

**1449/1 & 2
Matematik
Kertas 1/2
2020**



JABATAN PELAJARAN TERENGGANU

MPP 2 / TAHUN 2020

SIJIL PELAJARAN MALAYSIA

MATEMATIK 1449/1/2

Kertas 1 & 2

PERATURAN PEMARKAHAN

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

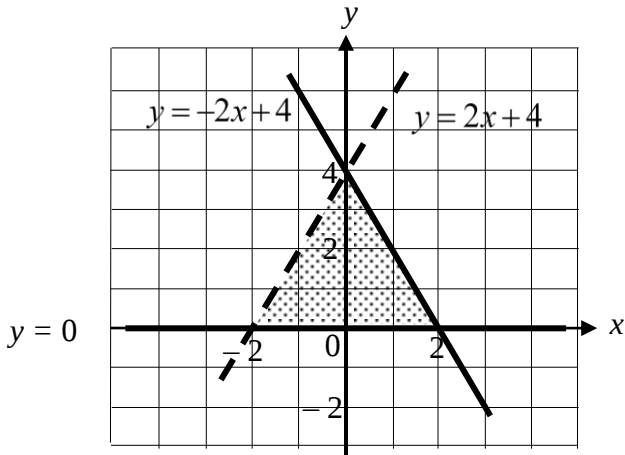
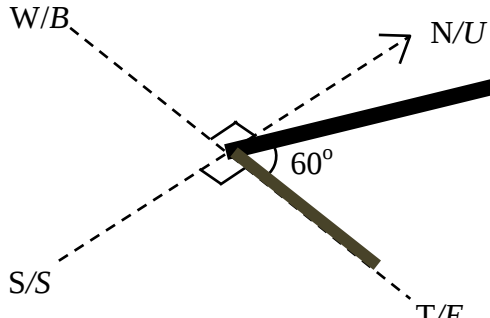
Peraturan Pemarkahan ini mengandungi 15 halaman bercetak

SKEMA PERMARKAHAN**MPP 2 / TAHUN 2020
SIJIL PELAJARAN MALAYSIA****MATEMATIK KERTAS 1**

1	D	11	B	21	B	31	A
2	A	12	D	22	D	32	D
3	C	13	A	23	A	33	B
4	B	14	C	24	C	34	D
5	B	15	B	25	D	35	A
6	C	16	C	26	B	36	C
7	C	17	D	27	C	37	A
8	B	18	C	28	A	38	C
9	A	19	B	29	C	39	B
10	D	20	C	30	D	40	B

MATEMATIK KERTAS 2

Bahagian A

Soalan	Peraturan Permarkahan	Markah	
1	 Straight line $y = 0$ correctly drawn Region correctly shaded	K1	
		P2	<u>3</u>
2	 $\cos 60^\circ = \frac{\text{length}}{9}$ Length of shadow = 4.5 m	P1	
		K1	
		N1	<u>3</u>
3	$2x(x + 5) = 600$ $2x^2 + 10x - 600 = 0 \quad @ \quad x^2 + 5x - 300 = 0$ $(x - 15)(x + 20) = 0$ $x = 15, -20$ Time = 30 s	K1	
		K1	
		K1	
		N1	<u>4</u>

Soalan	Peraturan Permarkahan	Markah	
4	$\frac{22}{7} \times (3.27)^2 \times 19.62$ $26.16 \times 6.54 \times 6.54$ $(26.16 \times 6.54 \times 6.54) - \frac{22}{7} \times (3.27)^2 \times 19.62$ 459.56	K1 K1 K1 N1	 4
5	$x + y = 60$ $x + 2y = 75$ $x = 60 - y$ or $x = 75 - 2y$ or <i>equivalent</i> $x = 45$ $y = 15$ 60	P1 P1 K1 K1 K1 N1	 6
6(a)	Statement	P1	
(b)	If $A \subset B$, then $A \cap B = A$.	P2	
(c)	$(9 - 2) \times 180$	K1	
	1260	N1	5
7(a)	$\frac{8-0}{0-4}$ or -2 $15 = -2(3) + c$ $y = -2x + 21$	P1 K1 N1	
(b)	$0 = -2x + 21$ $x - \text{intercept} = \frac{21}{2}$ or 10.5	K1 N1	 5

