SULIT
1449/1 & 2
Matematik
Kertas 1 & Kertas 2
Ogos 2019
Peraturan
Pemarkahan

MAJLIS PENGETUA SEKOLAH MALAYSIA (MPSM)
CAWANGAN KELANTAN

PEPERIKSAAN PERCUBAAN SPM 2019

MATEMATIK

Kertas 1 dan Kertas 2

PERATURAN PEMARKAHAN

PERATURAN PEMARKAHAN
PEPERIKSAAN PERCUBAAN SPM
MATEMATIK KERTAS 1

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

PERATURAN PEMARKAHAN
PEPERIKSAAN PERCUBAAN SPM
MATEMATIK KERTAS 2

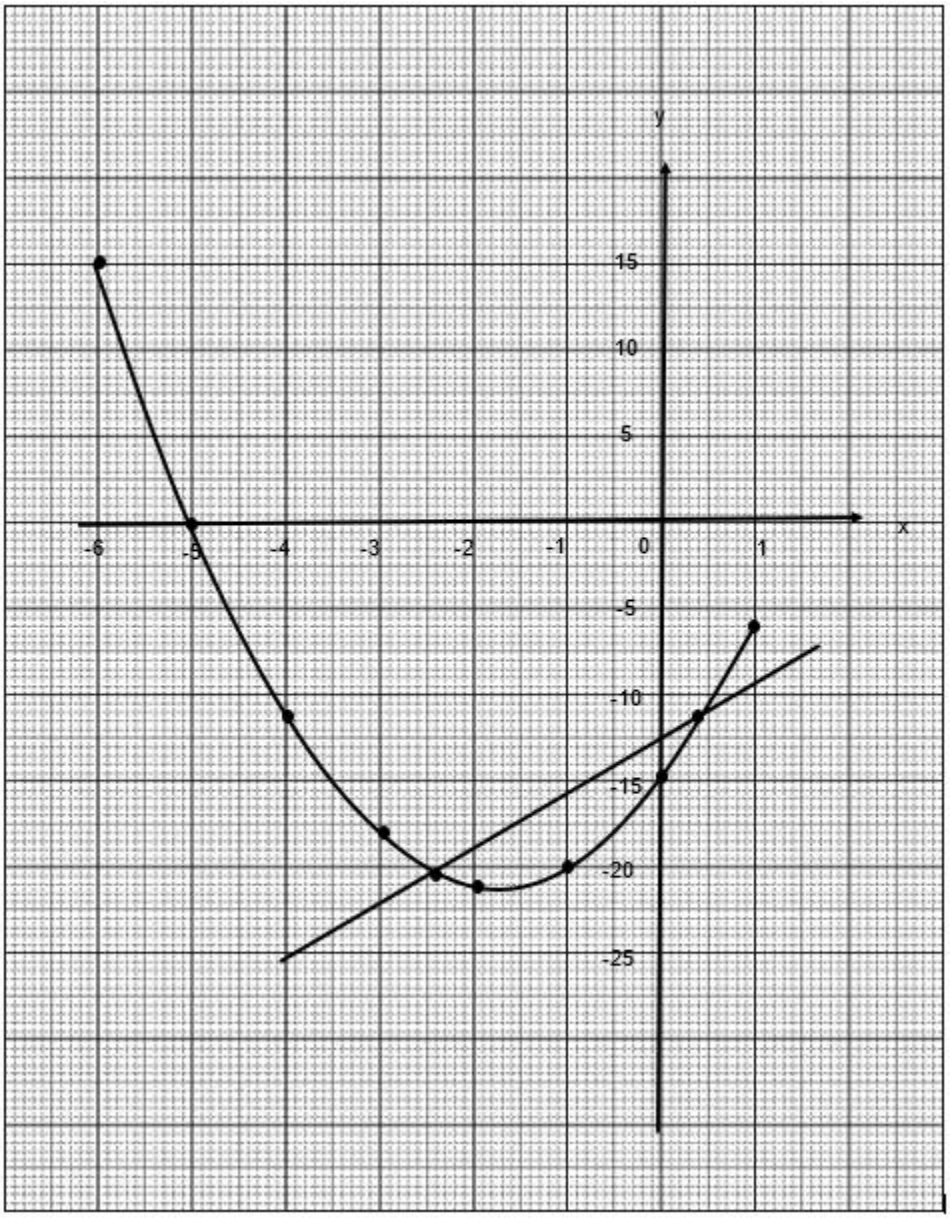
Soalan	PeraturanPermarkahan	Markah	
1	(i) $y \geq -x - 6$ (ii) $y < x + 6$ (iii) $x \leq 0$	P1 P1 P1	**3**
2	$\frac{1}{2}(2x - 1)(x + 3) = 36$ $2x^2 + 5x - 75 = 0$ $(x - 5)(2x + 15) = 0$ $x = 5, x = -\frac{15}{2}$ 12	K1 K1 K1 N1 N1	**5**
3	2x + 2y = 80 or x + y = 64 -4y = -48 y = 12/2 = 6 x = 28/2 = 14 OR 2x + 2y = 40 or x + 3y = 32 -4y = -24 y = 6 x = 14	K1 K1 N1 N1 K1	**4**
4	(a) $\angle$ UQT (b) $\tan\theta = \frac{10}{7.81}$ θ = 52.01°	P1 K1 N1	**3**

