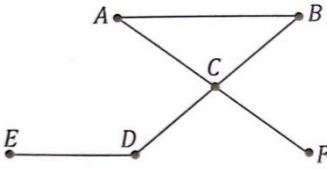
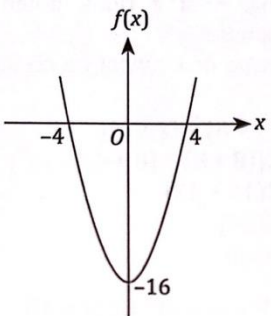
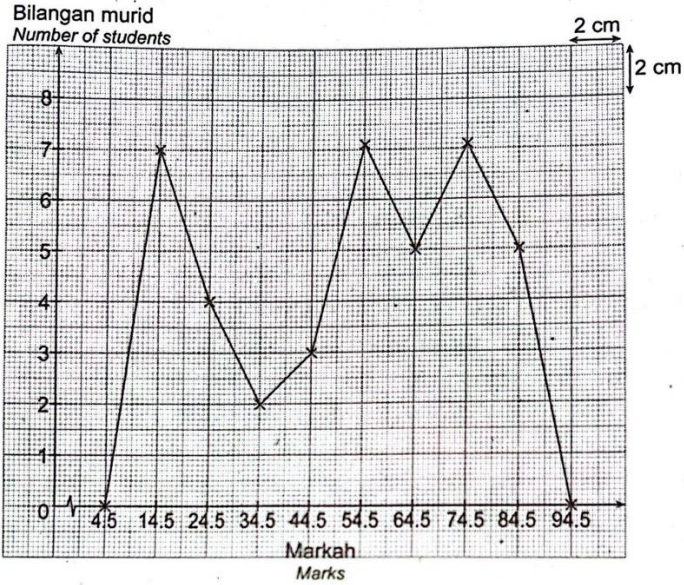


SKEMA JAWAPAN
PEPERIKSAAN PERCUBAAN SPM 2022
MATEMATIK KERTAS 2

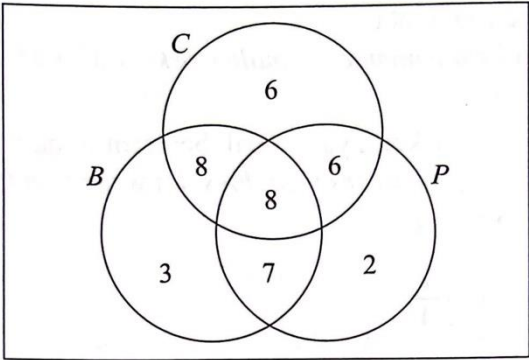
NO. SOALAN	JAWAPAN	MARKAH
1. (a)	(a) $q = (5)(-2) - (-3)(4)$ $= 2$	1
(b)	(b) $\begin{pmatrix} 5 & -3 \\ 4 & -2 \end{pmatrix} \begin{pmatrix} m \\ n \end{pmatrix} = \begin{pmatrix} 13 \\ 10 \end{pmatrix}$ $\begin{pmatrix} m \\ n \end{pmatrix} = \frac{1}{2} \begin{pmatrix} -2 & 3 \\ -4 & 5 \end{pmatrix} \begin{pmatrix} 13 \\ 10 \end{pmatrix}$ $\begin{pmatrix} m \\ n \end{pmatrix} = \frac{1}{2} \begin{pmatrix} 4 \\ -2 \end{pmatrix}$ $\begin{pmatrix} m \\ n \end{pmatrix} = \begin{pmatrix} 2 \\ -1 \end{pmatrix}$ $m = 2$ $n = -1$	1 1 1 1
2. (a)	 [Menerima mana-mana jawapan yang munasabah] [Accepts any reasonable answers]	3
(b)	$\sum d(V) = 2 \times 8$ $= 16$	1
3. (a)	$\frac{RM350\,000}{RM1\,000} \times RM1.991$ $= RM696.85$	1 1
(b)	$\frac{RM350\,000}{RM1\,000} \times x$ $= RM905.10$ atau setara/or equivalent $= 3.017$	1 1
4. (a)	11.25 a.m. ke/to 2.40 p.m = 195 minit/minutes $= 3.25 \text{ jam/hours}$ $Laju/Speed = \frac{169}{3.25}$ $= 52 \text{ kmj}^{-1}/\text{kmh}^{-1}$	1 1
(b) (i)	Nyahpecutan / deceleration $\frac{90 - 120}{0.75}$ $= 40 \text{ kmj}^{-1}/\text{kmh}^{-1}$	1 1
(ii)	Nyahpecutan / deceleration $\frac{35 - 50}{2}$ $= 7.5 \text{ m/minutes}$	1 1