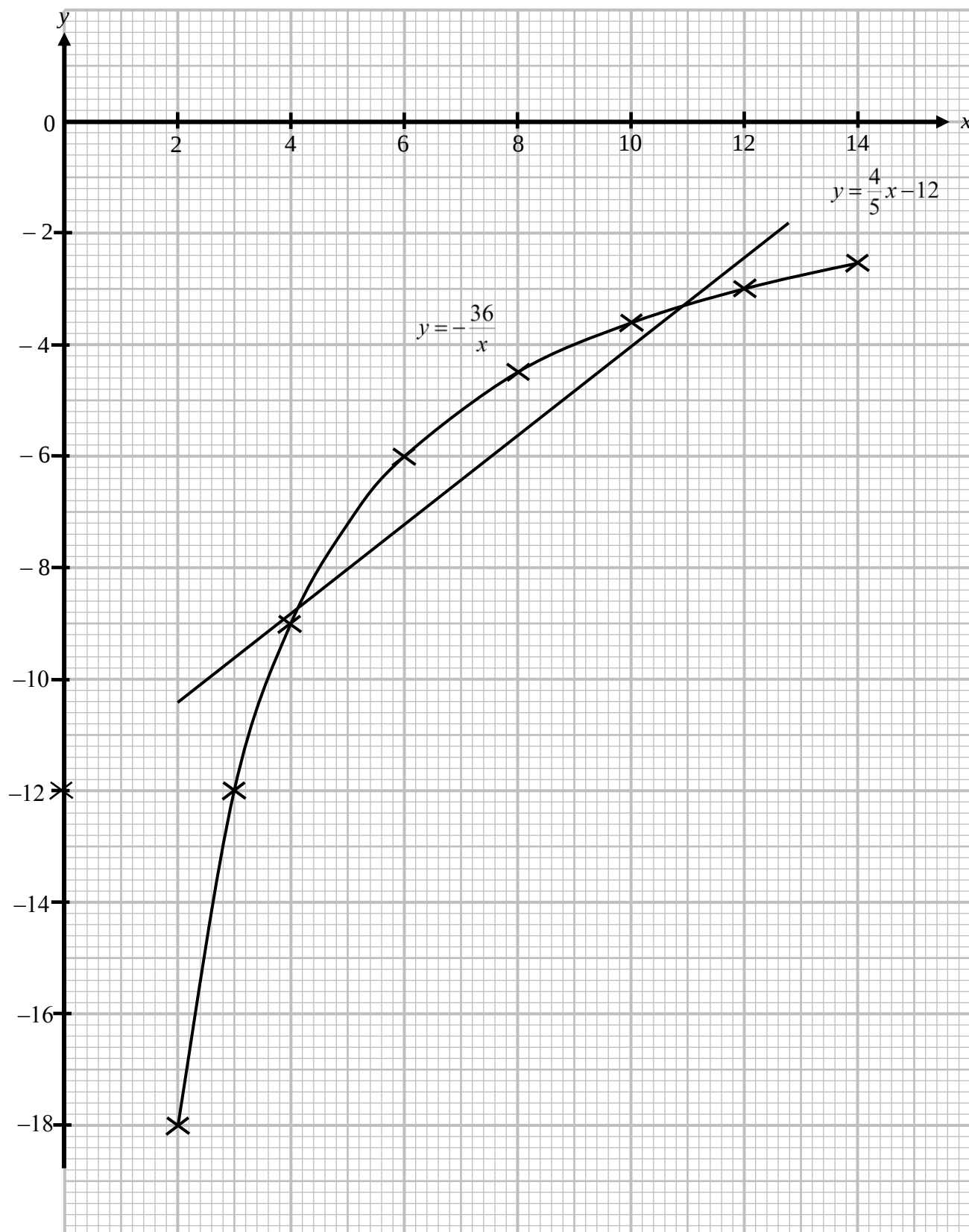
Soalan	Peraturan Permarkahan	Markah	
8	$\begin{pmatrix} 3 & -2 \\ 5 & -4 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 7 \\ 9 \end{pmatrix}$	P1	
	$\begin{pmatrix} x \\ y \end{pmatrix} = \frac{1}{(3)(-4) - (-2)(5)} \begin{pmatrix} -4 & 2 \\ -5 & 3 \end{pmatrix} \begin{pmatrix} 7 \\ 9 \end{pmatrix} \text{ or equivalent}$	K1	
	$x = 5,$ $y = 4$	N1 N1	
	<u>Notes:</u> 1. Do not accept $\begin{matrix} * \\ \left(\begin{matrix} Inverse \\ matrix \end{matrix} \right) \end{matrix} = \begin{pmatrix} 3 & -2 \\ 5 & -4 \end{pmatrix} \text{ or } \begin{matrix} * \\ \left(\begin{matrix} Inverse \\ matrix \end{matrix} \right) \end{matrix} = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$ 2. $\begin{pmatrix} x \\ y \end{pmatrix} = \begin{matrix} * \\ \left(\begin{matrix} Inverse \\ matrix \end{matrix} \right) \end{matrix} \begin{pmatrix} 7 \\ 9 \end{pmatrix}$, award K1 3. $\begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 5 \\ 4 \end{pmatrix}$ as final answer, award N1 4. Do not accept any solution solved not using matrix method.		<u>4</u>
9	Speed (ms^{-1}) Laju (ms^{-1}) Diagram 11/ Rajah 11	P1	
	(a)		
	(b) $(10 \times 15) + \frac{1}{2}(10 + 20)20$ 450	K1 N1	
	(c) $\frac{1}{2} \times 10 \times 20 + 450$ 550 $\div$ 45 12.22	K1 K1 N1	
			<u>6</u>

