

Matematik
Kertas 1/2
Tahun 2024



KEMENTERIAN PENDIDIKAN MALAYSIA
Jabatan Pendidikan Negeri Terengganu

SKEMA PEMARKAHAN
MODUL PERKEMBANGAN PEMBELAJARAN 3
(MPP 3)
TINGKATAN 5 / 2024

MATEMATIK 1449

Kertas 1 & 2

PERATURAN PEMARKAHAN

$$\text{Markah} = \frac{\text{Kertas 1} + \text{Kertas 2}}{140}$$

Peraturan Pemarkahan ini mengandungi **15** halaman bercetak

SKEMA PEMARKAHAN**MATEMATIK KERTAS 1**

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

Analisis Jawapan :

JAWAPAN	SOALAN				JUMLAH
	1-10	11-20	21-30	31-40	
A	4	2	0	3	9
B	0	3	3	4	10
C	5	3	2	1	11
D	1	2	5	2	10
					40

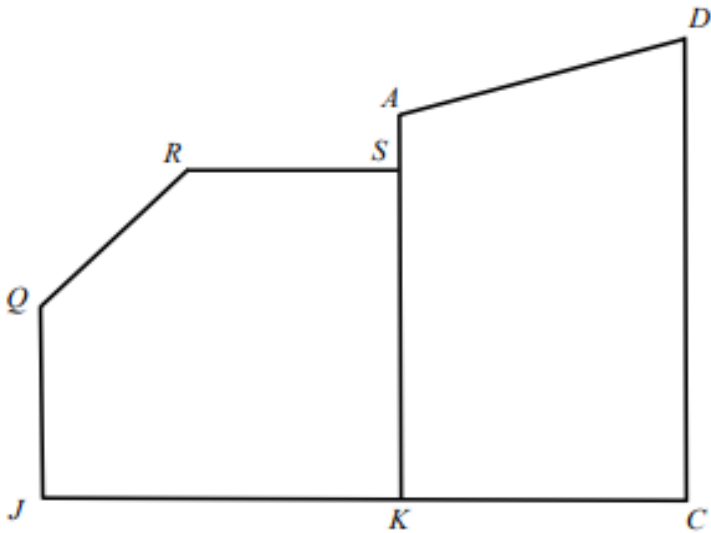
SKEMA PEMARKAHAN**MATEMATIK KERTAS 2****BAHAGIAN A**

Panduan :

