★

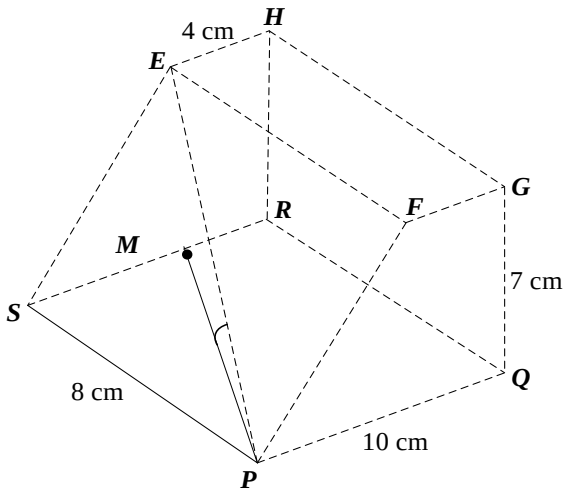
MODUL PINTAS TINGKATAN 5

Peperiksaan Percubaan Tahun 2019

Skema Jawapan Mathematics

Kertas 2 1449/2

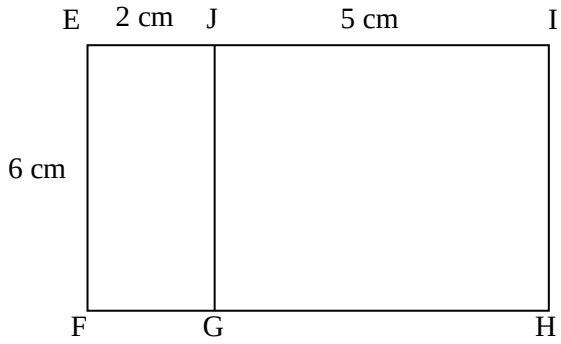
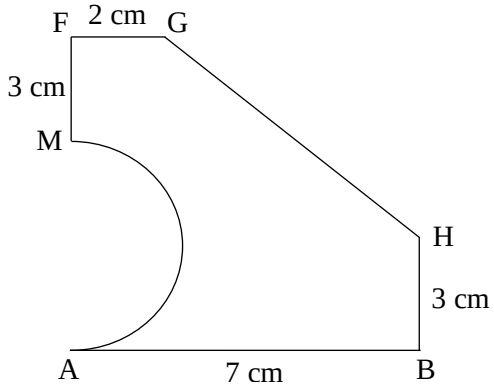
MARKING SCHEME MODUL PINTAS MATHEMATICS FORM 5

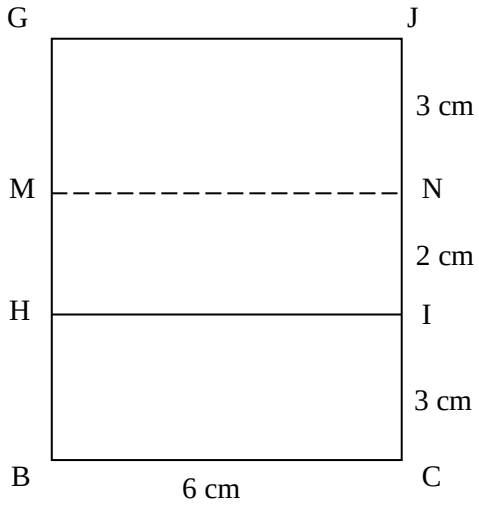
NO.	MARKING SCHEME	MARKS	
		SUB MARKS	TOTAL MARKS
1	1. $y \geq x$ 2. $y < -2x + 8$ 3. $x \geq 0$	N1 N1 N1	**3**
2	 *Notes* : Write the answer without mark, N0 (b) $\tan\theta = \frac{7}{10}$ @ $\tan^{-1}\frac{7}{10}$ $\theta = 34.99°$ @ $35°$	N1 K1 N1	**3**
3	$8(2x+1) - 4x - \frac{1}{2}(2x)(2x+1) = 22$ $-2x^2 + 11x + 8 = 22$ $2x^2 - 11x + 14 = 0$ $(2x - 7)(x - 2) = 0$ $x = \frac{7}{2}$, 2	K1 K1 N1N1	**4**
4	x = pen, y = glue, $2x + 3y = 20$ @ $x + 2y = 11$ $x + 2y = 11$ x 2 $2x + 4y = 22$ $y = 2$ $x = 7$	K1 K1 N1 N1	**4**