Soalan	Peraturan Permarkahan	Markah	
10(a)	$\frac{90}{360} \times 2 \times \frac{22}{7} \times 21$ <u>or</u> $\frac{140}{360} \times 2 \times \frac{22}{7} \times 10.5$	K1	
	$\frac{90}{360} \times 2 \times \frac{22}{7} \times 21 + 21 + \frac{140}{360} \times 2 \times \frac{22}{7} \times 10.5 + 10.5 + 10.5$	K1	
	100.67 <u>or</u> $100\frac{2}{3}$ <u>or</u> $\frac{302}{3}$	N1	
	(b) $\frac{90}{360} \times \frac{22}{7} \times 21^2$ <u>or</u> $\frac{140}{360} \times \frac{22}{7} \times 10.5^2$ <u>or</u> $\frac{180}{360} \times \frac{22}{7} \times 10.5^2$	K1	
	$\frac{90}{360} \times \frac{22}{7} \times 21^2 - \frac{180}{360} \times \frac{22}{7} \times 10.5^2 + \frac{140}{360} \times \frac{22}{7} \times 10.5^2$	K1	
	308	N1	<u>6</u>
11(a)	(i) (J, C), (J, D), (J, S), (C, J), (C, D), (C, S) (D, J), (D, C), (D, S), (S, J), (S, C), (S, D)	P1	
	(ii) (J, S), (C, S), (D, S), (S, J), (S, C), (S, D)	K1	
	$\frac{6}{12}$ <u>or</u> $\frac{1}{2}$	N1	
	(b) (i) (A, N), (A, S), (J, N), (J, S), (C, N), (C, S), (D, N), (D, S)	P1	
	(ii) (A, N)	K1	
	$\frac{1}{8}$	N1	<u>6</u>

Bahagian B

Soalan	Peraturan Permarkahan	Markah	
12(a)	$y = -6$ $y = -3.6$	K1 K1	2
(b)	<u>Graph :</u> Axis drawn in correct directions with uniform scales for $0 \leq x \leq 14$ All 8 points and *2 points correctly plotted or curve passes through all the points for $0 \leq x \leq 14$ <u>Note:</u> 1. 7 or 6 points correctly plotted, award K1 2. Ignore curve out of range. Smooth and continuous curve without any straight line passing through all 8 correct points using the given scales for $0 \leq x \leq 14$	P1 K2	
(c)	(i) $5.0 \leq x \leq 5.4$ (ii) $-5.3 \leq y \leq -4.8$	P1 P1	
(d)	Straight line $y = \frac{4}{5}x - 12$ correctly drawn. Checked any two points plotted or straight line passes through any two of the (0, -12), (5, -8), (10, -4) ... accurate to $\pm \frac{1}{2}$ square grid vertically) <u>Note:</u> Identify equation $y = \frac{4}{5}x - 12$ award K1 $4.0 \leq x \leq 4.4$ $10.6 \leq x \leq 11.0$	K2	2
	$4.0 \leq x \leq 4.4$ $10.6 \leq x \leq 11.0$ <u>NOTE:</u> 1. Allow P mark or N mark if values of x and y are shown on graph 2. Values of x and of y obtained by calculations, award P0 or N0 . 3. Values of x and of y obtained from wrong graph, award P0	N1 N1	4
			12