5.	(a) AD (b) AC (c) FH	1 1 1
6. (a)	(i) Akaun Semasa / <i>Savings Account</i> (ii) Akaun Simpanan Tetap / <i>Fixed Savings Account</i>	1 1
(b)	Saham / <i>Shares</i>	1
(c)	= Faedah Sama Rata / <i>Flat Interest Rate</i> $= 90\% \times RM95\,000 \times 3.2\% \times 5$	1 1
7. (a)	$487_9 \rightarrow 112221_3$ 112221_3	1 1
(b)	$1241_7 - 352_7$ $= 556_7$	1 1
8. (a)	(i) Pernyataan / <i>Statement</i> (ii) Bukan pernyataan / <i>Statement</i>	1 1
(b)	Jika $x \neq 2$, maka $x \neq 4$ <i>If $x \neq 2$, then $x \neq 4$</i> Palsu / <i>False</i>	1 1
9. (a)	Pecutan / <i>Acceleration</i> $= \frac{120 - 20}{5}$ $= 20 \text{ m/min}^{-2}$	1 1
(b)	Lex memandu pada laju seragam 120 m/min^{-1} <i>Lex drives at a constant speed of 120 m/min^{-1}</i>	1
(c)	Kadar perubahan laju : <i>The rate of change in speed :</i> $= \frac{0 - 120}{2}$ $= -60 \text{ m/min}^{-2}$	1 1
10. (a)	$= -k$	1
	$a = -\frac{5}{2}$ $b = 30^\circ$	1 1
11. (a)	$x(4x - 3) = 3(2x + 3)$ $4x^2 - 3x = 6x + 9$ $4x^2 - 9x - 9 = 0$ $(x - 3)(4x + 3) = 0$ $x = 3$ $x = -\frac{3}{4}$	1 1 1 1
(b) (i)	$\frac{1}{2}(x - 4)(x + 7) = 22$ $x^2 + 3x - 28 = 44$ $x^2 + 3x - 72 = 0$	1 1
(ii)	Punca-punca fungsi/ <i>Roots of function</i> $x^2 - 16 = 0$ $x^2 - 4^2 = 0$ $(x + 4)(x - 4) = 0$ $x = -4$ $x = 4$	

	Pintasan-y / <i>y-intercept</i>: -16 	2																																	
12. (a)	<table border="1"> <thead> <tr> <th>Markah Marks</th><th>Kekerapan Frequency</th><th>Titik tengah Midpoint</th></tr> </thead> <tbody> <tr><td>0 – 9</td><td>0</td><td>4.5</td></tr> <tr><td>10 – 19</td><td>7</td><td>14.5</td></tr> <tr><td>20 – 29</td><td>4</td><td>24.5</td></tr> <tr><td>30 – 39</td><td>2</td><td>34.5</td></tr> <tr><td>40 – 49</td><td>3</td><td>44.5</td></tr> <tr><td>50 – 59</td><td>7</td><td>54.5</td></tr> <tr><td>60 – 69</td><td>5</td><td>64.5</td></tr> <tr><td>70 – 79</td><td>7</td><td>74.5</td></tr> <tr><td>80 – 89</td><td>5</td><td>84.5</td></tr> <tr><td>90 – 99</td><td>0</td><td>94.5</td></tr> </tbody> </table> Semua selang kelas (markah) adalah betul <i>All class intervals (marks) are correct</i> Kekerapan untuk setiap selang kelas adalah betul. <i>Frequency for each class intervals are correct.</i> Titik tengah untuk setiap selang kelas adalah betul. <i>Midpoint for each class intervals are correct.</i>	Markah Marks	Kekerapan Frequency	Titik tengah Midpoint	0 – 9	0	4.5	10 – 19	7	14.5	20 – 29	4	24.5	30 – 39	2	34.5	40 – 49	3	44.5	50 – 59	7	54.5	60 – 69	5	64.5	70 – 79	7	74.5	80 – 89	5	84.5	90 – 99	0	94.5	1 1 1
Markah Marks	Kekerapan Frequency	Titik tengah Midpoint																																	
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(b)	Min/Mean $= \frac{(0 \times 0.45) + (7 \times 14.5) + (4 \times 24.5) + (2 \times 34.5) + (3 \times 44.5) + (7 \times 54.5) + (5 \times 64.5) + (7 \times 74.5) + (5 \times 84.5) + (0 \times 94.5)}{7 + 4 + 2 + 3 + 7 + 5 + 7 + 5}$ $= \frac{0 + 101.5 + 98 + 69 + 133.5 + 381.5 + 322.5 + 521.5 + 422.5}{40}$ $= \frac{2\,050}{40}$ = 51.25 markah/<i>marks</i>	1 1																																	