5	(a) Benar (b) Antejadian : Poligon mempunyai 6 sisi (c) Premis 1 : Jika garisan $y = 3x + 7$ dan $y = mx + 12$ adalah selari, maka $m = 3$. (d) Kesimpulan : $L = \frac{1}{2}(12)(15)$ = 90 cm^3	P1 P1 P1 K1 N1	**5**
6	$2 \times 28 \times 14 \times 5$ $30 \times \frac{1}{3} \times \frac{22}{7} \times 3.5^2 \times t$ $2 \times 28 \times 14 \times 5 = 30 \times \frac{1}{3} \times \frac{22}{7} \times 3.5^2 \times t$ t = 10.18 cm	K1 K1 K1 N1	**4**
7	(a) $0 = -\frac{1}{2}x + 2$ $D = (2,0)$ (b) $m = \frac{2-1}{2-0} = \frac{1}{2}$ $(2) = \frac{1}{2}(2) + c$ $y = \frac{1}{2}x + 1$	K1 N1 P1 K1 N1	**5**
8.	(a) S = { (A,10), (A,20), (A,50), (M,10), (M,20), (M,50), (T,10), (T,20), (T,50), (F,10), (F,20), (F,50)} (b) (i) { (A,10), (A,20), (A,50), (M,20), (T,20), (F,20)} 6/12 or 1/2 (ii) { (A,10), (A,20), (A,50), (M,20), (M,10), (M,20), (T,10), (T,20), (T,50), (F,10), (F,20), (F,50)} 11/12	P2 K1 N1 K1 N1	**6**

9	a) $\frac{1}{2} \times 10 \times 10$ *or* 20×16 *or* $\frac{180}{360} \times \frac{22}{7} \times 8^2$ $[20 \times 16] - \left[\frac{1}{2} \times 10 \times 10\right] - [\frac{180}{360} \times \frac{22}{7} \times 8^2]$ $\frac{1186}{7}$ b) $\left[\frac{180}{360} \times 2 \times \frac{22}{7} \times 8\right]$ *or* $\sqrt{10^2 + 10^2}$ $\left[\frac{180}{360} \times 2 \times \frac{22}{7} \times 8\right] + \sqrt{10^2 + 10^2}$ +10+10+16 75.28	K1 K1 N1 K1 K1 N1	**6**
10	a) 40 b) $\frac{40}{25}$ c) $\frac{1}{2} \times (40 + v) \times 20 = 1050$ v = 65	P1 K1 N1 K1 N1	**5**
11	2x + y = 120 atau setara 2x – y = 0 atau setara $\begin{pmatrix} 2 & -1 \\ 2 & 1 \end{pmatrix} \begin{pmatrix} x \\ y \end{pmatrix} = \begin{pmatrix} 0 \\ 120 \end{pmatrix}$ $= \frac{1}{(2)(-1) - (-1)(2)} \begin{pmatrix} 1 & 1 \\ -2 & 2 \end{pmatrix} \begin{pmatrix} 0 \\ 120 \end{pmatrix}$ x = 30° y = 60° **OR** y + 60 + y=180 atau setara 2x + y + 60= 180 atau setara	P1 P1 P1 K1 N1 N1 K1	

