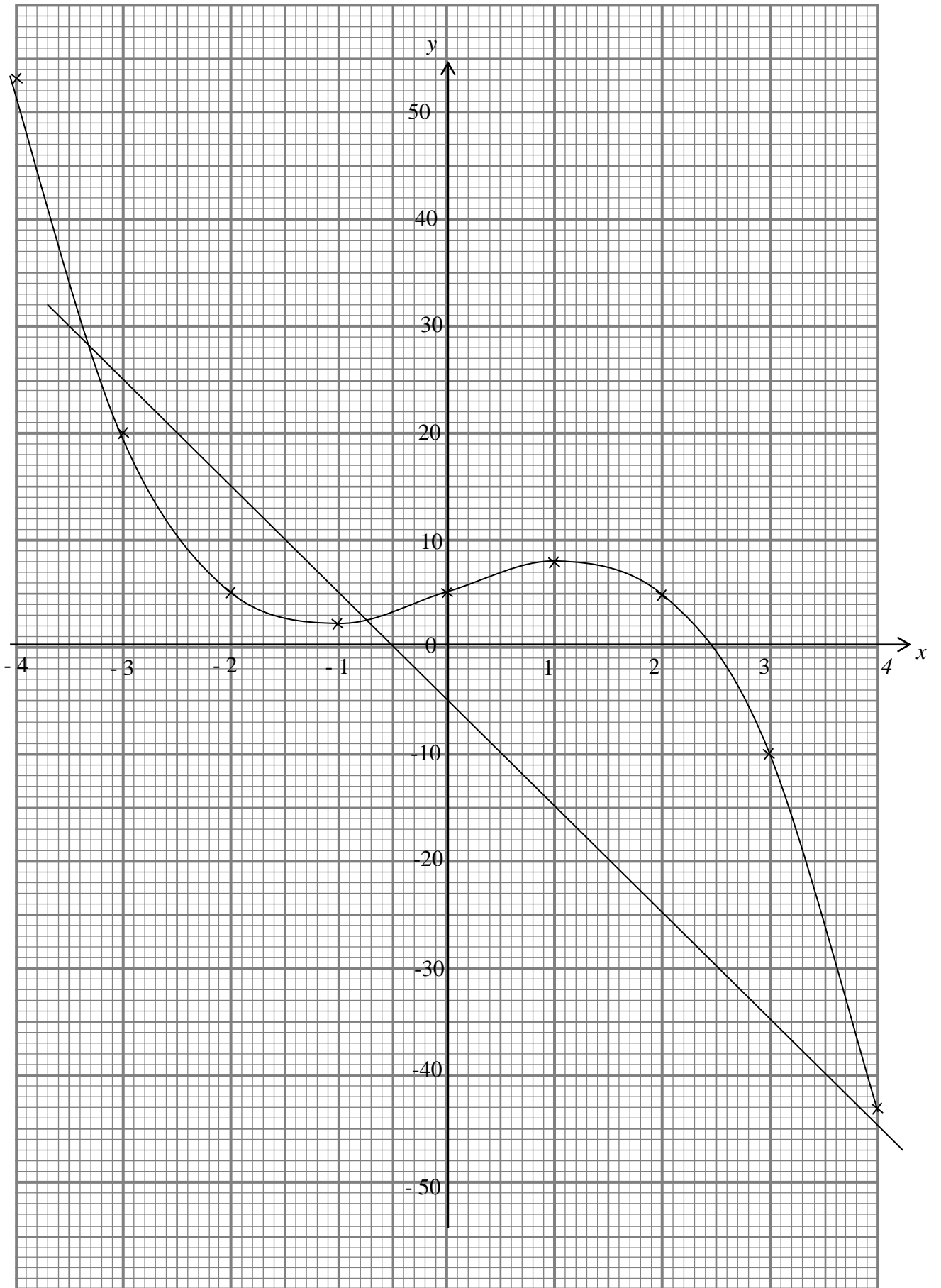
Question	Solution and Mark Scheme	Marks				
<p>9</p>	$\frac{22}{7} \times 7 \times 7 \times 14$ $\frac{1}{3} \times \frac{22}{7} \times 7^2 \times 7$ $\frac{22}{7} \times 7 \times 7 \times 14 - \frac{1}{3} \times \frac{22}{7} \times 7^2 \times 7$ $1796\frac{2}{3} \text{ or } \frac{5390}{3} \text{ or } 1796.67$	<p>K1</p> <p>K1</p> <p>K1</p> <p>N1</p>	<table border="1"> <tr><td> </td></tr> <tr><td style="text-align: center;"><b>4</b></td></tr> <tr><td> </td></tr> </table>		<b>4</b>	
<b>4</b>						
<p>10(a)</p> <p>(b)</p>	$\frac{120}{360} \times 2 \times \frac{22}{7} \times 7 \text{ or } \frac{60}{360} \times 2 \times \frac{22}{7} \times 14$ $\frac{120}{360} \times 2 \times \frac{22}{7} \times 7 + \frac{60}{360} \times 2 \times \frac{22}{7} \times 14 + 7 + 7 + 14$ $57\frac{1}{3} \text{ or } \frac{172}{3} \text{ or } 57.33$ $\frac{120}{360} \times \frac{22}{7} \times 7^2 \text{ or } \frac{60}{360} \times \frac{22}{7} \times 14^2 \text{ or } \frac{180}{360} \times \frac{22}{7} \times 3.5^2$ $\frac{120}{360} \times \frac{22}{7} \times 7^2 + \frac{60}{360} \times \frac{22}{7} \times 14^2 - \frac{180}{360} \times \frac{22}{7} \times 3.5^2$ $134\frac{3}{4} \text{ or } \frac{539}{4} \text{ or } 134.75$ <p><u>Note:</u></p> <ol style="list-style-type: none"> <li>1. Accept <math>\pi</math> for mark.</li> <li>2. Accept correct value from incomplete substitution for K mark.</li> <li>3. Correct answer from incomplete working, award Kk2</li> </ol>	<p>K1</p> <p>K1</p> <p>N1</p> <p>K1</p> <p>K1</p> <p>N1</p>	<table border="1"> <tr><td> </td></tr> <tr><td style="text-align: center;"><b>6</b></td></tr> <tr><td> </td></tr> </table>		<b>6</b>	
<b>6</b>						

