



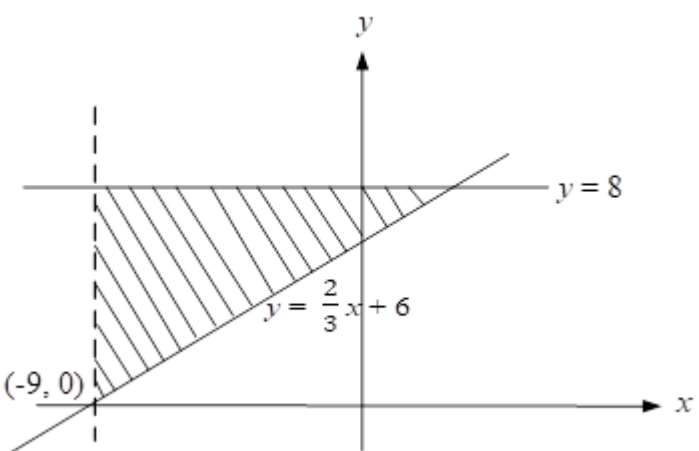
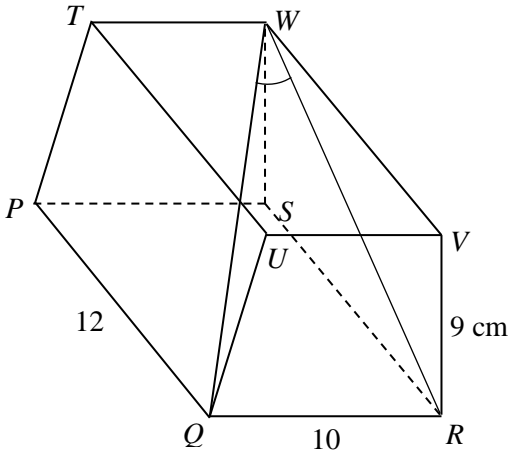
# **MODUL PINTAS TINGKATAN 5**

Peperiksaan Percubaan Tahun 2019

Skema Jawapan Mathematics

Kertas 2 1449/2

**MARKING SCHEME MODUL PINTAS MATHEMATICS FORM 5**

NO.	MARKING SCHEME	MARKS	
		SUB MARKS	TOTAL MARKS
1	<p>(a) Point <math>(-6, 5)</math> satisfies <math>y = -\frac{1}{2}x + 2</math></p> <p>(b)</p>  <p>1. <math>x = -9</math>, dashed line 2. Shaded region</p> <p><i>Note :</i> <math>x = -9</math>, solid line      K0</p>	N1          K1 N2	          4
2	<p>(a)</p>  <p><i>Note :</i> Write the answer without mark, N0</p> <p>(b) <math>\tan \theta = \frac{10}{15}</math> @ <math>\tan^{-1} \frac{10}{15}</math></p> <p><math>\theta = 33.69^\circ</math> @ <math>33^\circ 41'</math></p>	K1          K1 N1	          3

