

KERTAS 1

1 B

$$\begin{aligned} 16\left(\sqrt[3]{\frac{1}{64}}\right)^{-1} &= 16\left(\frac{1}{4}\right)^{-1} \\ &= 16(4) \\ &= 64 \end{aligned}$$

2 C

$$\begin{aligned} 5.4 \times 10^3 + 4.7 \times 10^2 &= 5.4 \times 10^3 + 0.47 \times 10^3 \\ &= (5.4 + 0.47) \times 10^3 \\ &= 5.87 \times 10^3 \end{aligned}$$

3 D

$$\begin{aligned} \text{A: } 615_{10} - 46_{10} &= 569_{10} \\ \text{B: } 615_9 - 46_9 &= 558_9 \\ \text{C: } 615_8 - 46_8 &= 547_8 \\ \text{D: } 615_7 - 46_7 &= 536_7 \end{aligned}$$

4 C

$$\begin{aligned} \text{RM}156.25 \times 2.5\% &= \text{RM}3.90625 \\ &= \text{RM}3.91 \text{ (tiga angka bererti / three significant figures)} \end{aligned}$$

5 D

$$\begin{aligned} \text{A: } 5.49 \times 10^{-4} &= 0.000549 \\ \text{B: } 5.48 \times 10^{-3} &= 0.00548 \\ \text{C: } 5.48 \times 10^3 &= 5\,480 \\ \text{D: } 5.49 \times 10^4 &= 54\,900 \\ 53\,770, 54\,320, 54\,900, 55\,420 \end{aligned}$$

6 A

$$\begin{aligned} \text{Modal Azhar / Azhar's capital} &= \text{RM}(5.3 \times 10^4) \\ \text{Modal Baba / Baba's capital} &= \text{RM}(5.3 \times 10^4) - \text{RM}5\,000 \\ \text{Modal Chew / Chew's capital} &= \text{RM}(5.3 \times 10^4) - \text{RM}5\,000 \\ \text{Jumlah modal / Total amount of capital} &= \text{RM}(1.7 \times 10^5) \\ \text{Modal Dolly / Dolly's capital} &= \text{RM}(1.7 \times 10^5) - \text{RM}(5.3 \times 10^4) - [\text{RM}(5.3 \times 10^4) - \text{RM}5\,000] - [\text{RM}(5.3 \times 10^4) - \text{RM}5\,000] \\ &= \text{RM}(17 \times 10^4) - \text{RM}(5.3 \times 10^4) - [\text{RM}(5.3 \times 10^4) - \text{RM}(0.5 \times 10^4)] - [\text{RM}(5.3 \times 10^4) - \text{RM}(0.5 \times 10^4)] \\ &= \text{RM}(17 \times 10^4) - \text{RM}(5.3 \times 10^4) - \text{RM}(4.8 \times 10^4) - \text{RM}(4.8 \times 10^4) \\ &= \text{RM}[(17 - 5.3 - 4.8 - 4.8) \times 10^4] \\ &= \text{RM}(2.1 \times 10^4) \end{aligned}$$

7 D

$$\begin{aligned} m &= \frac{1+n}{3-2n} \\ m(3-2n) &= 1+n \\ 3m-2mn &= 1+n \\ -n-2mn &= 1-3m \\ n+2mn &= 3m-1 \\ n(1+2m) &= 3m-1 \\ n &= \frac{3m-1}{1+2m} \end{aligned}$$

8 C

$$\begin{aligned}2m + 5 &= 7(1 - m) \\2m + 5 &= 7 - 7m \\2m + 7m &= 7 - 5 \\9m &= 2 \\m &= \frac{2}{9}\end{aligned}$$

9 D

$$\begin{aligned}y - 6 &< 2(2y + 3) \\y - 6 &< 4y + 6 \\y - 4y &< 6 + 6 \\-3y &< 12 \\y &> \frac{12}{-3} \\y &> -4\end{aligned}$$

10 A

$$\begin{aligned}-3x + 5 &\leq 6 + x \\-3x - x &\leq 6 - 5 \\-4x &\leq 1 \\x &\geq \frac{1}{-4} \\x &\geq -\frac{1}{4}\end{aligned}$$

11 C

$$\begin{aligned}j &\propto \frac{1}{p} \\j &= \frac{k}{p} \\120 &= \frac{k}{6.5} \\k &= 780 \\j &= \frac{780}{p}\end{aligned}$$

12 B

$$\begin{aligned}p &\propto \sqrt{w} \\p &= k\sqrt{w} \\k &= \frac{p}{\sqrt{w}}\end{aligned}$$

A:

$$k = \frac{4}{\sqrt{9}} = \frac{4}{3}$$

$$k = \frac{3}{\sqrt{16}} = \frac{3}{4}$$

Nilai-nilai k adalah berbeza.
The values of k are different.