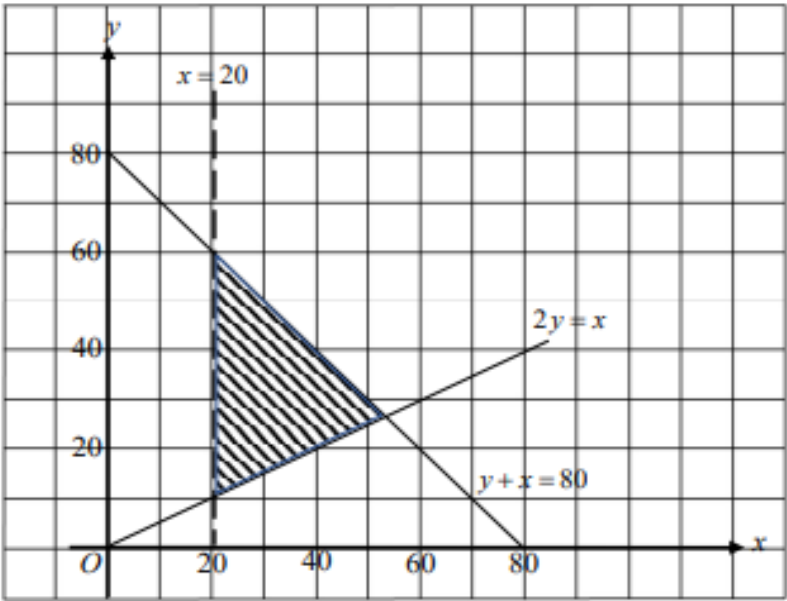
U – Pengetahuan

W – Jalan Kerja

V – Nilai

Soalan	Peraturan Permarkahan	Markah	
1	 <p>Bentuk betul pentagon $JKSRQ$ dan trapezium $CDAK$ <i>Corret shape with pentagon $JKSRQ$ and trapezium $CDAK$</i></p> <p>Semua garis padu <i>All lines are solid</i></p> <p>$CJ > CD > AK > JK = KS > CK > JQ = RS > AS$</p> <p>Ukuran betul kepada $\pm 0.2\text{ cm}$ dan semua sudut pada bucu $90^\circ \pm 1^\circ$ <i>Correct size up to $\pm 0.2\text{ cm}$ and all angles $90^\circ \pm 1^\circ$</i></p>	W1	
		W1	
		V2	4
2	<p>(a) $-\frac{(-2)}{2(2)}$ atau setara / <i>or equivalent</i> $x = \frac{1}{2}$ atau setara / <i>or equivalent</i></p> <p>(b) $2((0.5)^2 - 0.5 - 2)$ atau setara / <i>or equivalent</i> $(0.5, -4.5)$ atau setara / <i>or equivalent</i></p>	W1	
		V1	
		W1	
		V1	4

Soalan	Peraturan Permarkahan	Markah	
<p>3 (a)</p> <p>(b)</p>	$0 = -2(5) + c \text{ atau } c = 10$ $y = -2x + 10$ $\frac{0 - (-4)}{5 - 3}$ 2	W1	
		V1	
		W1	
		V1	
			<hr/> 4
<p>4 (a)</p> <p>(b)</p> <p>Nota :</p> <p>11.9-11.0</p> <p>0.9</p>	<p>Kuiz Matematik <i>Mathematics Quiz</i></p> $\frac{27 + 40 + 66 + 48 + 39}{20} \text{ atau } \frac{220}{20}$ $\frac{9 + 20 + 44 + 72 + 65 + 28}{20} \text{ atau } \frac{238}{20}$ <p>atau / or</p> $\frac{27 + 40 + 66 + 48 + 39}{20} \text{ atau } \frac{220}{20}$ $\frac{9 + 20 + 44 + 72 + 65 + 28}{20} \text{ atau } \frac{238}{20}$ <p>beri 1M</p>	U1	
		W1	
		W1	
		V1	
			<hr/> 4
<p>5 (a)</p> <p>(b)</p>	<p>Jika $3^{x+1} = 27$ maka $x = 2$ If $3^{x+1} = 27$ then $x = 2$</p> <p>Antejadian : $(m+7)(m-7) \neq 0$ Antecedent : $(m+7)(m-7) \neq 0$</p> <p>Akibat : $m^2 \neq 49$ Consequent : $m^2 \neq 49$</p>	U1	
		U1	
		U1	<hr/> 3

Soalan	Peraturan Permarkahan	Markah	
6 (a) 25 (b) $84 = \frac{63}{\left(\frac{t-70}{60}\right)}$ 115 minit @ 1 jam 55 minit Ya kerana Arman dijangka sampai pada jam 5.45 petang atau setara <i>Yes because Arman is expected to arrive at 5.45 pm or equivalent</i>		U1	
		W1	
		W1	
		V1	
			<u>4</u>
7 (a) $\frac{30}{100} \times 151.20$ atau setara RM151.20 - $(151.20 \times \frac{30}{100})$ = RM105.84 (b) $200 + (1796 - 1600) \times 0.40$ atau setara = RM278.40		W1	
		W1	
		V1	
		W1	
		V1	
			<u>5</u>
8 (a) $x \leq 2y$ atau setara (b)		U1	
		U1	Garis $x = 20$
		U1	Garis $2y = x$
		W1	
		W1	Lorek
			<u>4</u>