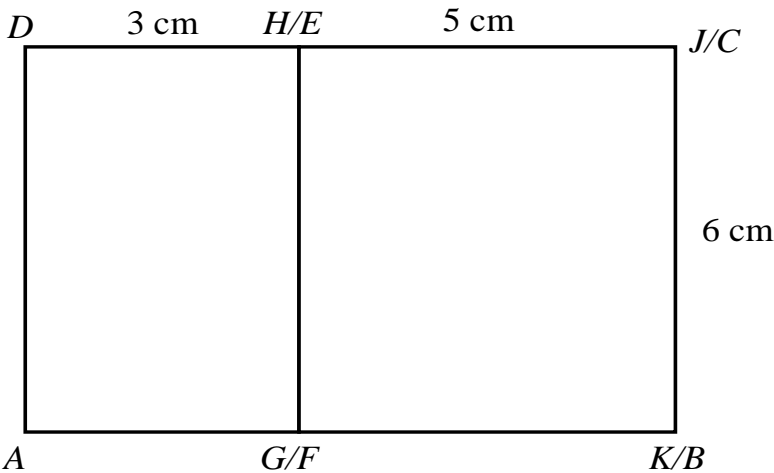
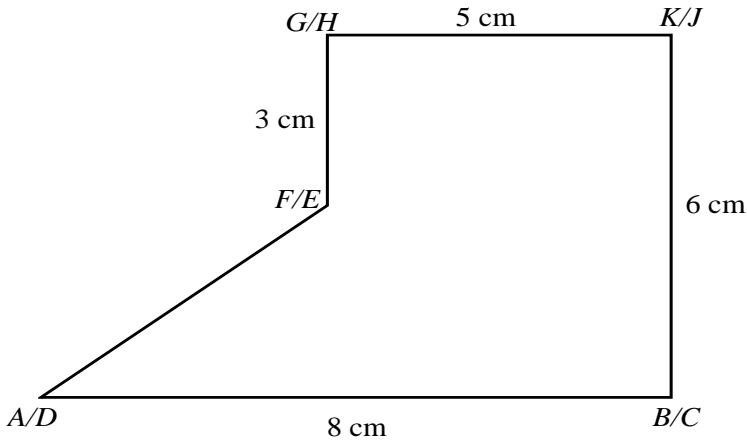
3	<p>(a) <math>(3x - 2)^2 = (x + 7)^2 + x^2</math>  <math>7x^2 - 26x - 45 = 0</math></p> <p>(b) <math>7x^2 - 26x - 45 = 0</math>  <math>(x - 5)(7x + 9) = 0</math>  <math>x = 5, -\frac{9}{7}</math></p> <p>Panjang BC = <math>3(5) - 2</math>  <math>= 13</math></p>	<p>K1 N1</p> <p>K1</p> <p>N1</p>	4
4	<p><math>x = \text{length}, y = \text{width}</math></p> <p><math>2x + 2y = 44</math> @ <math>3x + 4y = 72</math></p> <p><math>2x + 2y = 44</math> x 2</p> <p><math>4x + 4y = 88</math>  <math>3x + 4y = 72</math></p> <p><math>x = 16</math>  <math>y = 6</math></p>	<p>K1</p> <p>K1</p> <p>N1 N1</p>	4
5	<p><math>\frac{1}{3} \times \frac{22}{7} \times 3.5^2 \times h = 308</math>  <math>h = 24</math></p> <p>height of the container = <math>24 \times \frac{14.6}{7}</math>  <math>= \frac{1752}{35}</math> @ <math>50 \frac{2}{35}</math> @ 50.06</p>	<p>K1 K1</p> <p>K1</p> <p>N1</p>	4
6	<p>(a) <math>(\frac{120}{360} \times 2 \times \frac{22}{7} \times 7)</math> or <math>(\frac{90}{360} \times 2 \times \frac{22}{7} \times 14)</math> or equivalent</p> <p><math>(\frac{120}{360} \times 2 \times \frac{22}{7} \times 7) + 7 + 7 + (\frac{90}{360} \times 2 \times \frac{22}{7} \times 14) + 14</math></p> <p>or equivalent</p> <p><math>\frac{194}{3}</math> or <math>64 \frac{2}{3}</math> or 64.67</p> <p>(b) <math>(\frac{120}{360} \times \frac{22}{7} \times 7^2)</math> or <math>(\frac{90}{360} \times \frac{22}{7} \times 14^2)</math> or <math>(\frac{1}{2} \times 7 \times 7)</math></p> <p><math>(\frac{120}{360} \times \frac{22}{7} \times 7^2) + (\frac{90}{360} \times \frac{22}{7} \times 14^2) - (\frac{1}{2} \times 7 \times 7)</math></p> <p><math>\frac{1085}{6}</math> or <math>180 \frac{5}{6}</math> or 180.83</p> <p>Notes :</p> <p>1. Accept <math>\pi</math> for K mark</p> <p>2. Accept correct value from incomplete substitution, for K mark</p> <p>3. Correct answer from incomplete working , award Kk2</p>	<p>K1</p> <p>K1</p> <p>N1</p> <p>K1</p> <p>K1</p> <p>N1</p>	<p>3</p> <p>3</p> <p>6</p>