5	(a) $\frac{1}{2} \times (10 + 8) \times 4 \times 8$ 288	K1 N1	2
	(b) $288 + \frac{1}{3} \times 8 \times 8 \times x = 420$ $x = 6.19$	K1 N1	2
			4
6	(a) $2 \times \frac{22}{7} \times 5$ @ $2 \times \frac{22}{7} \times 1$ $2 \times \frac{22}{7} \times 5 + 2 \times \frac{22}{7} \times 1$ $\frac{642}{7}$ @ $37\frac{5}{7}$ @ 37.71	K1 K1 N1	3
	(b) $\frac{22}{7} \times 5^2$ @ $\frac{22}{7} \times 1^2$ $\frac{22}{7} \times 5^2 - \frac{22}{7} \times 1^2$ $\frac{528}{7}$ @ $75\frac{3}{7}$ @ 75.43	K1 K1 N1	3
			6
7	(a) Statement / *Pernyataan* (b) Some / *Sebilangan* (c) If $\sin m^0 = \cos m^0$, then $m^0 = 45^0$ or *Jika* $\sin m^0 = \text{kos } m^0$, *maka* $\sin m^0 = 45^0$ (d) $2n - 2$, $n = 1, 2, 3, 4, \ldots$	P1 P1 P1 N2	**5**
8	(a) $n = 36$ $m = 3$ (b) $R = 3S$ $8R + 12S = 432$ $\begin{pmatrix} 1 & -3 \\ 8 & 12 \end{pmatrix}\begin{pmatrix} R \\ S \end{pmatrix} = \begin{pmatrix} 0 \\ 432 \end{pmatrix}$ $\begin{pmatrix} R \\ S \end{pmatrix} = \frac{1}{1(12)-(-3)(8)}\begin{pmatrix} 12 & 3 \\ -8 & 1 \end{pmatrix}\begin{pmatrix} 0 \\ 432 \end{pmatrix}$ $= \frac{1}{36}\begin{pmatrix} 1296 \\ 432 \end{pmatrix}$ $R = 36$ $S = 12$	N1 N1 K1 K1 N1 N1	2 4
			6

9	(a) 21	N1	1
	(b) $\frac{0-21}{24-18}$ @ $\frac{21-0}{18-24}$ $-\frac{7}{2}$ @ $-\frac{3}{2}$ @ -3.5	K1 N1	2
	(c) $\frac{1}{2}\times(21+v)\times 10 + \frac{1}{2}\times(14+8)\times 21 = \frac{1}{2}\times 22\times 36$ $v = 12$	K1 N1	2 **5**
10	(a) (A,2), (A,5), (A,P), (6,3), (6,9), (6,Q), (6,R), (6,T) *Notes* : 1. If only 6 or 7 are listing correctly K1	K2	2
	(b) (6,3), (6,9) $\frac{2}{8}$ @ $\frac{1}{4}$	K1 N1	2
	(c) (A,2), (A,5), (6,Q), (6,R), (6,T) $\frac{5}{8}$	K1 N1	2 **6**
11	(a) $y = 2$	N1	1
	(b) $m = -\frac{1}{2}$ $8 = -\frac{1}{2}(-2) + c$ $c = 7$ $y = -\frac{1}{2}x + 7$	K1 K1 N1	3
	(c) $0 = -\frac{1}{2}x + 7$ $x = 14$	K1 N1	2 **6**
12	(a) | x	-3	1
y	0	-8		K1K1	2
	(b) Refer graph		