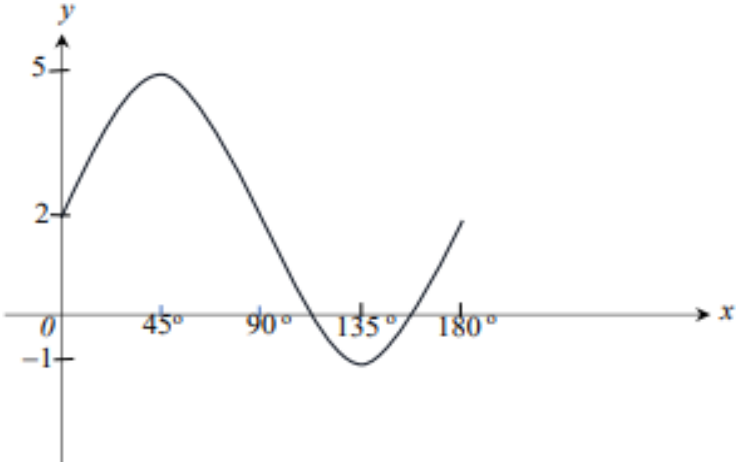
Soalan	Peraturan Permarkahan	Markah							
9	$x + y = 360 \quad \text{atau / or} \quad 30x + 50y = 14000$ $\begin{pmatrix} 1 & 1 \\ 30 & 50 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 360 \\ 14000 \end{pmatrix}$ $\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{(1 \times 50) - (1 \times 30)} \begin{pmatrix} 50 & -1 \\ -30 & 1 \end{pmatrix} \begin{pmatrix} 360 \\ 14000 \end{pmatrix}$ $x = 200$ $y = 160$	U1							
		U1							
		W1							
		V1							
		V1	<u>5</u>						
10 (a)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td data-bbox="338 822 571 904">Boleh diukur <i>Measurable</i></td> <td data-bbox="571 822 1203 904">RM3 600</td> </tr> <tr> <td data-bbox="338 904 571 987">Boleh dicapai <i>Attainable</i></td> <td data-bbox="571 904 1203 987">RM600</td> </tr> <tr> <td data-bbox="338 987 571 1099">Bersifat realistik <i>Realistic</i></td> <td data-bbox="571 987 1203 1099">10.34% daripada pendapatan bulanannya 10.34% of his monthly income</td> </tr> </table>	Boleh diukur <i>Measurable</i>	RM3 600	Boleh dicapai <i>Attainable</i>	RM600	Bersifat realistik <i>Realistic</i>	10.34% daripada pendapatan bulanannya 10.34% of his monthly income	U1	
Boleh diukur <i>Measurable</i>	RM3 600								
Boleh dicapai <i>Attainable</i>	RM600								
Bersifat realistik <i>Realistic</i>	10.34% daripada pendapatan bulanannya 10.34% of his monthly income								
		U1							
		U1	<u>3</u>						

BAHAGIAN B

Soalan	Peraturan Pemarkahan	Markah	
11 (a)	$52720 - 19900 - 250$ 32570 Layak / Ya Pendapatan bercukai kurang daripada RM35 000 <i>Qualified / Yes</i> <i>Taxable income is less than RM35 000</i>	W1 V1	
	(b) $(65234 + 52720) - 9000 - 2500 - 4000 - 7000 - 3000 - 250$ 92204 $4600 + \left(22204 \times \frac{21}{100} \right) - 450 - 360$ Nota : $22204 \times \frac{21}{100}$ beri W1 RM8 452.84	W1 W1 W2	
		V1	<hr/> 9

Soalan		Peraturan Pemarkahan						Markah																																															
12	(a)	<table border="1"> <thead> <tr> <th rowspan="2">Markah Mark (%)</th> <th rowspan="2">Titik Tengah Midpoint, x</th> <th rowspan="2">x^2</th> <th colspan="2">Sarah</th> <th colspan="2">Haziq</th> </tr> <tr> <th>f</th> <th>fx^2</th> <th>f</th> <th>fx^2</th> </tr> </thead> <tbody> <tr> <td>51 - 60</td> <td>55.5</td> <td>3080.25</td> <td>1</td> <td>3080.25</td> <td>2</td> <td>6160.5</td> </tr> <tr> <td>61 - 70</td> <td>65.5</td> <td>4290.25</td> <td>2</td> <td>8580.5</td> <td>1</td> <td>4290.25</td> </tr> <tr> <td>71 - 80</td> <td>75.5</td> <td>5700.25</td> <td>2</td> <td>11400.5</td> <td>1</td> <td>5700.25</td> </tr> <tr> <td>81 - 90</td> <td>85.5</td> <td>7310.25</td> <td>1</td> <td>7310.25</td> <td>2</td> <td>14620.5</td> </tr> <tr> <td colspan="3">Jumlah / Amount</td> <td>6</td> <td>30371.5</td> <td>6</td> <td>30771.5</td> </tr> </tbody> </table>	Markah Mark (%)	Titik Tengah Midpoint, x	x^2	Sarah		Haziq		f	fx^2	f	fx^2	51 - 60	55.5	3080.25	1	3080.25	2	6160.5	61 - 70	65.5	4290.25	2	8580.5	1	4290.25	71 - 80	75.5	5700.25	2	11400.5	1	5700.25	81 - 90	85.5	7310.25	1	7310.25	2	14620.5	Jumlah / Amount			6	30371.5	6	30771.5							
		Markah Mark (%)				Titik Tengah Midpoint, x	x^2	Sarah		Haziq																																													
			f	fx^2	f			fx^2																																															
		51 - 60	55.5	3080.25	1	3080.25	2	6160.5																																															
		61 - 70	65.5	4290.25	2	8580.5	1	4290.25																																															
	71 - 80	75.5	5700.25	2	11400.5	1	5700.25																																																
	81 - 90	85.5	7310.25	1	7310.25	2	14620.5																																																
	Jumlah / Amount			6	30371.5	6	30771.5																																																
			Semua nilai titik tengah atau nilai x^2 BETUL. <i>All midpoints or x^2 values are CORRECT</i>						W1																																														
			Semua nilai fx^2 Sarah BETUL atau Semua nilai fx^2 Haziq BETUL. <i>All fx^2 values of Sarah are TRUE or All fx^2 values of Haziq are TRUE</i>						W1																																														
	(b)	$\sqrt{\frac{30371.5}{6} - 70.5^2} \text{ @ Setara / Equivalent}$						W2																																															
		Nota / Note : $\frac{30371.5}{6}$ dilihat / seen – beri / give 1M																																																					
		$\sqrt{\frac{30771.5}{6} - 70.5^2} \text{ @ Setara / Equivalent}$						W2																																															
		Nota / Note : $\frac{30771.5}{6}$ dilihat / seen – beri / give – beri 1M																																																					
		9.574 dan 12.583						V1																																															
		Sarah layak dipilih untuk menyertai pertandingan kuiz Fizik kerana sisihan piawainya lebih kecil daripada Haziq dan pencapaiannya lebih konsisten. <i>Sarah deserves to be selected to participate in the Physic quiz competition because her standard deviation is smaller than Haziq and her achievements are more consistent.</i>						W1																																															
		Haziq akan dipilih untuk menyertai Kem Fizik SPM. <i>Haziq will be selected to participate in the SPM Camp Physics.</i>						W1																																															
								9																																															

