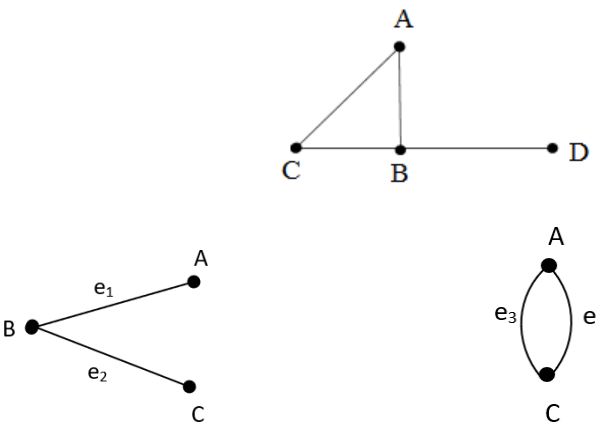
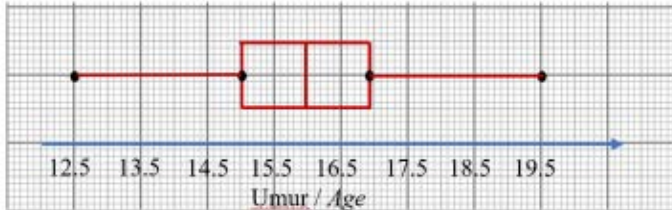


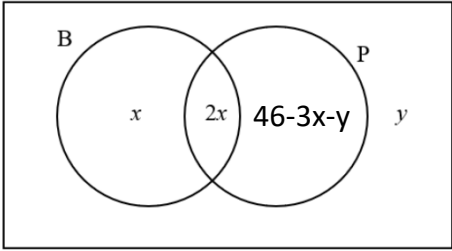
Skema Kertas 2
Peperiksaan Percubaan SPM Matematik 2022

SOALAN	PERMARKAHAN BAHAGIAN A	MARKAH
1	Katakan x = epal dan y = oren $3x + 2y = 9$ $5x + 4y = 16$ $\begin{bmatrix} 3 & 2 \\ 5 & 4 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 9 \\ 16 \end{bmatrix}$ $\begin{bmatrix} x \\ y \end{bmatrix} = \frac{1}{3(4)-2(5)} \begin{bmatrix} 4 & -2 \\ -5 & 3 \end{bmatrix} \begin{bmatrix} 9 \\ 16 \end{bmatrix}$ $\begin{bmatrix} x \\ y \end{bmatrix} = \frac{1}{2} \begin{bmatrix} 4(9) & + & (-2)(16) \\ -5(9) & + & 3(16) \end{bmatrix}$ $\begin{bmatrix} x \\ y \end{bmatrix} = \frac{1}{2} \begin{bmatrix} 4 \\ 3 \end{bmatrix}$ $\begin{bmatrix} x \\ y \end{bmatrix} = \begin{bmatrix} 2 \\ 1.5 \end{bmatrix}$ $x = 2$, $y = 1.5$ Harga sebiji epal ialah RM2 dan harga sebiji oren ialah RM1.50	1 1 1 1
2 (a)		2 1 1
3	Kos perubatan selepas deduktibel: = RM35 000 – RM1 000 = RM34 000. Kos ditanggung oleh syarikat insurans: = $\frac{80}{100} \times 34\ 000$ = RM 27 200 Kos ditanggung oleh Lokman sendiri: = $\frac{20}{100} \times 34\ 000 + \text{RM1 000}$ = RM7 800	1 1 1 1