Graph for Question 12
Graf untuk Soalan 12

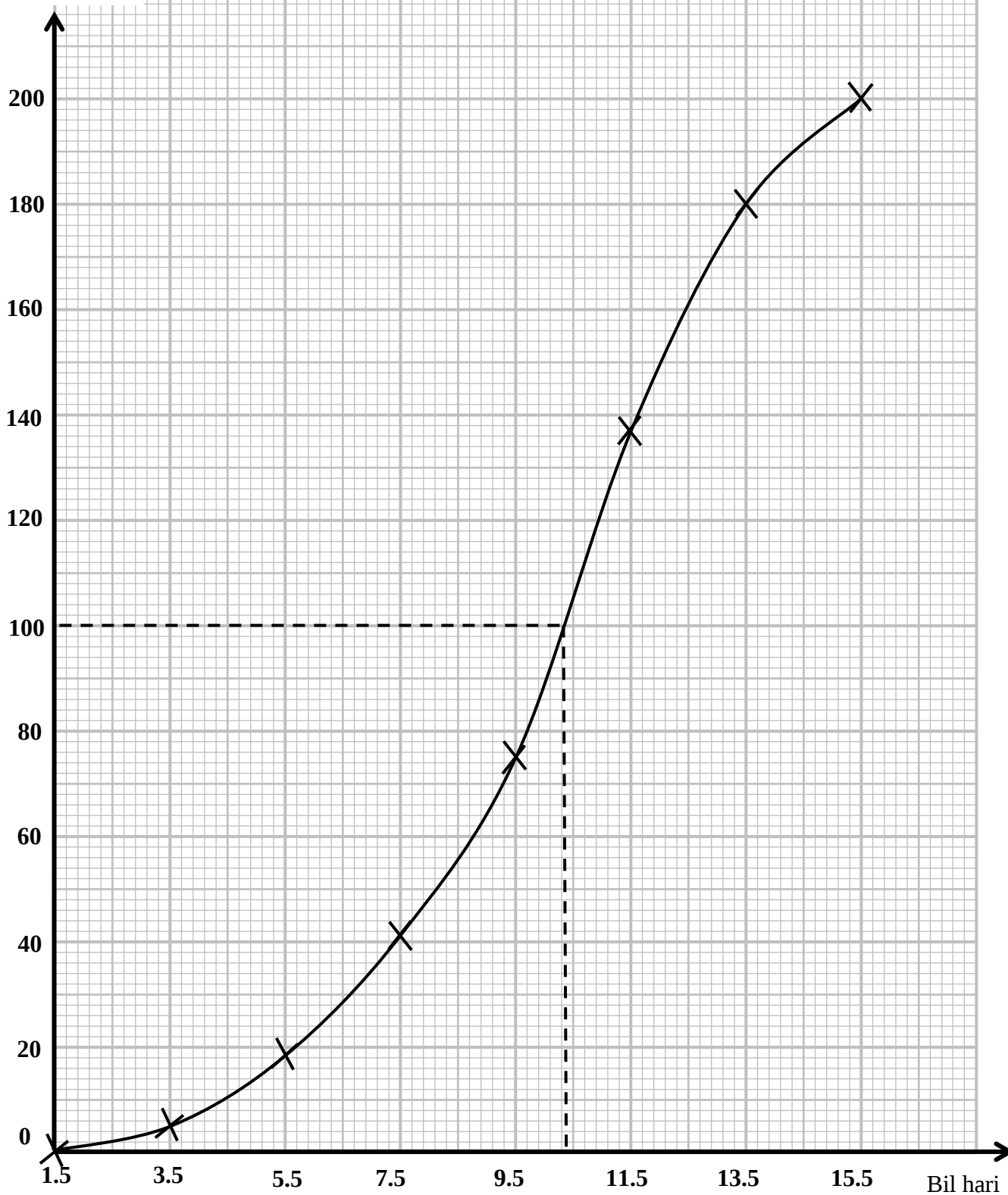


Soalan	Peraturan Permarkahan	Markah	
13(a)	(i) (0, 9) <u>Note:</u> (0, 9) is marked on the diagram <u>or</u> (2, 6) is seen <u>or</u> (2, 6) is marked on the marked on the diagram, award P1	P2	
	(ii) (6, 6) <u>Note:</u> (6, 6) is marked on the diagram <u>or</u> (8, 3) is seen <u>or</u> (8, 3) is marked on the marked on the diagram, award P1	P2	4
	(b) (i) V = Reflection at straight line $y = 5$ // <i>Pantulan pada garis lurus $y = 5$</i> <u>Note:</u> Reflection // <i>Pantulan</i> award P1	P2	5
	W = Enlargement, scale factor 2, centre (6, 7) // <i>Pembesaran, faktor skala 2, pada pusat (6, 7)</i> <u>Note:</u> Enlargement, scale factor 2 // <i>Pembesaran, faktor skala 2</i> , award P2 Enlargement, centre (6, 7) // <i>Pembesaran, pada pusat (6, 7)</i> , award P2 Enlargement // <i>Pembesaran</i> , award P1	P3	
	(ii) $144 + LO = (2^*)^2 \times LO$ <u>Note:</u> $LI = (2^*)^2 \times LO$ seen, award K1 48	K2 N1	 3
			12