	$\begin{pmatrix}0 & 2\\ 2 & 1\end{pmatrix}\begin{pmatrix}x\\ y\end{pmatrix} = \begin{pmatrix}120\\ 120\end{pmatrix}$ $= \frac{1}{(0)(1)-(2)(2)}\begin{pmatrix}1 & -2\\ -2 & 0\end{pmatrix}\begin{pmatrix}120\\ 120\end{pmatrix}$ x = 30° y = 60°	K1 N1 N1	**6**
12(a)	<table><tr><td>x</td><td>-5.5</td><td>-3</td></tr><tr><td>y</td><td>7</td><td>-18</td></tr></table>	K1 K1	
(b)	Paksi dilukis dalam arah yang betul dengan skala seragam bagi $-5 \leq x \leq 3$ dan $-6 \leq y \leq 15$. Kesemua 9 titik dan *2 titiknya diplot dengan betul atau lengkung itu melalui kesemua titik-titik itu bagi $-5 \leq x \leq 3$ dan $-6 \leq y \leq 15$ Lengkung yang licin dan berterusan tanpa sebarang garis lurus, melalui kesemua 9 titik yang betul menggunakan skala yang diberi untuk $-5 \leq x \leq 3$ dan $-6 \leq y \leq 15$ *Nota:* *1. 7 atau 8 titik diplot dengan betul, beri K1.* *2. Abai lengkung yang terkeluar dari julat skala.*	P1 K2 N1	
(c) (i)	$-16.5 \leq y \leq -15.5$	P1	
(ii)	$-4.9 \leq x \leq -4.7$	P1	
(d)	Garis lurus $y = 3x - 13$ dilukis dengan betul dan tepat. $0.3 \leq x \leq 0.5$ $-2.5 \leq x \leq -2.3$	N1 N1	12

Graf untuk Soalan 12 (b)



<table>
<tr><th>Soalan</th><th>PeraturanPermarkahan</th><th colspan="2">Markah</th></tr>
<tr><td>13
(a)(i)

(ii)

(b)
(i)
(a)
(b)

(ii)</td><td>$(1, -3)$
Nota : $(3, -1)$ dilihat P1
$(-2, -2)$
Nota : $(2, 2)$ dilihat P1

Y = Pembesaran, faktor skala $\left(-\frac{1}{2}\right)$ pada pusat A
X = Translasi $\begin{pmatrix} 6 \\ -4 \end{pmatrix}$

$\left(\frac{-1}{2}\right)^2$ x 100
25</td><td>P2

P2

P3

P2

K2
N1</td><td>12</td></tr>
<tr><td>14(a)

(b)