10	$p = 1, q = 2, r = -1$	3																								
SOALAN	PERMARKAHAN BAHAGIAN B	MARKAH																								
11(a)	$3x^2 - 6x = 2x^2 + 3x$ $x^2 - 9x = 0$	1 1																								
(b)	$x(x-9) = 0$ $x = 9$	1 1																								
(c) i)	Length ABCD = $2(9) + 3 = 21\text{cm}$ Width ABCD = 9 cm	1 1																								
ii)	Length EFGH = $3(9) = 27\text{cm}$ Width EFGH = $(9) - 2 = 7\text{cm}$	1 1																								
12(a)(i)	Bell shaped Left skewed	1 1																								
(ii)	The 100 m (M16) run time is disperse wider than the100 m (M18)	1																								
(iii)	100 m L18 is better because it has a better time record	1																								
(b) (i)	 <table data-bbox="383 1308 778 1467"><tr><td>Nilai minimum</td><td>12.5</td></tr><tr><td>Q₁</td><td>15</td></tr><tr><td>Median</td><td>16</td></tr><tr><td>Q₃</td><td>16.9</td></tr><tr><td>Nilai maksimum</td><td>19.5</td></tr></table>	Nilai minimum	12.5	Q ₁	15	Median	16	Q ₃	16.9	Nilai maksimum	19.5	1 1 1														
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Q ₁	15																									
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Nilai maksimum	19.5																									
(ii)	Garis menyambungkan nilai minimum dengan Q ₁ , Q ₃ dengan nilai maksimum dan garis membentuk kotak. Julat = 7 Julat antara kuartil = 1.9	1 1																								
(iii)	Symmetric Distribution / Bell shaped	1																								
13(a)	<table border="1" data-bbox="367 1724 898 2022"><thead><tr><th></th><th>A</th><th>B</th><th>C</th></tr></thead><tbody><tr><td>1</td><td>(1,A)</td><td>(1,B)</td><td>(1,C)</td></tr><tr><td>2</td><td>(2,A)</td><td>(2,B)</td><td>(2,C)</td></tr><tr><td>3</td><td>(3,A)</td><td>(3,B)</td><td>(3,C)</td></tr><tr><td>4</td><td>(4,A)</td><td>(4,B)</td><td>(4,C)</td></tr><tr><td>5</td><td>(5,A)</td><td>(5,B)</td><td>(5,C)</td></tr></tbody></table>		A	B	C	1	(1,A)	(1,B)	(1,C)	2	(2,A)	(2,B)	(2,C)	3	(3,A)	(3,B)	(3,C)	4	(4,A)	(4,B)	(4,C)	5	(5,A)	(5,B)	(5,C)	3
	A	B	C																							
1	(1,A)	(1,B)	(1,C)																							
2	(2,A)	(2,B)	(2,C)																							
3	(3,A)	(3,B)	(3,C)																							
4	(4,A)	(4,B)	(4,C)																							
5	(5,A)	(5,B)	(5,C)																							