	1. All the axes drawn in the correct direction with uniform scales for $-4 \le x \le 4$ and $-18 \le y \le 70$. 2. 9 points are correctly plotted within the range $-4 \le x \le 4$. 3. Smooth and continuous curve without any straight line between any two points within $-4 \le x \le 4$. *Notes* : 1. If 7 or 8 points correctly plotted, only K1 will be given. 2. Deduct 1 mark if other scales are used.	K1 K2 N1	4
	(c) (i) $2 \le y \le 4$ (ii) $3.6 \le x \le 3.8$	K1 K1	2
	(d) $y = 3x - 3$ drawn on the graph The values of x : $-0.4 \le x \le -0.2$ $2.1 \le x \le 2.3$ $-3.9 \le x \le -3.7$ *Notes* : 1. N marks will be given if the values of x are shown in the graph. 2. If the values are obtained by calculation, N0.	K1 N1 N1 N1	4 **12**
13	(a) (i) (1, 6) *Notes* : (-3, 2) seen or drawn on the grid P1 (ii) (3, 3) *Notes* : (0, 4) seen or drawn on the grid P1	P2 P2	4
	(b) (i) (a) **V** : Rotation 90° clockwise at centre *A*. @ *Putaran* 90° *ikut arah jam pada pusat A.* or equivalent *Notes* : 1. Rotation 90° clockwise or Rotation, centre *A*. P2 *Putaran* 90° *ikut arah jam @ putaran pada pusat A* P2 2. Rotation / *putaran* P1	P3	
	(b) (i) (b) Enlargement with a scale factor of 2 at centre *E*. @ *Pembesaran dengan faktor skala* 2 *pada pusat E.* or equivalent	P3	6

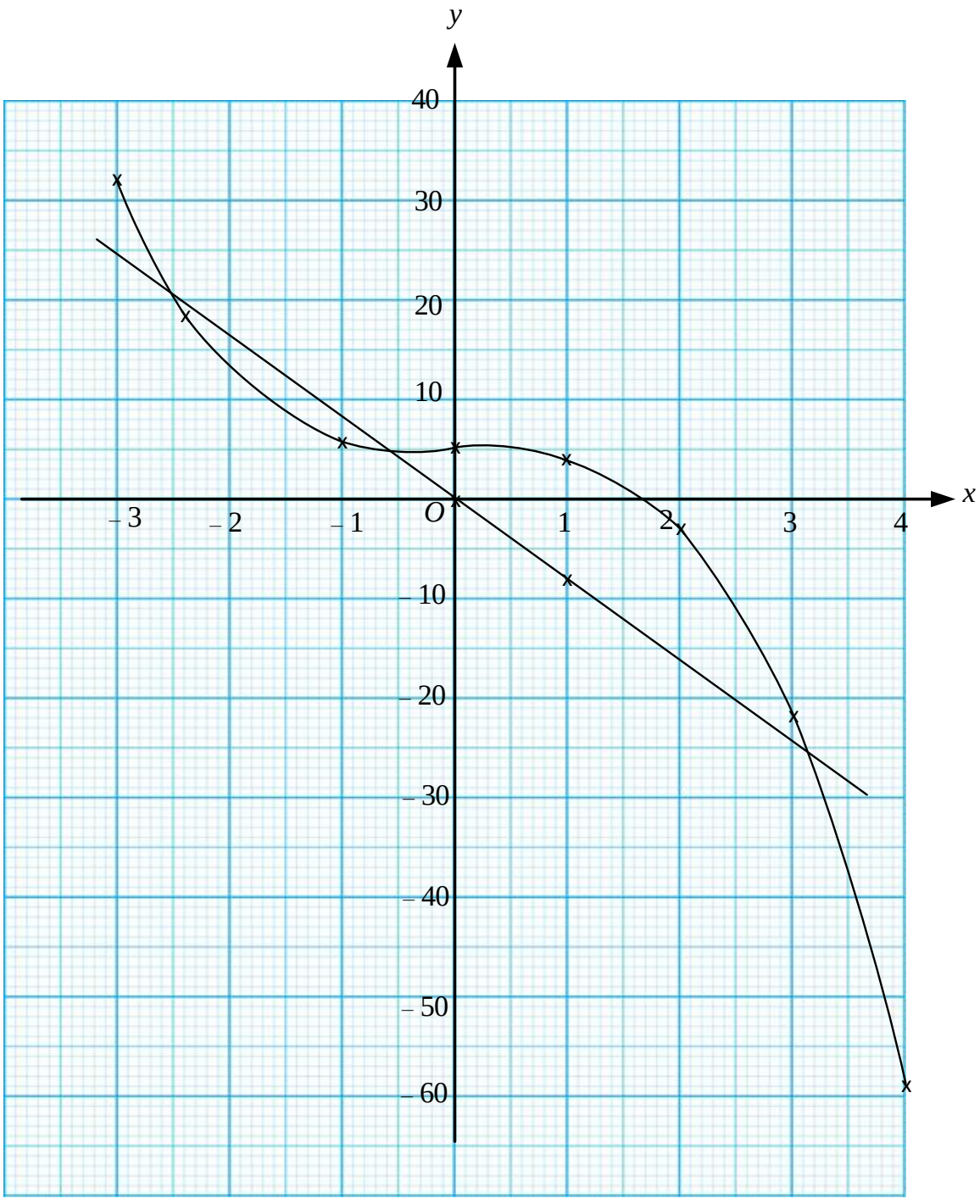
	Notes : 1. Enlargement, scale factor 2 *or* Enlargement, centre *E*. P2 *Pembesaran, faktor skala* 2 *@* Pembesaran, pusat *E.* P2 2. Enlargement / *pembesaran* P1		
	(b) (ii) $\frac{160}{2^2}$ 40	K1 N1	2
			12
14	(a)  *Notes* :		
	Correct shape rectangles *EFGJ* and *JGHI*	K1	
	EF = IH > JI = GH > EJ = FG	K1	
	Measurements accurate up to $\pm$ 0.2 cm (one way) and all right angles = 90° $\pm$ 1	N1	3
	(b) (i)  *Notes* :		
	Correct shape rectangles *ABHGFM*	K1	
	AB> BH = FM > FG	K1	
	Measurements accurate up to $\pm$ 0.2 cm (one way) and all right angles = 90° $\pm$ 1	N2	4