7	<p>(a) False @ <i>palsu</i></p> <p>(b) or @ <i>atau</i></p> <p>(c) Set <math>Q</math> has 8 elements @ <i>Set <math>Q</math> mempunyai 8 unsur</i></p> <p>(d) <math>3(n^2 + n)</math>, where <math>n = 1, 2, 3, 4, \dots</math></p> <p><i>Note:</i> If <math>3(n^2 + n)</math> seen, award K1</p>	<p>P1</p> <p>P1</p> <p>P1</p> <p>N2</p>	<p>5</p>
8	<p>(a) <math>-\frac{1}{24} \begin{pmatrix} -2 &amp; - \\ -4 &amp; 6 \end{pmatrix}</math></p> <p>(b) <math>\begin{pmatrix} 6 &amp; 3 \\ 4 &amp; -2 \end{pmatrix} \begin{pmatrix} m \\ n \end{pmatrix} = \begin{pmatrix} 3 \\ -10 \end{pmatrix}</math></p> <p><math>\begin{pmatrix} m \\ n \end{pmatrix} = -\frac{1}{6(-2)-3(4)} \begin{pmatrix} -2 &amp; -3 \\ -4 &amp; 6 \end{pmatrix} \begin{pmatrix} 3 \\ -10 \end{pmatrix}</math></p> <p><math>m = -1</math> <math>n = 3</math></p> <p><i>Notes :</i></p> <p>1. Do not accept *(inverse matrix) = <math>\begin{pmatrix} 6 &amp; 3 \\ 4 &amp; -2 \end{pmatrix}</math> or *(inverse matrix) = <math>\begin{pmatrix} 1 &amp; 0 \\ 0 &amp; 1 \end{pmatrix}</math></p> <p>2. <math>\begin{pmatrix} m \\ n \end{pmatrix} = \begin{pmatrix} -1 \\ 3 \end{pmatrix}</math> as final answer, award N1</p> <p>3. Do accept any solutions solved not using matrix method.</p>	<p>N1</p> <p>K1</p> <p>K1</p> <p>N1</p> <p>N1</p>	<p>1</p> <p>4</p> <p>5</p>
9	<p>(a) <math>y = 5</math></p> <p>(b) <math>m = \frac{5}{2}</math></p> <p><math>5 = \frac{5}{2}(4) + c</math> or <math>c = -5</math> or equivalent</p> <p><math>y = \frac{5}{2}x - 5</math></p> <p>(c) <math>0 = \frac{5}{2}x - 5</math></p> <p><math>x</math>-intercept = 2</p>	<p>N1</p> <p>K1</p> <p>K1</p> <p>N1</p> <p>K1</p> <p>N1</p>	<p>1</p> <p>3</p> <p>2</p> <p>6</p>