Soalan		Peraturan Pemarkahan	Markah	
13	(a)	$1\ 400 @ 2\ 850$ $2\ 850 - 1\ 400$ 1450	W1	
	(b)	$\frac{*1400}{70}$ $\frac{1400}{70} \times 60$ 1200	W1	
	(c)	<p>5 tepi dilukis dan dilabel dengan betul <i>5 edges are drawn and labelled correctly</i></p> <p>Semua pemberat betul <i>All weights are correct</i></p> <p>Nota : pokok dilukis tanpa anak panah dan tidak dilabel terima 1M <i>Note : trees are drawn without arrows and are not labeled accept 1M</i></p>	W2	
			W1	<hr style="width: 10%; margin: auto;"/> 9

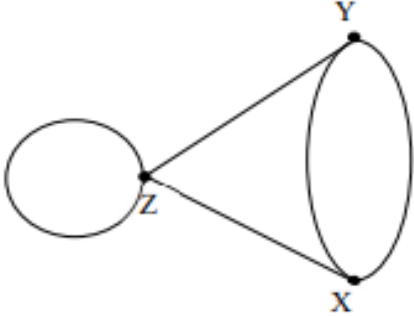
Soalan	Peraturan Pemarkahan	Markah												
14	<p>(a) Amplitude : 3 <i>Amplitude: 3</i> Tempoh : 120° <i>Duration : 120°</i></p> <p>(b) a : 2 b : 2 nilai maksimum : 5 <i>maximum value : 5</i></p> <p>(c)</p> <table border="1" data-bbox="376 763 1038 898"> <thead> <tr> <th>x</th> <th>0°</th> <th>45°</th> <th>90°</th> <th>135°</th> <th>180°</th> </tr> </thead> <tbody> <tr> <td>y</td> <td>2</td> <td>5</td> <td>2</td> <td>-1</td> <td>2</td> </tr> </tbody> </table>  <p>-1, 2 dan 5 dilabel pada paksi y Sudut 45°, 90°, 135° dan 180° dilabel pada paksi x Bentuk graf betul</p> <p><i>-1, 2 and 5 are labelled on the y axis Angles 45°, 90°, 135° and 180° are labelled on the x-axis The shape of the graph is correct</i></p>	x	0°	45°	90°	135°	180°	y	2	5	2	-1	2	U1 U1 U1 U1 U1 W1 W1 W1 <hr/> 9
x	0°	45°	90°	135°	180°									
y	2	5	2	-1	2									