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Question	Solution and Mark Scheme	Marks	
<p><b>11</b></p> <p><b>(a)</b></p> <p><b>(b)</b></p>	<p>Sampel space,  <math>S = \{ 3M, 3H, 7M, 7H, 0M, 0H \}</math>            Note : Allow one mistake in listing the sample space for P1</p> <p><math>\{ 3M, 7M \}</math></p> <p><math>\frac{2}{6}</math> or <math>\frac{1}{3}</math></p> <p><math>\{ 3M, 3H, 7H, 0H \}</math></p> <p><math>\frac{4}{6}</math> or <math>\frac{2}{3}</math></p> <p><u>Note:</u></p> <p>1. Accept answer without working for K1N1</p>	<p>P2</p> <p>K1</p> <p>N1</p> <p>K1</p> <p>N1</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p><b>6</b></p>

Question	Solution and Mark Scheme	Marks	
12(a)	5  -10	K1  K1	2
(b)	<p><u>Graph</u> Axes drawn in the correct directions with uniform scale for <math>-4 \leq x \leq 4</math> and <math>-43 \leq y \leq 53</math></p> <p>All 7 points and *2 point correctly plotted or curve passes through all the points for <math>-4 \leq x \leq 4</math> and <math>-43 \leq y \leq 53</math></p> <p>A smooth and continuous curve without any straight line passes through all 9 correct points using the given scale for <math>-4 \leq x \leq 4</math> and <math>-43 \leq y \leq 53</math></p> <p><u>Note:</u> 1. 7 or 8 points plotted correctly, award K1 2. Ignore curve out of range.</p>	P1  K2  N1	4
(c)(i)	$-28 \leq y \leq -26$	P1	
(ii)	$3.2 \leq x \leq 3.3$	P1	2
(d)	<p>Identify equation <math>y = -10x - 5</math></p> <p>Straight line <math>y = -10x - 5</math> correctly drawn</p> <p><u>Values of <math>x</math>:</u></p> <p><math>-3.4 \leq x \leq -3.3</math> <math>-0.85 \leq x \leq -0.75</math></p>	K1  K1  N1 N1	4
	<p><u>Note:</u> 1. Allow N marks if values of <math>x</math> are shown on the graph. 2. Values of <math>x</math> obtained by calculation, award N0</p>		12