(c)</td><td>120 orang

70-79

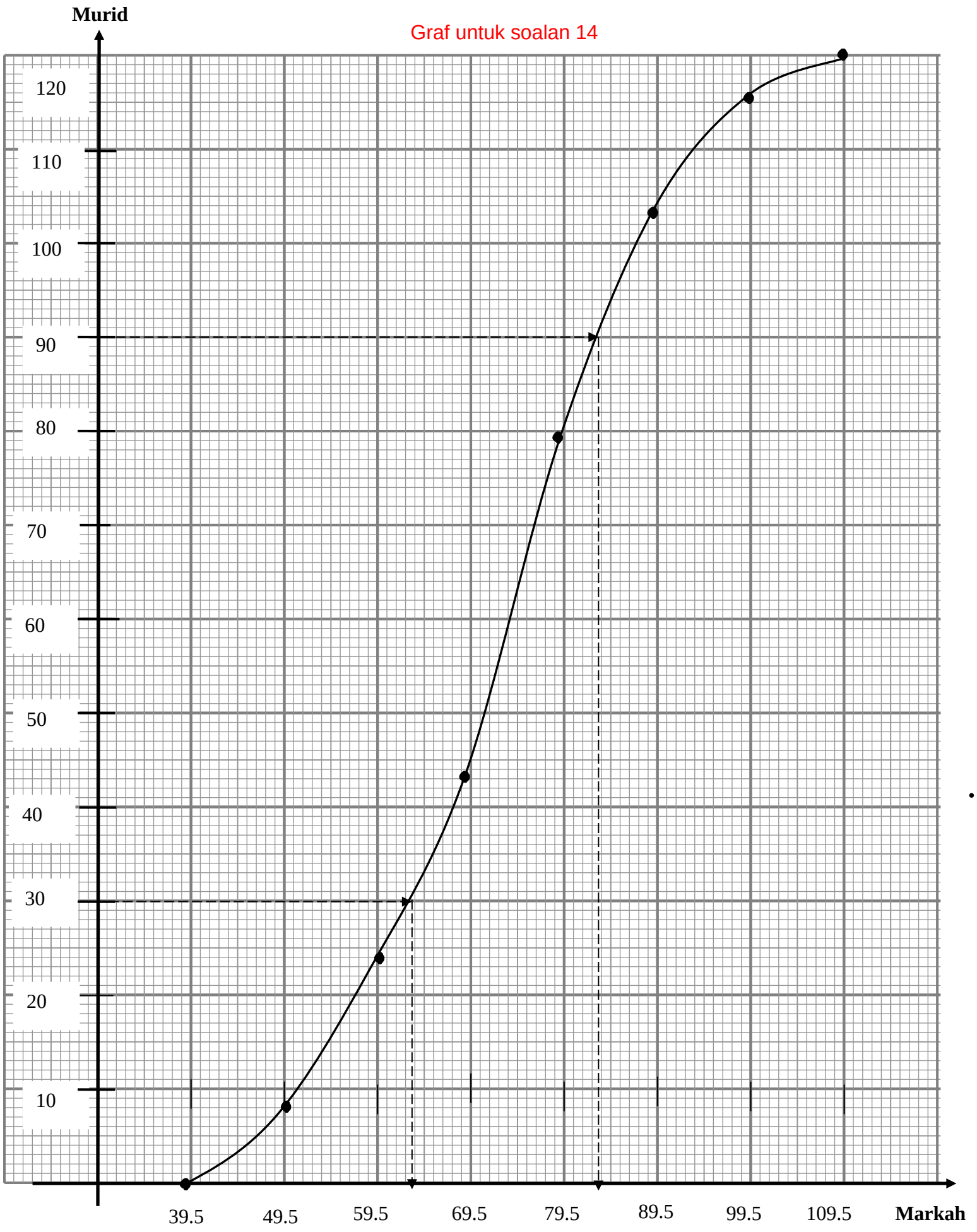
<table>
<tr><th>Markah</th><th>Sempadan atas</th><th>Kekerapan</th><th>Kekerapan Longgokan</th></tr>
<tr><td>30 - 39</td><td>39.5</td><td>0</td><td>0</td></tr>
<tr><td>40 - 49</td><td>49.5</td><td>8</td><td>8</td></tr>
<tr><td>50 - 59</td><td>59.5</td><td>16</td><td>24</td></tr>
<tr><td>60 - 69</td><td>69.5</td><td>20</td><td>44</td></tr>
<tr><td>70 - 79</td><td>79.5</td><td>36</td><td>80</td></tr>
<tr><td>80 - 89</td><td>89.5</td><td>24</td><td>104</td></tr>
<tr><td>90 - 99</td><td>99.5</td><td>12</td><td>116</td></tr>
<tr><td>100 - 109</td><td>109.5</td><td>4</td><td>120</td></tr>
</table>
Lajur I (Semua betul)
Lajur II (Semua betul)
Lajur III (Semua betul)
Lajur Iv (Semua betul)</td><td>K1

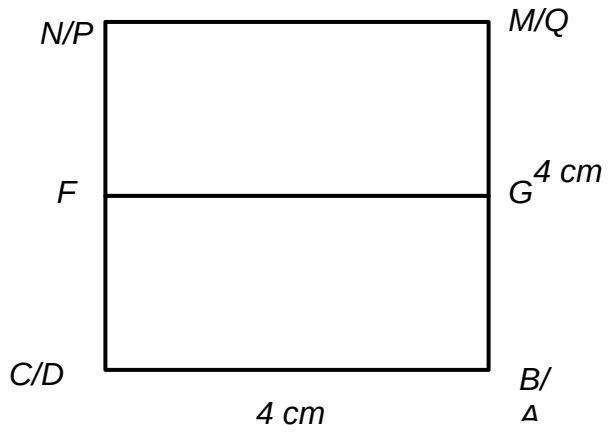
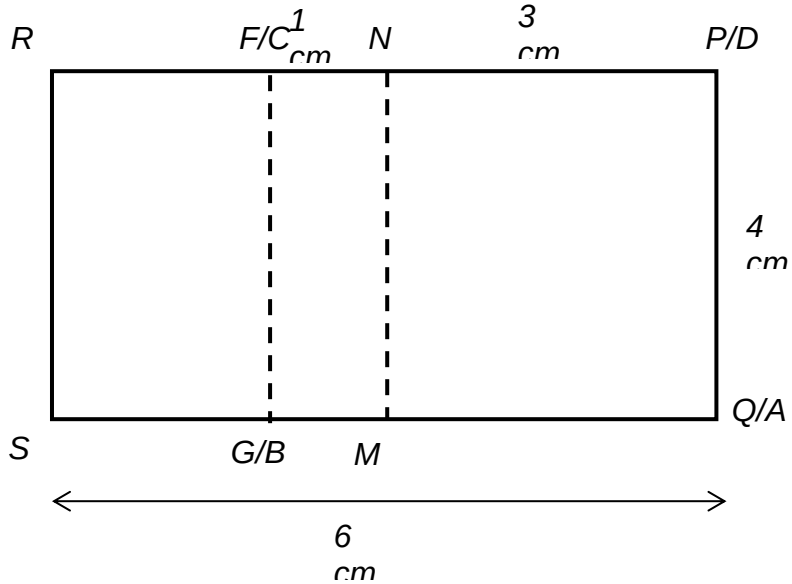
K1