Soalan	Peraturan Pemarkahan	Markah
15	<p>(a) Pembesaran, faktor skala $\frac{2}{3}$, pusat $T/(3, -1)$ <i>Enlargement, scale factor $\frac{2}{3}$, point $T/(3, -1)$</i> Nota/Note: 1. Pembesaran, faktor skala $\frac{2}{3}$ <u>atau</u> Pembesaran berpusat di $T/(3, -1)$, beri U2 <i>Enlargement, scale factor $\frac{2}{3}$ <u>or</u></i> <i>Enlargement, point $T/(3, -1)$, give U2</i> 2. Pembesaran, beri U1 <i>Enlargement, give U1</i> Pantulan pada garis $x = 1$ <i>Reflection at line $x = 1$</i> Nota / Note : Pantulan, beri U1 <i>Reflection, give U1</i> <u>ATAU / OR</u> Pantulan pada garis $x = 1$ (U2) <i>Reflection at line $x = 1$</i> Nota / Note : Pantulan, beri U1 <i>Reflection, give U1</i> Pembesaran, faktor skala $\frac{2}{3}$ berpusat di $E/(-1, -1)$ (U3) <i>Enlargement, scale factor $\frac{2}{3}$, point $E/(-1, -1)$</i> Nota / Note : 1. Pembesaran, faktor skala $\frac{2}{3}$ <u>atau</u> Pembesaran berpusat di $E/(-1, -1)$, beri U2 <i>Enlargement, scale factor $\frac{2}{3}$ <u>or</u></i> <i>Enlargement, point $E/(-1, -1)$, give U2</i> 2. Pembesaran, beri U1 <i>Enlargement, give U1</i></p>	<p>U3</p> <p>U2</p>

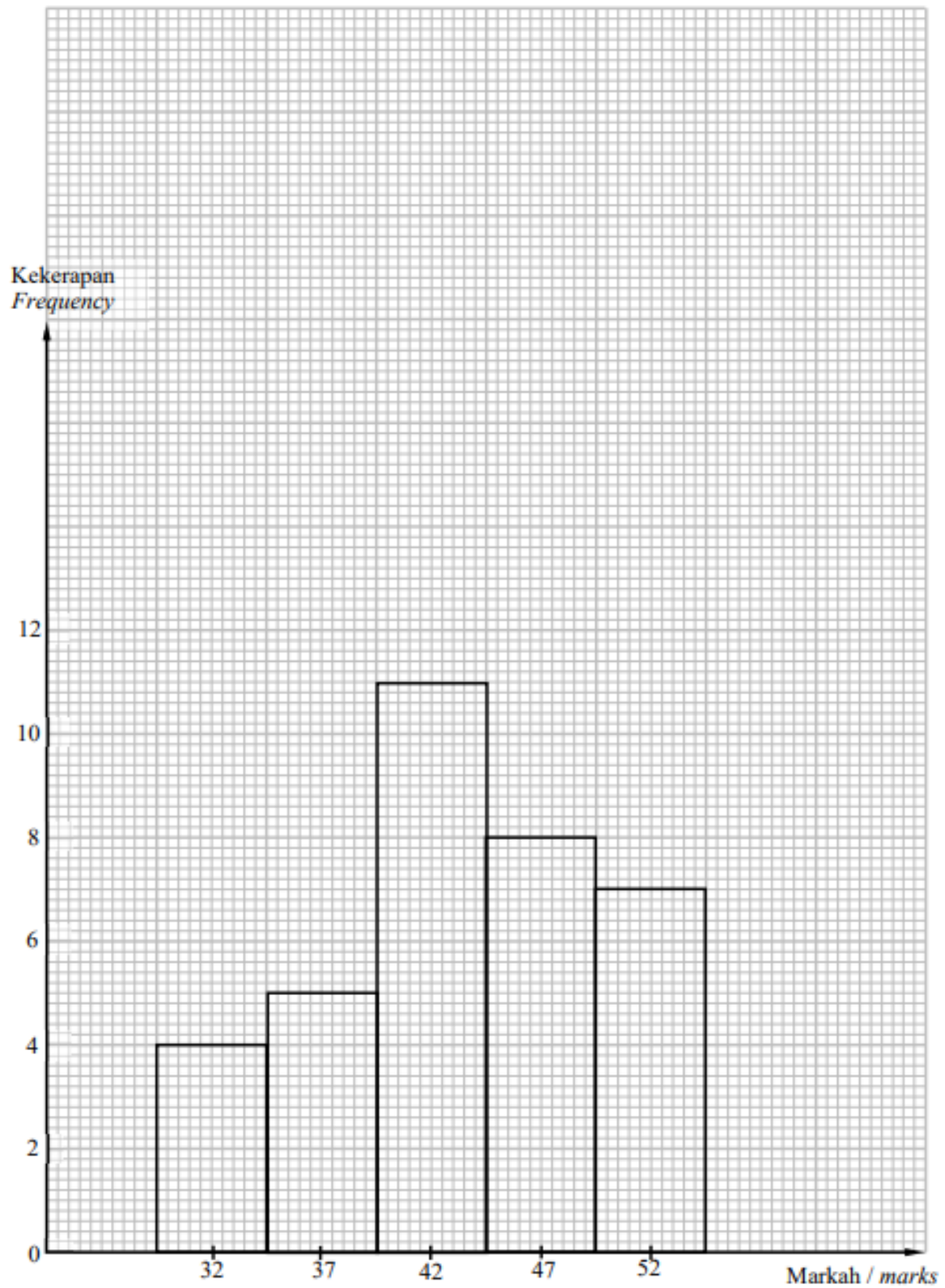
	<p>(b) $20 = \left(\frac{2^*}{3}\right)^2 \times \text{luas objek/area of the object}$</p> <p>45</p> <p>(c) Bukan kerana terdapat bentuk yang tidak berulang iaitu bentuk bintang di tengah. <i>No because there is a non-recurring shape that is the shape of a star in the middle.</i></p> <p>Nota / Note :</p> <p>Tidak, beri U1 <i>No, give U1</i></p>	<p>W1</p> <p>V1</p> <p>U2</p>	<p><u>9</u></p>
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BAHAGIAN C