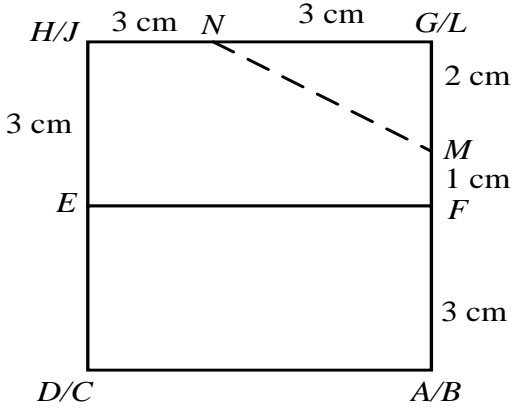
10	(a) 7	N1	1						
	(b) $\frac{12-0}{4-0}$	K1							
	3	N1	2						
	(c) $\frac{1}{2} \times (7 + 14) \times 12 = \frac{1}{2} \times 14 \times v$	K1							
	$v = 18$	N1	2						
			5						
11	(a) $S = \{ mA, ma, mN, Am, Aa, AN, am, aA, aN, Nm, NA, Na \}$	K2	2						
	<i>Note :</i> Any two mistakes, award K1								
	(b) (i) $\{ Am, am, Nm \}$	K1							
	$\frac{3}{12}$ or $\frac{1}{4}$	N1	2						
	(ii) $\{ Aa, aA \}$	K1							
$\frac{2}{12}$ or $\frac{1}{6}$	N1	2							
			6						
12	(a)								
	<table border="1"><tr><td><math>x</math></td><td>- 2.4</td><td>2</td></tr><tr><td><math>y</math></td><td>18.82</td><td>- 3</td></tr></table>	$x$	- 2.4	2	$y$	18.82	- 3	K1K1	2
	$x$	- 2.4	2						
	$y$	18.82	- 3						
	(b) Refer graph								
1. All the axes drawn in the correct direction with uniform scales for $-3 \leq x \leq 4$ and $-59 \leq y \leq 32$ .	K1								
2. 8 points are correctly plotted within the range $-3 \leq x \leq 4$ .	K2								
3. Smooth and continuous curve without any straight line between any two points within $-3 \leq x \leq 4$ .	N1	4							
<i>Notes :</i>									
1. If 6 or 7 points correctly plotted, only K1 will be given.	K1								
2. Deduct 1 mark if other scales are used.									
(c) (i) $1 \leq y \leq 3$	K1	2							
(ii) $-1.4 \leq x \leq -1.2$	K1								

	<p>(d) <math>y = -8x</math> drawn on the graph</p> <p>The values of <math>x</math> :</p> <p><math>-2.7 \leq x \leq -2.5</math></p> <p><math>-0.65 \leq x \leq -0.45</math></p> <p><math>3.0 \leq x \leq 3.2</math></p> <p>Notes :</p> <p>1. N marks will be given if the values of <math>x</math> are shown in the graph.</p> <p>2. If the values are obtained by calculation, N0.</p>	<p>N1</p> <p>N1</p> <p>N1</p>	<p>3</p> <p><b>Total = 12</b></p>
13	<p>(a) (i) (2, 2)</p> <p>Notes :</p> <p>(0, 4) seen or drawn on the grid P1</p> <p>(ii) (2, 0)</p>	<p>P2</p> <p>P1</p>	<p>3</p>
	<p>(b) (i) (a) <b>V</b> : Rotation <math>90^\circ</math> anticlockwise at centre <math>G(4, 3)</math> @ <i>Putaran <math>90^\circ</math> lawan arah jam pada pusat <math>G(4, 3)</math></i> or equivalent</p> <p>Notes :</p> <p>1. Rotation <math>90^\circ</math> anticlockwise or Rotation, centre <math>G(4, 3)</math> P2 <i>Putaran <math>90^\circ</math> lawan arah jam @ putaran pada pusat <math>G(4, 3)</math></i> P2</p> <p>2. Rotation / putaran P1</p>	<p>P3</p>	
	<p>(b) (i) (b) Enlargement with a scale factor of 3 at centre (3, 3) @ <i>Pembesaran dengan faktor skala 3 pada pusat (3, 3)</i> or equivalent</p> <p>Notes :</p> <p>1. Enlargement, scale factor 3 or Enlargement, centre (3, 3) P2 <i>Pembesaran, faktor skala 3 @ Pembesaran, pusat (3, 3)</i> P2</p> <p>2. Enlargement / pembesaran P1</p>	<p>P3</p>	<p>6</p>
	<p>(b) (ii) <math>3^2 \times 30 - 30</math> 240</p> <p>Notes :</p> <p><math>3^2 \times 30</math> award K1</p>	<p>K2 N1</p>	<p>3</p> <p><b>Total = 12</b></p>