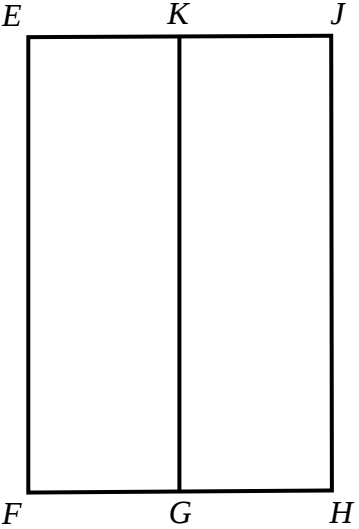
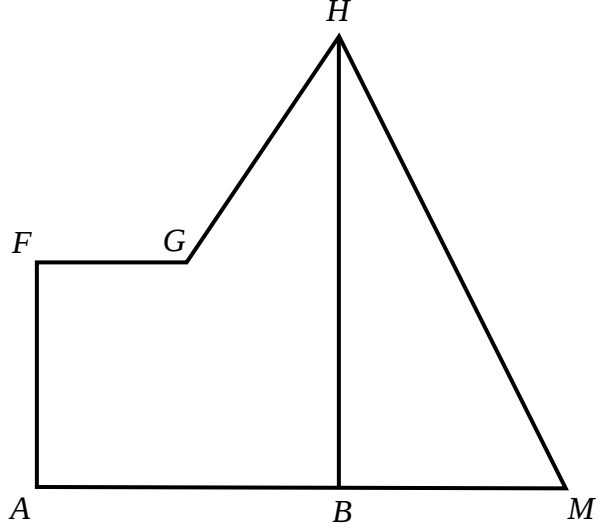
14 (a)	I	II	III	IV		
	Bil hari (hari)	Sempadan Atas	Kekerapan	Kekerapan Longgokan		
	0 – 1	1.5	0	0		
	2 – 3	3.5	5	5		
	4 – 5	5.5	13	18		
	6 – 7	7.5	23	41		
	8 – 9	9.5	34	75		
	10 – 11	11.5	62	137		
	12 – 13	13.5	43	180		
	14 – 15	15.5	20	200		
	Lajur II (semua betul)				P1	
	Lajur III (semua betul)				P2	
(b)	(i) 10 – 11				P1	
	$(5 \times 2.5) + (13 \times 4.5) + (23 \times 6.5) + (34 \times 8.5)$					
	$+ (62 \times 10.5) + (43 \times 12.5) + (20 \times 14.5)$					
	(ii) Min = $\frac{5 + 13 + 23 + 34 + 62 + 43 + 20}{5 + 13 + 23 + 34 + 62 + 43 + 20}$				K2	
	<u>atau</u> setara					
	10				N1	
	<u>Nota</u>					
	1. Benarkan tiga kesilapan titik tengah untuk pengiraan min untuk K1					
	2. Jawapan dalam pecahan atau perpuluhan, N0					
	Ogif:					
(c)	Paksi dilukis dengan arah yang betul, skala betul dan seragam bagi $1.5 \leq x \leq 15.5$ dan $0 \leq y \leq 200$.				K1	
	Paksi mengufuk dilabel dengan sempadan atas.				K2	
	Plot semua 8* titik dengan betul					
	<u>Nota :</u>					
	(1) 6 atau 7 nya titik diplot betul, berikan K1					
	(2) Jika skala lain digunakan, tolak 1 markah dari markah KN yang diperoleh.					
	Lengkung licin berterusan dalam $1.5 \leq x \leq 15.5$ tanpa bahagian lurus dan melalui 8 titik yang betul.				N1	
(d)	Hari yang ke = 10 ± 1				P1	
	<u>Nota</u>					
	1. Jawapan dalam pecahan atau perpuluhan, P0					