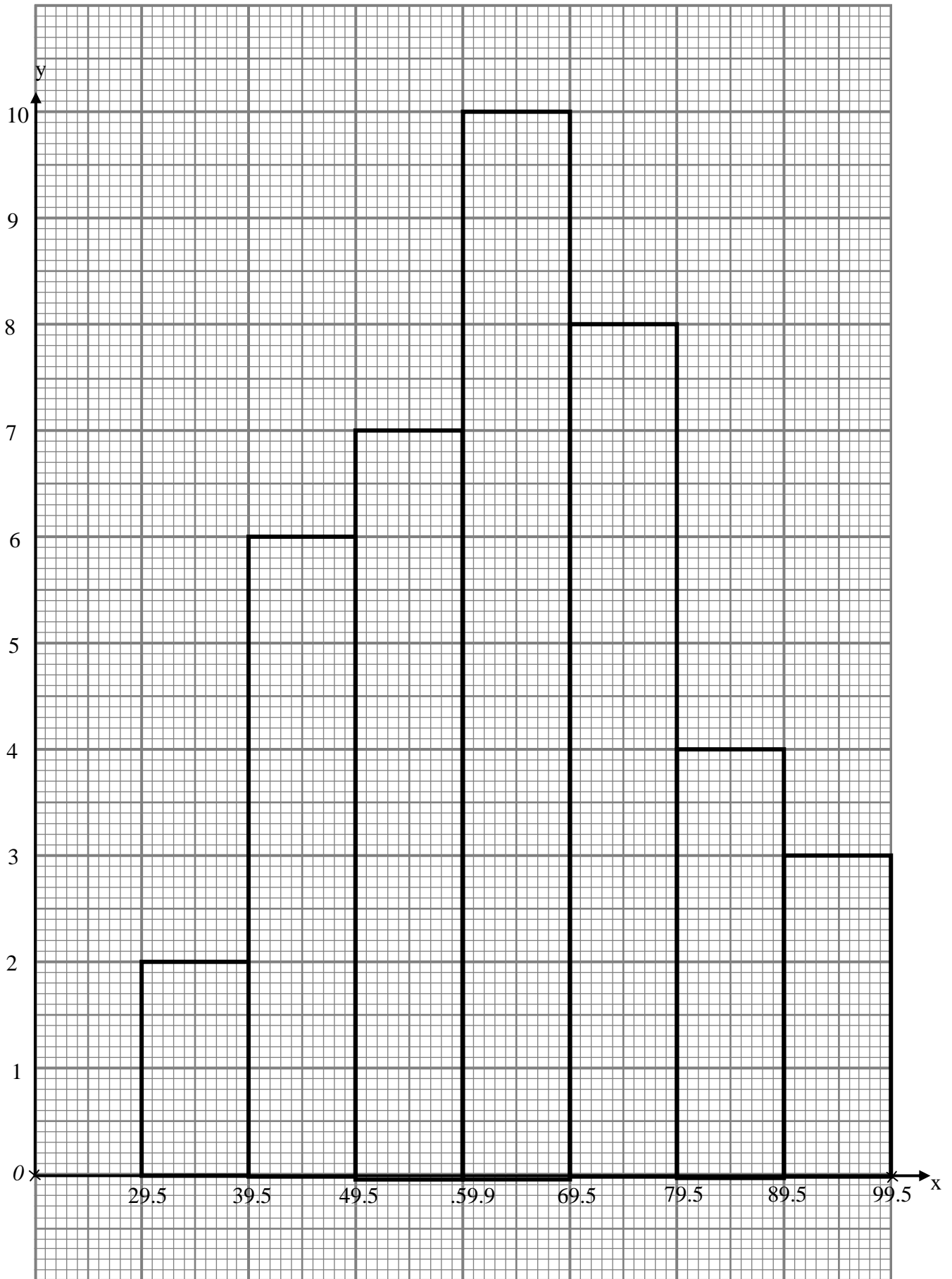
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Question	Solution and Mark Scheme	Marks	
13(a)(i)	(8,4 )	P1	
(ii)	( 8,0 ) <u>Note:</u> (3, 2) or point (8,0) marked or point (3, 2) marked, award P1	P2	3
(b)(i)(a)	Rotation 90 <sup>0</sup> clockwise at centre ( 5, 1 )  <u>Note:</u> 1. Rotation 90 <sup>0</sup> clockwise award P2 or 2. Rotation at centre ( 5, 1 ) award P2 or 3. Rotation award P1	P3	
(b)	Enlargement with scale factor 2 at centre L or ( 7, 1 )  <u>Note:</u> 1. Enlargement centre L or ( 7, 1 ) <u>or</u> Enlargement scale factor 2, award P2 or 2. Enlargement, award P1 .	P3	
(ii)	$2^2 \times 25.5 - 25.5$  76.5	K2  N1	8