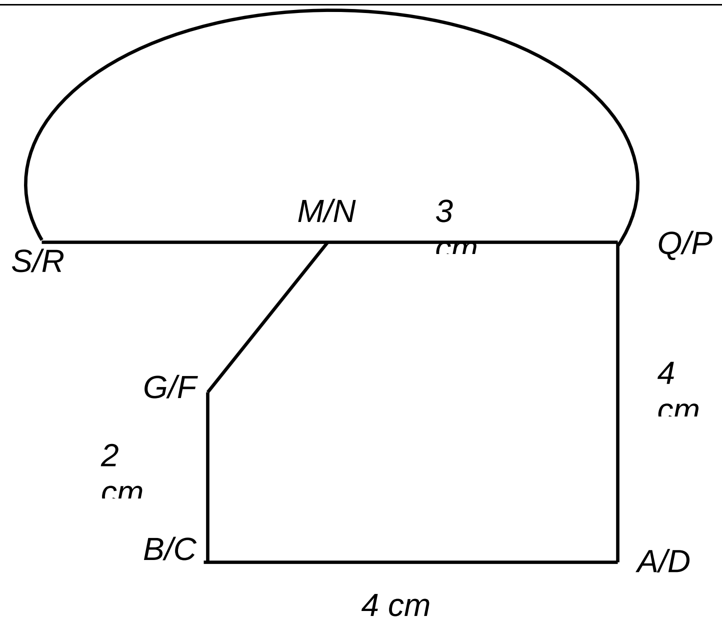
P1
P1
P1
P1</td><td></td></tr>
</table>

d)	Ogif Paksi-paksi dilukis dengan arah yang betul, skala seragam bagi $39.5 \leq x \leq 109.5$ dan $0 \leq y \leq 120$, Semua titik di plot dengan betul. Nota : *7 atau *8 titik di plot betul K1 Lengkung licin dan berterusan yang melalui semua 8 titik yang betul menggunakan skala $39.5 \leq x \leq 109.5$ dan $0 \leq y \leq 120$	P1 K2 N1	
(e)	Julat antara kuartil Kuartil 1 = 63 Kuartil 2 = 83 Julat Kuartil = 83 - 63 = 20 19 < Julat antara kuartil < 21	K1 N1	12

Graf untuk soalan 14



15 (a)			
	Correct shape with rectangle CBNM, CBFG and FGNM. All solid lines. CB = FG = NM > CF = BG = FN = GM Measurements correct to ± 0.2 cm (one way) and All angles at vertices = 90° ± 1°.	K1 K1 N1	
(b) (i)			
	Correct shape with rectangle SQRP. All solid lines. F – G and N – M joined by dashed line. SQ > QP > SG > GM > MQ Measurements correct to ± 0.2 cm (one way) and All angles at vertices = 90° ± 1°.	K1 K1 K1 N2	

(b) (ii)	 Correct shape with trapezium BGMQA and semicircle SQ. All solid lines. SQ $>$ BA $>$ AQ $>$ BG $>$ GM Measurements correct to $\pm$ 0.2 cm (one way) and All angles at vertices = 90° $\pm$ 1°.	K1 K1 N2	12 ====
16(a) (b)(i) (ii) (c)	R (25°U, 115°B) (5100 ÷60) = 85° 85° − 25° 60°U (4200 ÷ 60)kos 25° 63.44° atau 03°26' (65° − 03°26') 1°34' atau 1.56° (50° + 25°)/60 4500 (4500+4200) 8700bn $\frac{8700\ bn}{800\ knot}$ = 10.235 jam	P2 K1 K1 N1 K1 K1 N1 K1 K1 K1 N1	**12** ==