Soalan		Peraturan Pemarkahan	Markah	
16	(a)			
	(i)	$25 = \frac{k(5)}{4}$ $T = \frac{20h}{n}$	W1 V1	4
(ii)	$\frac{20(10)}{2}$ 100	W1 V1		
	(b)			
	(i)	$400(6) + \frac{70}{100}(400)(4)$ 3520	W1 V1	5
	(ii)	$*3520 + (300 + 200 + 100 + 140)(10)$ $*10920 \times 33$ 360360	W1 W1 V1	
	(c)	$x + 2y = 716 \text{ atau / or } y - x = 271$ $2y - 2x = 542 \text{ atau setara / or equivalent}$ $3x = 174 \text{ atau / or } 3y = 987$ 58	W1 W1 W1 V1	4
	(d)	$180 + \frac{90}{100}(200)$ 360	W1 V1	2
				15

Soalan	Peraturan Pemarkahan	Markah	
<p>17 (a)</p>	<div style="text-align: center;">  </div> <p>Berbilang tepi XY / <i>Multiple edges XY</i> Gelung Z / <i>Loop Z</i> Semua tepi dilukis betul / <i>All edges drawn correctly</i></p> <p>(b) (i) 11</p> <p>(ii) <u>Rujuk graf di halaman 15 / Refer to the graph on the page 15</u></p> <p>Kedua-dua paksi dilukis dalam arah yang betul dengan skala seragam untuk $29.5 \leq x \leq 54.5$ dan $0 \leq y \leq 11$ * <i>Both axes are drawn in correct direction with a uniform scale for $29.5 \leq x \leq 54.5$ and $0 \leq y \leq 11$ *</i></p> <p>Semua bar dilukis dengan betul <i>All bars are drawn correctly</i></p> <p>Histogram betul <i>Correct histogram</i></p> <p>(c) (i) $x + 2y = 7$ atau / or $15x + 20y = 85$ $10x + 20y = 70$ atau / or $15x + 30y = 105$ atau setara / or <i>equivalent</i> $5x = 15$ atau / or $-10y = -20$ atau setara / or <i>equivalent</i></p> <p>$x = 3$ $y = 2$</p> <p>(ii) $12(3) + 14(2)$ atau / or $10(3) + 18(2)$ atau / or 64 atau / or 66</p> <p>Ya, pernyataan murid itu benar kerana jumlah markah kumpulan B lebih tinggi daripada Kumpulan A <i>Yes, the student's statement is true because of the total marks Group B is higher than Group A</i></p>	<p>U1 U1 U1 U1 U1 W2 V1 U1 U1 W1 V1 V1 W1 V1</p>	<p>15</p>

Graf untuk soalan 17(b)(ii)
Graph for Question 17(b)(ii)



SKEMA PEMARKAHAN TAMAT