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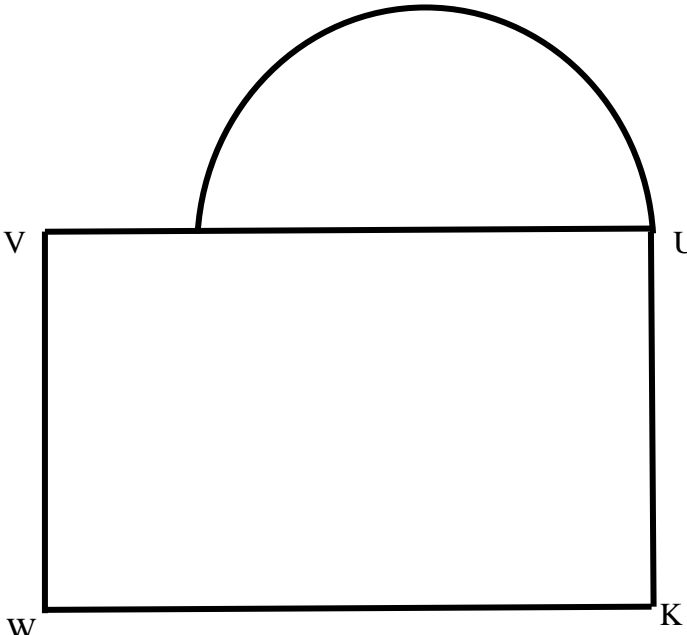
Question	Solution and Mark Scheme	Marks																																	
14(a)	<table border="1" data-bbox="467 317 1052 699"> <thead> <tr> <th></th> <th>Class Interval <i>Selang Kelas</i></th> <th>Midpoint <i>Titik tengah</i></th> <th>Frequency <i>Kekerapan</i></th> </tr> </thead> <tbody> <tr> <td></td> <td>30 – 39</td> <td>34.5</td> <td>2</td> </tr> <tr> <td>II</td> <td>40 – 49</td> <td><b>44.5</b></td> <td><b>6</b></td> </tr> <tr> <td>III</td> <td>50 – 59</td> <td><b>54.5</b></td> <td><b>7</b></td> </tr> <tr> <td>IV</td> <td>50 – 69</td> <td><b>64.5</b></td> <td><b>10</b></td> </tr> <tr> <td>V</td> <td>70 – 79</td> <td><b>74.5</b></td> <td><b>8</b></td> </tr> <tr> <td>VI</td> <td>80 – 89</td> <td><b>84.5</b></td> <td><b>4</b></td> </tr> <tr> <td>VII</td> <td>95 – 99</td> <td><b>94.5</b></td> <td><b>3</b></td> </tr> </tbody> </table> <p data-bbox="391 772 987 808">Midpoint : (II to VII)</p> <p data-bbox="391 846 997 882">frequency : (II to VIII)</p> <p data-bbox="391 884 959 919"><u>Note:</u> Allow one mistake frequency for P1.</p>		Class Interval <i>Selang Kelas</i>	Midpoint <i>Titik tengah</i>	Frequency <i>Kekerapan</i>		30 – 39	34.5	2	II	40 – 49	<b>44.5</b>	<b>6</b>	III	50 – 59	<b>54.5</b>	<b>7</b>	IV	50 – 69	<b>64.5</b>	<b>10</b>	V	70 – 79	<b>74.5</b>	<b>8</b>	VI	80 – 89	<b>84.5</b>	<b>4</b>	VII	95 – 99	<b>94.5</b>	<b>3</b>	P1	
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(b)	$\frac{34.5(*2)+44.5(*6)+54.5(*7)+64.5(*10)+74.5(*8)+84.5(*4)+94.5(*3)}{40}$ <p data-bbox="451 1087 509 1123">64.5</p>	K2	3																																
(c)	<p data-bbox="354 1161 493 1197"><u>Histogram</u></p> <p data-bbox="386 1199 1094 1234">Axes drawn in correct directions with uniform scale for</p> <p data-bbox="386 1236 829 1272"><math>29.5 \leq x \leq 99.5</math> and <math>0 \leq y \leq 10</math></p> <p data-bbox="386 1274 1295 1310">Horizontal axes labeled with values of upper boundary or class interval</p> <p data-bbox="386 1350 1081 1386">* 7 bar drawn using upper boundary or class interval.</p> <p data-bbox="375 1425 1016 1461"><u>Note:</u> * 5 or * 6 bar drawn correctly, award K1</p> <p data-bbox="370 1501 607 1537">Correct bar drawn</p>	P1	3																																
(d)	<p data-bbox="386 1575 423 1610">15</p> <p data-bbox="386 1619 987 1654"><u>Note:</u> Do not accept answer without histogram</p>	K1	4																																
			<u>1</u> <u>12</u>																																