	(b)(ii)  *Notes*:		
	Correct shape rectangles *GJIH* and *HIBC*	K1	
	M – N is joined by a dashed line	K1	
	$BC = GJ > GM = JN = HB = IC > MH = NI$	K1	
	Measurements accurate up to $\pm$ 0.2 cm (one way) and all right angles = 90° $\pm$ 1	N2	5
			12
15	(a) I II III *Notes* : 1. Column I K1 Column II K2 Column III K1 2. Column II – 6 or 7 values correctly written, K1	K1 K2 K1	4

Ages (years) *Umur (tahun)*	Frequency *Kekerapan*	Midpoint *Titik Tengah*
17 – 21	0	19
22 – 26	2	24
27 – 31	4	29
32 – 36	7	34
37 – 41	10	39
42 – 46	8	44
47 – 51	6	49
52 – 56	3	54
57 – 61	0	59

	(b) $\frac{2(24)+4(29)+7(34)+10(39)+8(44)+6(49)+3(54)}{2+4+7+10+8+6+3}$ $\frac{1600}{40}$ 40	K2 N1	3
	(c) Refer graph 1. All the axes drawn in the correct direction with uniform scales for $19 \leq x \leq 59$ and $0 \leq y \leq 10$. 2. Plot all 9 points correctly. 3. Drawing of the frequency polygon. *Notes* : 1. If 7 – 8 points plotted correctly, only K1 will be given. 2. Deduct 1 mark if other scales are used.	 K1 K2 N1	4
	(d) Modal class is 37 – 41 @ *Kelas mod ialah* 37 – 41	P1	1 **12**
16	(a) Latitude point M = 35° *N* Longitude point M = (180° - 80°)*E* = 100° *E* ∴ M = (35° *N*, 100°*E*)	 P1 N2	3
	(b) Different latitude J and K = $\frac{2700}{60}$ = 45° ∴ θ = 45° − 35° = 10°	 K1 K1 N1	3
	(c) (80° + 20) x 60 x kos 35° 4914.91	K2 N1	3
	(d) $\frac{2700+4914.91}{520}$ 14.64	K2 N1	3 **12**

12 (b)



15 (c)