PERSIDANGAN KEBANGSAAN PENGETUA-PENGETUA
SEKOLAH MENENGAH CAWANGAN MELAKA

PEPERIKSAAN PENGESANAN
SIJIL PELAJARAN MALAYSIA 2007

SKEMA PERMARKAHAN

MATEMATIK
KERTAS 2
1449/2

MATHEMATICS PAPER 2
ANSWERS

NO	ANSWER	MARKS	
1	$4x^2 - x = 0$ $x(4x-1) = 0$ $x = 0$ or $x = \frac{1}{4}$	K1 K1 N1,N1	4
2	$2p - q = 14$ @ setara $4p = 16$ @ setara $p = 4$ $q = -6$	K1 K1 N1 N1	4
3	$n = 2$ $k^2 = 4$ $k = \pm 2$ $k = -2$	N1 K1 N1	3
4	$\tan 26^\circ 34' = \frac{10}{MP}$ $MP = 20$ cm $LP^2 = 20^2 - 12^2$ LP= 16 cm The angle between the plane JKPQ is $\angle$ KPL or $\angle$ JQM $\tan \angle KPL = \frac{10}{16}$ $\angle KPL = 32^\circ$	 K1 K1 N1	3
5	(a) $m_{RT} = -\frac{4}{3}$ $\frac{k-0}{2-6} = -\frac{4}{3}$ $k = \frac{16}{3}$ (b) Equation of SU, $m_{su} = \frac{8}{15}$ $0 = \frac{8}{15}(-8) + c$ $15y = 8x + 64$	 K1 N1 K1 K1 N1	5

6	$V_{\text{cylinder}} = \pi r^2 h$ $= \pi(3^2)10$ $= 282\frac{6}{7}$ or $282.86\ \text{cm}^3$ $V_{\text{hemisphere}} = \frac{2}{3}\pi r^3$ $= \frac{2}{3}\pi(3^3)$ $= 56\frac{4}{7}$ or $56.57\ \text{cm}^3$ Remaining volume $= 282.86 - 56.57$ $= 226\frac{2}{7}$ or $226.29\ \text{cm}^3$	K1 K1 K1 N1	4
7	(a) (i) $\angle\text{COE} = \cos^{-1}\frac{7}{14} = 60°$ (ii) $\frac{120}{360}\times 2\times\frac{22}{7}\times 7$ or $\frac{60}{360}\times 2\times\frac{22}{7}\times 14$ Perimeter of the whole diagram $= \frac{120}{360}\times 2\times\frac{22}{7}\times 7 + 7 + \frac{60}{360}\times 2\times\frac{22}{7}\times 14 + 21$ $= 57\frac{1}{3}$ or $57.33\ \text{cm}$ (b)(i) CE $= \sqrt{14^2 - 7^2} = 12.12$ (ii) $\frac{120}{360}\times\frac{22}{7}\times 7^2$ or $\frac{60}{360}\times\frac{22}{7}\times 14^2$ or $\frac{1}{2}\times 12.12\times 7$ Area of the shaded regions $= \frac{120}{360}\times\frac{22}{7}\times 7^2 + \frac{60}{360}\times\frac{22}{7}\times 14^2 - \frac{1}{2}\times 12.12\times 7$ $= 111.58\ \text{cm}^2$	K1 K1 N1 K1 K1 N1	6
8	(a) 2 is smaller than – 2 or 15 is an odd number. (b) 3 is the factor of 9. (c) Implication I : If x is a proper fraction, then x is less than 1. Implication II : If x is less than 1, then x is a proper fraction.	P1 K2 P1 P1	5