(b) (i)	$\{(1,B),(1,C),(2,B),(2C),(3,B),(3,C)\}$	1																																																																
	$\frac{6}{15} \div \frac{2}{5}$	1																																																																
	$\{(1,A), (2,A), (3,A), (4,A), (4,B), (4,C), (5,A), (5,B), (5,C)\}$	2																																																																
	$\frac{9}{15} \div \frac{3}{5}$	1																																																																
14 (a)	$(65000 \times 0.1) \div 8$ 812.50	1 1																																																																
(b) (i)	Pelan kewangan Seon Ho/ <i>Seon Ho's financial plan</i>																																																																	
	<table><tr><th>Butiran/Details</th><th colspan="2">(RM)</th></tr><tr><td>Gaji bersih/Net Salary</td><td>7500</td><td></td></tr><tr><td>Gaji guru komputer/Computer teacher salary</td><td>500</td><td></td></tr><tr><td>Pendapatan pasif sewa bulanan/Passive monthly rental income</td><td>800</td><td></td></tr><tr><td>Jumlah pendapatan bulanan/ Total Monthly income</td><td>8800</td><td></td></tr><tr><td>Tolak simpanan tetap bulanan</td><td>750</td><td></td></tr><tr><td>Baki pendapatan/ Income Balance</td><td></td><td>8050</td></tr><tr><td>Tolak perbelanjaan tetap bulanan/ Deduct monthly fixed expenses</td><td></td><td></td></tr><tr><td>Ansuran pinjaman rumah (1)/ Home Loan Installment(1)</td><td>970</td><td></td></tr><tr><td>Ansuran pinjaman rumah (2)/ Home Loan Installment(2)</td><td>890</td><td></td></tr><tr><td>Ansuran kereta/ Car installments</td><td>1300</td><td></td></tr><tr><td>Premium insurans/ Insurance premium</td><td>540</td><td></td></tr><tr><td>Jumlah perbelanjaan tetap bulanan/ Monthly fixed expenses</td><td></td><td>3700</td></tr><tr><td>Tolak jumlah perbelanjaan tidak tetap bulanan/ Deduct monthly non- fixed expenses</td><td></td><td></td></tr><tr><td>Perbelanjaan makanan/Food Expenses</td><td>950</td><td></td></tr><tr><td>Utiliti rumah/Home utilities</td><td>450</td><td></td></tr><tr><td>Percutian & pelancongan/Holidays & tourism</td><td>800</td><td></td></tr><tr><td>Tol dan petrol/Toll and petrol</td><td>300</td><td></td></tr><tr><td>Elaun ibu bapa bulanan/ Monthly parental allowance</td><td>1200</td><td></td></tr><tr><td>Jumlah perbelanjaan tidak tetap / Monthly non- fixed expenses</td><td></td><td>3700</td></tr><tr><td>Pendapatan lebihan/Surplus income</td><td></td><td>650</td></tr></table>		Butiran/Details	(RM)		Gaji bersih/Net Salary	7500		Gaji guru komputer/Computer teacher salary	500		Pendapatan pasif sewa bulanan/Passive monthly rental income	800		Jumlah pendapatan bulanan/ Total Monthly income	8800		Tolak simpanan tetap bulanan	750		Baki pendapatan/ Income Balance		8050	Tolak perbelanjaan tetap bulanan/ Deduct monthly fixed expenses			Ansuran pinjaman rumah (1)/ Home Loan Installment(1)	970		Ansuran pinjaman rumah (2)/ Home Loan Installment(2)	890		Ansuran kereta/ Car installments	1300		Premium insurans/ Insurance premium	540		Jumlah perbelanjaan tetap bulanan/ Monthly fixed expenses		3700	Tolak jumlah perbelanjaan tidak tetap bulanan/ Deduct monthly non- fixed expenses			Perbelanjaan makanan/Food Expenses	950		Utiliti rumah/Home utilities	450		Percutian & pelancongan/Holidays & tourism	800		Tol dan petrol/Toll and petrol	300		Elaun ibu bapa bulanan/ Monthly parental allowance	1200		Jumlah perbelanjaan tidak tetap / Monthly non- fixed expenses		3700	Pendapatan lebihan/Surplus income		650	2
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15 (a) (i)	$(5,2) \rightarrow (3,0) \rightarrow (-1,2)$	2																																																																
(ii)	$(5,2) \rightarrow (5,4) \rightarrow (3,2)$	2																																																																
(b) (i)	S : Pantulan pada garis $x = -1$	3																																																																
(ii)	R : Pembesaran pada pusat pembesaran (1,3) dengan faktor skala 2	3																																																																

SOALAN	PERMARKAHAN BAHAGIANC	MARKAH
16 (a)	$(x + 7)6x = 360$ $6x^2 + 42x - 360 = 0$ $(x - 5)(x + 12) = 0$ $x = 5$ $x = -12$ (ignored)	1 1 1 1
(b) (i)	$\text{Min, } \bar{x} = \frac{5328}{10}$ $= 532.8$ $\text{Sisihan piawai, } \sigma = \sqrt{\frac{2875096}{10} - (532.8)^2}$ $= 60.28$	 1 1 1
(ii)	Bakery Y Lower standard deviation More consistent	1 1 1
(c) (i)	Jumlah pendapatan tahunan / <i>Total annual income</i> = RM4 200 × 12 + RM2 100 = RM52 500 Pendapatan bercukai / <i>Chargeable income</i> = RM52 500 – RM150 – (RM9 000 + RM3 500 + RM7 000 + RM2 650 + RM125) = RM30 075	 1 1
(ii)	Cukai bagi RM20 000 pertama / <i>Tax on the first RM20 000</i> = RM150 Cukai atas baki berikutnya / <i>Tax on the next balance</i> $= \frac{3}{100} \times (RM30\,075 - RM20\,000)$ $= RM302.25$ Rebate yang layak / <i>Eligible rebate</i> = RM400 + RM30 = RM430 Cukai pendapatan / <i>Income tax</i> = RM150 + RM302.25 – RM430 = RM22.25	 1 1

17 (a)	$2x + 2y = 64$ $2x + 3y = 74$ $2y - 3y = 64 - 74$ $-y = -10$ $y = 10$ $2x + 2(10) = 64$ $x = 22$	1 1 1 1
(b) (i)	ξ 	3
(ii)	$7 + 2(7) + 16 + y = 46$ $y = 9$	1 1 1
(c) (i) (ii)	V : Pembesaran, pada pusat A, faktor skala $\frac{1}{3}$ W : Pantulan, pada garis KJ	3 2