(c)		4
13. (a)	$\{(C, 1), (C, 9), (O, 1), (O, 9), (V, 1), (V, 9), (I, 1), (I, 9), (D, 1), (D, 9)\}$ $n(S) = 10$	2 1
(b)	(i) $\{(C, 1), (C, 9), (O, 9), (V, 1), (V, 9), (I, 9), (D, 1), (D, 9)\}$ $= \frac{4}{5}$ (ii) $\{(O, 9), (I, 9)\}$ $= \frac{1}{5}$	1 1 1 1
(c)	0	1
14. (a)	$\frac{RM100}{RM6\ 000} \times 100\%$ $= 1.67\%$ Tidak, kerana simpanan bulanan beliau hanya RM100, iaitu kurang daripada 10% pendapatan bulanan beliau. <i>No, because his monthly savings is only RM100, which is lesser than 10% of his monthly income.</i>	1 2
(b)	$\frac{RM30\ 000}{12}$ $= RM2\ 500$ Beliau tidak boleh mencapai matlamatnya kerana pendapatan lebihannya tidak cukup menampung RM2500 dan simpanannya hanya RM10. <i>He cannot achieve his goal because his surplus of income cannot afford RM2500 and his savings are only RM10.</i>	1 2
(c)	Aliran tunai baharu/New cash flow $RM6\ 000 + RM500 - RM650 - RM950 - RM3\ 170$ $= RM1\ 730$ Simpanan bulanan untuk wang pendahuluan <i>Monthly saving for down payment</i> $\frac{RM30\ 000}{2 \times 12} = RM1\ 250$	1

[illegible]

(c)	Kapasiti enjin kereta terletak antara 1 801cc dan 2 000 cc. Jadi kadar asas ialah RM280 Jumlah kadar progresif $= (1\,822\text{cc} - 1\,800\text{cc}) \times RM0.50$ $= 22 \times RM0.50$ $= RM11.00$ Jumlah cukai jalan $= \text{Jumlah kadar progresif} + \text{kadar asas}$ $= RM11.00 + RM280.00$ $= RM291.00$	1 1 1 1 1
17. (a)	$3k - 4n = -16$ ----- 1 $k + n - 8$ ----- 2 $k = 8 - 2n$ ----- 3 Ganti 3 dalam 1 $3k - 4n = -16$ $3(8 - 2n) - 4n = -16$ $24 - 6n - 4n = -16$ $24 - 4n = -16$ $-10n = -16 - 24$ $10n = 40$ $n = 4$ ----- 4 Ganti $n = 4$ dalam 3 $k = 8 - 2n$ $k = 8 - 2(4)$ $k = 4$	1 1 1 1
(b)	(i) $26 + 28 + 23 - 16 - 15 - 14 + k = 40$ $32 + k = 40$ $k = 8$	1 1 1
(ii)		3
(c)	(i) Q ialah pantulan pada garis $x = -1$ <i>Q is a reflection in the line $x = -1$</i> P ialah pembesaran dengan faktor skala 3 pada pusat I <i>P is an enlargement of scale factor 3 at centre I</i>	2 3