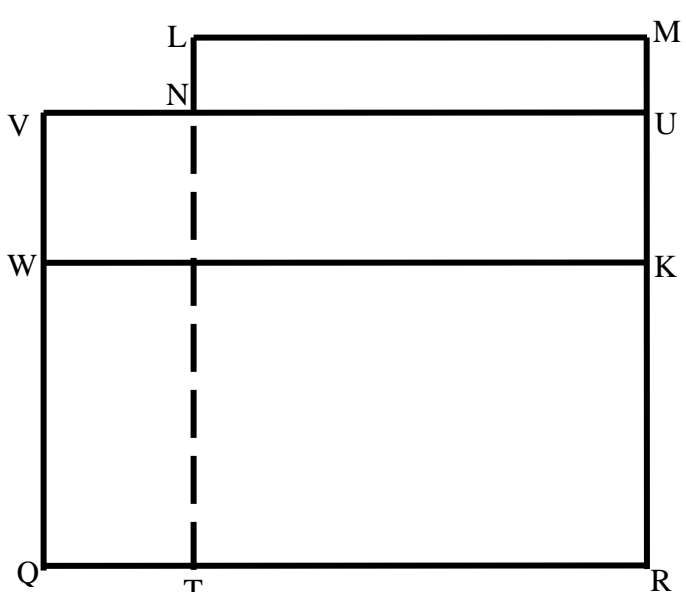




Question	Solution and Mark Scheme	Marks	
15(a)	<div data-bbox="483 331 922 842" data-label="Diagram"> </div> <p data-bbox="407 940 1105 978">Correct shape with rectangles PQWV. All solid lines.</p> <p data-bbox="407 1014 662 1052"><math>WQ &lt; QP &lt; PV</math></p> <p data-bbox="407 1087 1040 1161">Measurements correct to <math>\pm 0.2</math> cm (one way) and all angles at vertices = <math>90^\circ \pm 1^\circ</math></p>		
		K1	
		K1	
		N1	
			<b>3</b>

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Question	Solution and Mark Scheme	Marks	
<p>(b)(i)</p>	<div style="text-align: center;">  </div> <p>Correct shape VWKU and semicircle . All solid lines.</p> <p><math>WK &gt; KU = WV</math></p> <p>Measurements correct to <math>\pm 0.2</math> cm (one way) and <math>\angle V, \angle W, \angle K, \angle U = 90^\circ \pm 1^\circ</math></p>	<p>K1</p> <p>K1</p> <p>N2</p>	<p><b>4</b></p>

Question	Solution and Mark Scheme	Marks	
<p>(ii)</p>	<div style="text-align: center;">  </div> <p>Correct shape with rectangles LMUN , VUKW and WKRQ. All solid lines.</p> <p><u>Note:</u> Ignore line NT</p> <p>N and T joined with dashed line to form rectangle NTRU N and T lies between VQ and UR.</p> <p><math>QR = WK = VU &gt; LM &gt; KR = WQ &gt; KU = VW &gt; UM = NL</math></p> <p>Measurements correct to <math>\pm 0.2</math> cm (one way) and All angles at vertices of rectangles = <math>90^\circ \pm 1^\circ</math></p>	<p>K1</p> <p>K1</p> <p>K1</p> <p>N2</p>	<p><b>5</b></p> <hr/> <p><b>12</b></p>

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Question	Solution and Mark Scheme	Marks	
<b>16(a)</b>	( 60° N , 140° E )  <u>Note:</u> 140° E award P2 OR 140° $\theta$ ° E , award P1	P3	<b>3</b>
<b>(b)</b>	60 x 60  3600  <u>Note:</u> 60 or 180 – 60 – 60 seen , award K1	K2	
<b>(c)(i)</b>	(52 + 40 ) x 60 cos 60  2760  Note : ( 52 + 40 ) or cos 60 seen award K1	N1	<b>3</b>
<b>(ii)</b>	( 30 x 60 ) ÷ 250  7.2  Note : ( *30 x 60 ) ) ÷ 250 award K1	K2	<b>3</b>
			<b>12</b>