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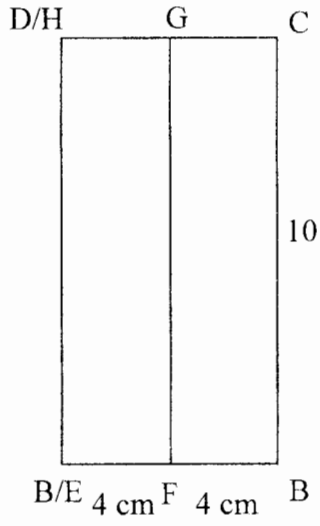
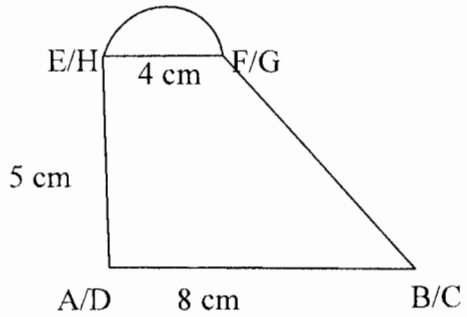
9	(a) $\frac{2}{3}\times\frac{3}{5}$ $=\frac{6}{15}$ or $\frac{2}{5}$ (b) $\frac{2}{3}\times\frac{3}{5}+\frac{1}{3}\times\frac{2}{5}$ $\frac{1}{3}\times\frac{2}{5}$ berikan K1 $=\frac{8}{15}$	K1 N1 K2 N1	5
10	(a) $\frac{14-v}{2}=4$ $v=6$ (b) 56 (c) $\frac{1}{2}(14+6)\times 2+4\times 14+\frac{1}{2}\times 2\times 14$ $90\div 8$ 11.25	K1 N1 N1 K1 K1 N1	6
11	(a) $k\begin{pmatrix}-4 & 1\\ -3 & 2\end{pmatrix}=\frac{1}{-5}\begin{pmatrix}-4 & h\\ -3 & 2\end{pmatrix}$ $k=-\frac{1}{5}$ $h=1$ (b) $\begin{pmatrix}2 & -1\\ 3 & -4\end{pmatrix}\begin{pmatrix}x\\ y\end{pmatrix}=\begin{pmatrix}11\\ 34\end{pmatrix}$ $\begin{pmatrix}x\\ y\end{pmatrix}=-\frac{1}{5}\begin{pmatrix}-4 & 1\\ -3 & 2\end{pmatrix}\begin{pmatrix}11\\ 34\end{pmatrix}$ $x=2$ $y=-7$	K1 N1 N1 K1 K1 N1 N1	7
12	(a) $m=7$ $n=-9$ (b) Paksi-paksi dilukis dengan betul, dengan skala seragam dan betul 6 titik dan 2* titik (m & n) diplot dengan betul Lengkung yang licin dan melalui 8 titik yang betul bagi $-3\le x\le 4$ Nota : (1) 6 atau 7 titik diplot betul, berikan K1 (2) Jika skala lain digunakan, tolak 1 markah dari markah KN yang diperoleh	K1 K1 K1 K2 N1	

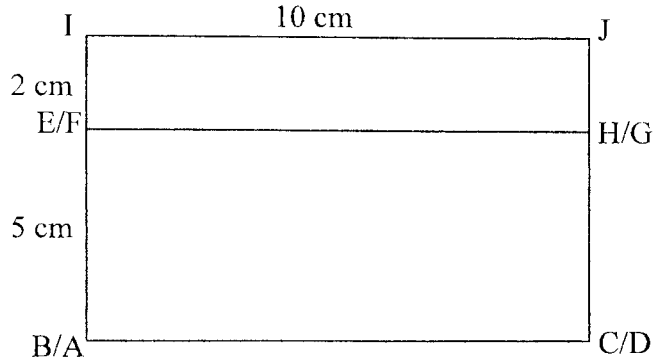
	(c) (i) $y = -2.7 \pm 0.2$ (ii) $x = -0.7 \pm 0.1$, 2.65 ± 0.1 (d) Kenal pasti persamaan $y = -2x + 5$ Garis lurus $y = -2x + 5$ dilukis betul $x = 3.6 \pm 0.1$	P1 P1, P1 K1 K1 N1	12
13	(a) (i) V : reflection in the line y = 4 (ii) W : enlargement with scale factor $\frac{3}{2}$ at the center (5, 4) (b) Area of ABC $= \left(\frac{2}{3}\right)^2 \times 45$ or $45 \div \left(\frac{3}{2}\right)^2$ $= 20\ \text{cm}^2$ Area of ABSC $= 20 \times 2$ $= 40\ \text{cm}^2$ (c) (i) A(5, 6) $\xrightarrow{\text{W}}$ (5, 7) (ii) A(5, 6) $\xrightarrow{\text{V}}$ (5, 2) $\xrightarrow{\text{V}}$ (5, 6)	P1 P1 P1 P1 P1 K1 N1 K1 N1 P1 P1, P1	12
14	(a)		