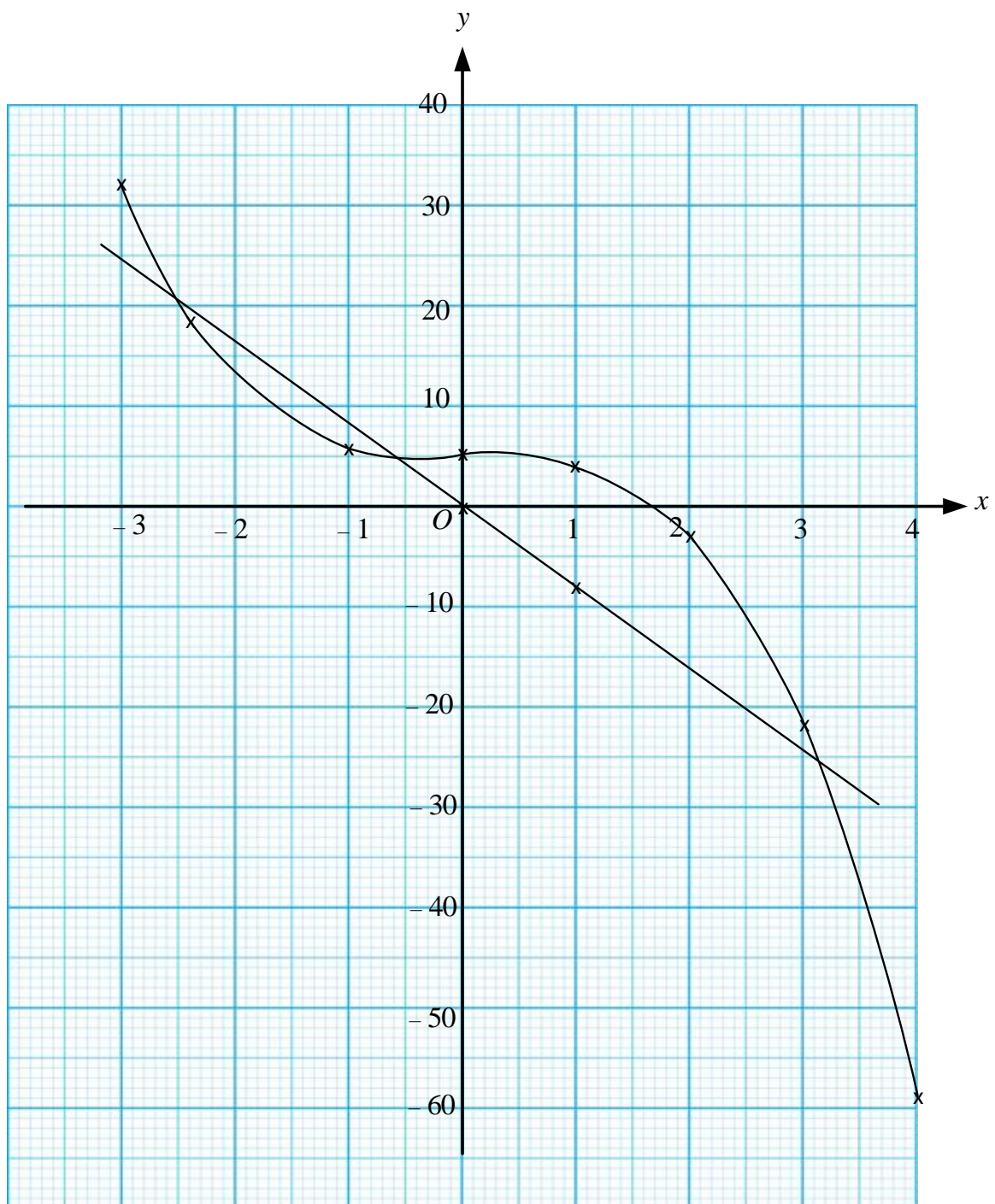
14	(a)	$\frac{5(62)+11(67)+24(72)+38(77)+40(82)+52(87)+20(92)+10(97)}{5+11+24+38+40+52+20+10}$ $\frac{16\,315}{200}$ 81.58	K2	3																				
			N1																					
	(b)	<table><tr><th>Upper boundary <i>Sempadan atas</i></th><th>Cumulative frequency <i>Kekerapan longgokan</i></th></tr><tr><td>59.5</td><td>0</td></tr><tr><td>64.5</td><td>5</td></tr><tr><td>69.5</td><td>16</td></tr><tr><td>74.5</td><td>40</td></tr><tr><td>79.5</td><td>78</td></tr><tr><td>84.5</td><td>118</td></tr><tr><td>89.5</td><td>170</td></tr><tr><td>94.5</td><td>190</td></tr><tr><td>99.5</td><td>200</td></tr></table>	Upper boundary <i>Sempadan atas</i>	Cumulative frequency <i>Kekerapan longgokan</i>	59.5	0	64.5	5	69.5	16	74.5	40	79.5	78	84.5	118	89.5	170	94.5	190	99.5	200	K1 K1	2
	Upper boundary <i>Sempadan atas</i>	Cumulative frequency <i>Kekerapan longgokan</i>																						
59.5	0																							
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79.5	78																							
84.5	118																							
89.5	170																							
94.5	190																							
99.5	200																							
(c)	Refer graph  1. All the axes drawn in the correct direction with uniform scales for $59.5 \leq x \leq 99.5$ and $0 \leq y \leq 200$ . 2. Plot all 9 points correctly. 3. Drawing of the ogive.  <i>Notes :</i> 1. If 7 or 8 points plotted correctly, only K1 will be given. 2. Deduct 1 mark if other scales are used.	K1  K2 N1	4																					
(d)	(i) $\frac{87 - 76}{11}$  (ii) $\frac{200 - 136}{64}$	K1 N1  N1	3																					
				Total = 12																				