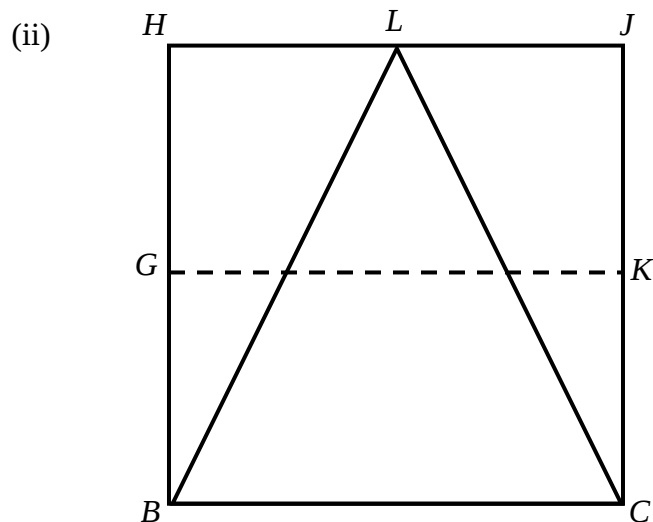
Graph for Question 14
Graf untuk Soalan 14

Kekerapan
Longgokan



Soalan	Peraturan Permarkahan	Markah	
	<u>Note:</u> (1) Accept drawing only (not sketch) (2) Accept diagrams without labels and ignore wrong labels. (3) Accept correct rotation of diagrams. (4) Lateral inversions are not accepted. (5) If more than 1 diagram are drawn, award mark to the correct ones only. (6) For extra lines (dotted/dashed or solid) except construction lines, no KN mark is awarded. (7) If other scales are used with accuracy of ± 0.2 cm one way, deduct 1 mark from the N mark obtained, for each part attempted. (8) Accept small gaps or extensions at the corners. For each part attempted: (i) If $0.1 \text{ cm} \leq \text{small gaps/extension} \leq 0.4 \text{ cm}$, deduct 1 mark from N mark obtained. (ii) If small gaps/extensions $> 0.4 \text{ cm}$, no N mark is awarded. (9) If the construction line cannot be differentiated from the actual lines: (i) <u>Dotted line</u> If outside the diagram, award the N mark. If inside the diagram, award N0. (ii) <u>Solid line</u> If outside the diagram, no KN mark is awarded. (10) For double lines, non –collinear lines, bold lines or crooked lines, deduct 1 mark from the N mark obtained, for each part attempted. (11) If drawn on graph paper, no KN mark is awarded.		

Soalan	Peraturan Permarkahan	Markah	
15(a)	 Correct shape with rectangles $EFHJ$, $EFGK$ and $GHJK$ All solid lines. $EF > FH > FG = GH = KJ = EK$ Measurements correct to ± 0.2 cm (one way) and right angles at vertices = $90^\circ \pm 1^\circ$	K1 K1 N1	3
(b)	(i)  Correct shape with pentagon $ABHGF$ and right angled triangle BMH All solid lines $AM > MH > HB > HG > AF = BM > FG$ Measurements correct to ± 0.2 cm (one way) and right angles at vertices = $90^\circ \pm 1^\circ$	K2 K1 K1 N2	4



Correct shape with rectangle $BCJH$, right angled triangles BLH and CJL and isosceles triangle BCL .

All solid lines
(Ignore GK)

$G - K$ joined by a dashed line to form rectangle $BCJH$.

$$BL = LC > BC = CJ > JL = LH = HG = GB = JK = KC$$

Measurements correct to ± 0.2 cm (one way) and right angles at vertices = $90^\circ \pm 1^\circ$

K1

K1

K1

N2

5

 12

Soalan	Peraturan Permarkahan	Markah	
16 (a)	$135^\circ T$ Note : 135° or $\theta^\circ T$ award P1	P2	2
(b)	$\theta^\circ \times 60 \times \cos 60^\circ = 4500$ Note : $\cos 60^\circ$ seen award K1 $(\frac{4500}{60 \times \cos 60^\circ}) - 45^\circ$ Longitude S = $105^\circ T$	K2 K1 N1	4
(c)	$\theta^\circ \times 60 = 5400$ or 90 $(\frac{5400}{60}) - 60^\circ$ Latitude M = $30^\circ U$	K1 K1 N1	3
(d)	$\frac{156^\circ \times 60}{720}$ Note : $(156^\circ \times 60)$ or 9360 seen award K1 13	K2 N1	3
			<u>12</u>

SKEMA PEMARKAHAN TAMAT