Amount (RM) *Kutipan Derma (RM)*	Upper Boundary *(Sempadan Atas)*	Frequency *(Kekerapan)*	Cumulative Frequency *(Kekerapan Longgokan)*
10 – 19	19.5	0	0
20 – 29	29.5	1	1
30 – 39	39.5	3	4
40 – 49	49.5	5	9
50 – 59	59.5	7	16
60 – 69	69.5	11	27
70 – 79	79.5	7	34
80 – 89	89.5	4	38
90 – 99	99.5	2	40

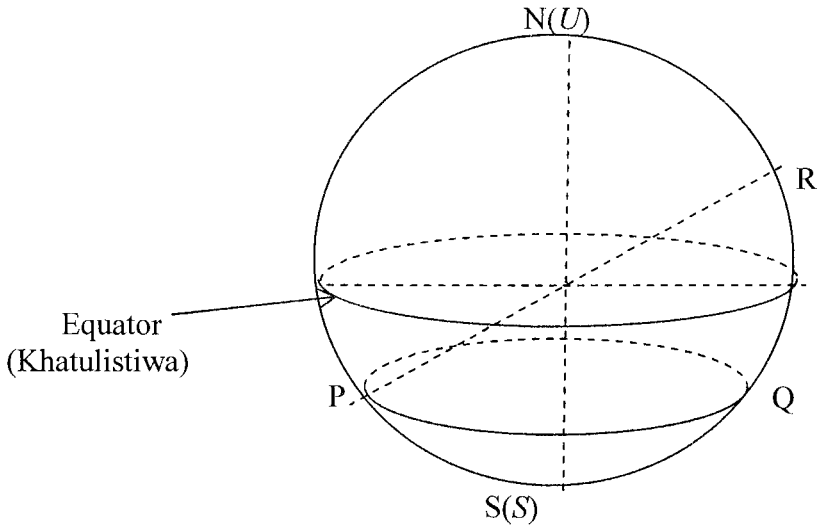
P1 P1 P2 P1 — 5

Nota : 7 atau 8 kekerapan betul, berikan P1

	(b) Refer to the graph (Rujuk graf) Paksi-paksi dilukis dengan betul dengan skala seragam & betul Semua titik diplot dengan betul Ogif yang licin dan melalui semua titik yang betul Nota : (1) 7 atau 8 titik diplot betul, berikan K1 (2) Jika skala lain digunakan, tolak 1 markah dari markah KN yang diperoleh (c) (i) median = 63.5 ± 0.1 (ii) $40 - 32$ $= 8$	K1 K2 N1 P1 K1 N1	12
15	 (a) Bentuk kelihatan betul Semua garis penuh Ukuran betul sehingga ± 0.2 cm dan sudut di semua bucu $= 90^\circ \pm 1^\circ$  (b) (i) Bentuk kelihatan betul Nota : Terima lakaran AE > EF; AB > AE Ukuran betul sehingga ± 0.2 cm dan sudut di bucu D dan H = $90^\circ \pm 1^\circ$	K1 K1 N1 K1 K1 N2	



	(ii) Bentuk kelihatan betul	K1	
	Semua garis penuh	K1	
	IJ > IB; BE > EI	K1	
	Ukuran betul sehingga ± 0.2 cm dan sudut di semua bucu = $90^\circ \pm 1^\circ$	N2	12
16	(a) 145° E	P1	
	(b)		