<p>15</p>	<p>(a) (i)</p>  <p>Notes :</p> <p>Correct shape rectangles <math>ABCD</math> K1</p> <p><math>AB &gt; BC = AD &gt; DC</math> K1</p> <p>Measurements accurate up to <math>\pm 0.2</math> cm (one way) and all right angles = <math>90^\circ \pm 1</math> N2</p>	<p>K1 K1 N1</p>	<p>3</p>
<p>15</p>	<p>(a) (ii)</p>  <p>Notes :</p> <p>Correct shape pentagon <math>ABCKHF</math> K1</p> <p><math>AB &gt; BK &gt; KG &gt; GF</math> K1</p> <p>Measurements accurate up to <math>\pm 0.2</math> cm (one way) and all right angles = <math>90^\circ \pm 1</math> N2</p>	<p>K1  K1 N2</p>	<p>4</p>



16	 <p>Notes :</p> <p>Correct shape rectangle <i>DAFE</i> and <i>FGHE</i> K1</p> <p>Dashed line <i>NM</i> K1</p> <p><math>DA &gt; AF = FG = HE</math> K1</p> <p>Measurements accurate up to <math>\pm 0.2</math> cm (one way) and all right angles = <math>90^\circ \pm 1</math> N2</p>	K1 K1 K1 N2	5  <b>Total = 12</b>
16	(a) Longitude point $P = (180^\circ - 73^\circ)W$ $= 107^\circ W$ $\therefore P = (34^\circ S, 107^\circ W)$	K1  N1N1	3
	(b) $\theta = \frac{5940}{60}$ $x = 99 - 34$ $= 65$	K1 K1 N1	3
	(c) $\frac{4228}{60 \times \cos 34^\circ}$  85  $y = 85 - 73$ $= 12$	K1   K1 N1	3
	(d) $\frac{4228 + [(34 + 42) \times 60]}{480}$  18.31	K2  N1	3  <b>12</b>

12 (b)



15 (c)