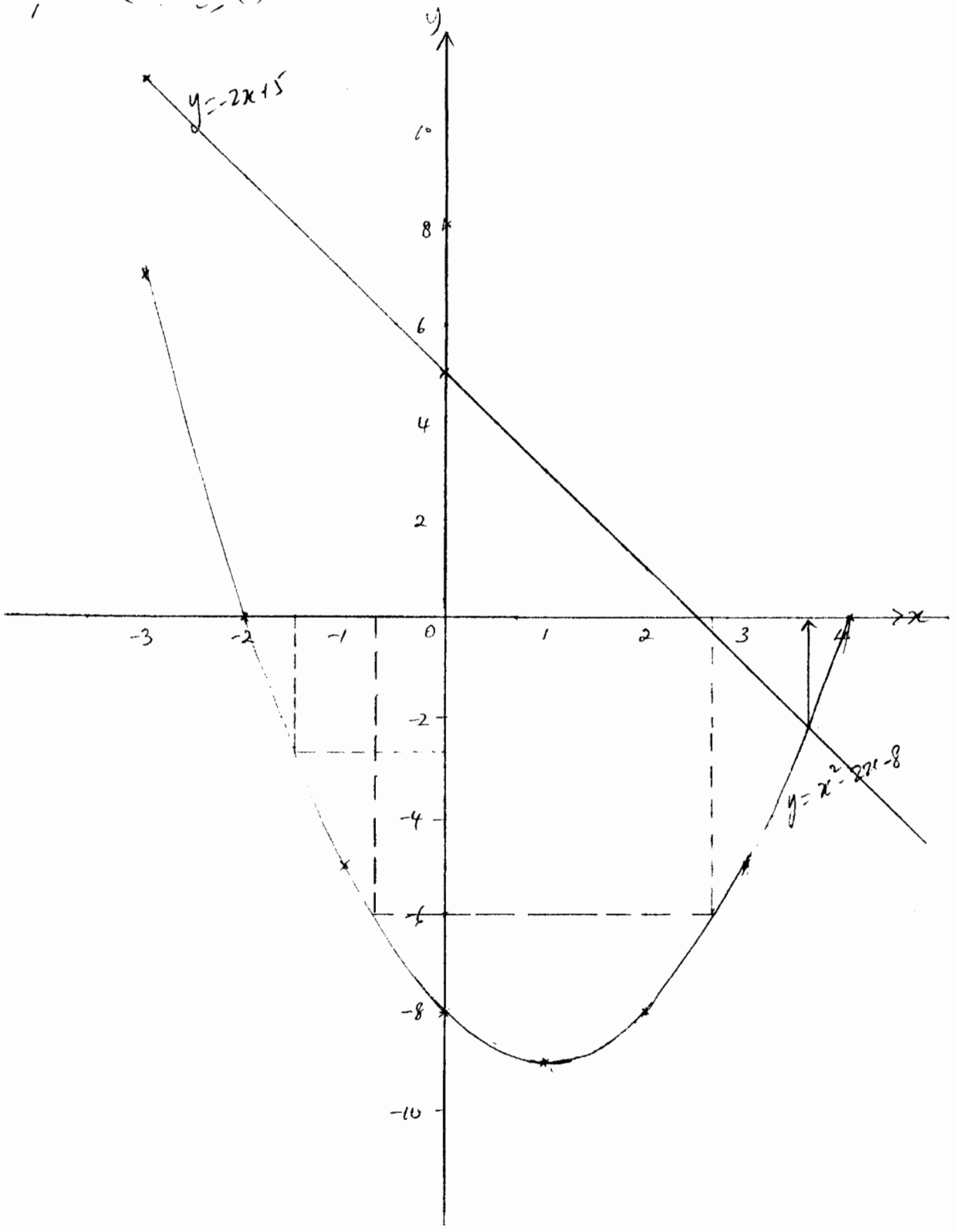
P1

P1

R (43° N, 145° E) P2

	(c) $(90 - 43) \times 60$	K1	
	$= 2820$ n.m.	N1	
	(d) (i) 600×8	K1	
	$= 4800$ n.m.	N1	
	(ii) $\frac{4800}{60\cos 43^\circ}$	K1	
	$109^\circ 23' - 35^\circ$	K1	
	$74^\circ 23'$ E or 74.39° E	N1	12

Answer for Question 12(b)



Answer for Question 14(b)