B:

$$k = \frac{3}{\sqrt{9}} = \frac{3}{3} = 1$$

$$k = \frac{4}{\sqrt{16}} = \frac{4}{4} = 1$$

Nilai-nilai k adalah sama.
The values of k are same.

C:

$$k = \frac{3}{\sqrt{9}} = \frac{3}{3} = 1$$

$$k = \frac{5}{\sqrt{16}} = \frac{5}{4}$$

Nilai-nilai k adalah berbeza.

The values of k are different.

D:

$$k = \frac{4}{\sqrt{9}} = \frac{4}{3}$$

$$k = \frac{6}{\sqrt{16}} = \frac{3}{2}$$

Nilai-nilai k adalah berbeza.

The values of k are different.

13 C

$$\begin{aligned} \begin{bmatrix} -7 & 4 \\ 0 & 8 \end{bmatrix} + 3 \begin{bmatrix} 2 & 6 \\ 1 & -1 \end{bmatrix} &= \begin{bmatrix} -7 & 4 \\ 0 & 8 \end{bmatrix} + \begin{bmatrix} 6 & 18 \\ 3 & -3 \end{bmatrix} \\ &= \begin{bmatrix} -7+6 & 4+18 \\ 0+3 & 8+(-3) \end{bmatrix} \\ &= \begin{bmatrix} -1 & 22 \\ 3 & 5 \end{bmatrix} \end{aligned}$$

14 B

$$\sphericalangle VST = 25^\circ$$

$$\sphericalangle PTS = 25^\circ + 30^\circ = 55^\circ$$

$$\sphericalangle TPQ = 180^\circ - 30^\circ = 150^\circ$$

$$\begin{aligned} x + y &= [(5 - 2) - 180^\circ] - 55^\circ - 150^\circ - 100^\circ \\ &= 235^\circ \end{aligned}$$

15 B

$$NR = 10 \text{ cm} - 4 \text{ cm} = 6 \text{ cm}$$

$$MR = \frac{4}{5} \times 10 \text{ cm} = 8 \text{ cm}$$

$$\tan x^\circ = -\frac{NR}{MR}$$

$$= -\frac{6}{8}$$

$$= -\frac{3}{4}$$

16 B

$$\sphericalangle POM = 2 \times 34^\circ = 68^\circ$$

$$\begin{aligned} x &= 180^\circ - 68^\circ - 90^\circ \\ &= 22^\circ \end{aligned}$$

17 D

A: Bukan teselasi kerana terdapat bintang yang tidak berulang.

Not a tessellation because there are non-repeating spots.

B: Bukan teselasi kerana terdapat bintang yang tidak berulang.

Not a tessellation because there are non-repeating spots.

C: Bukan teselasi kerana terdapat bintang yang tidak berulang.

Not a tessellation because there are non-repeating spots.

D: Merupakan teselasi yang terdiri daripada bintang yang berulang.

It is a tessellation consisting of repeating spots.

18 C

$$P = \{A, B\}$$

$$P' = \{C, D\}$$

$$Q = \{D\}$$

$$Q' = \{A, B, C\}$$

$$R = \{B, C, D\}$$

$$\begin{aligned} P' \cap Q' \cap R &= \textcircled{C} \text{ D} \cap \text{A} \text{ B} \cap \textcircled{C} \cap \text{B} \text{ C} \text{ D} \\ &= \textcircled{C} \cap \text{B} \text{ C} \text{ D} \\ &= \text{C} \end{aligned}$$

19 A

$$\begin{aligned} \text{Min} / \text{Mean} &= \frac{2.3 + 4.5 + 5.7 + 5.7 + 3.8}{5} \\ &= 4.4 \end{aligned}$$

20 B

Bilangan bungkusan cendol yang dijual

The number of packet of cendol sold

$$= 60 + 65 + 50 + 55 + 80$$

$$= 310$$

Bilangan bungkusan susu soya yang dijual

The number of packet of soy milk sold

$$= 40 + 50 + 40 + 40 + 60$$

$$= 230$$

Katakan harga sebungkus cendol / *Let the price of a packet of cendol = x*

$$310x + 230(\text{RM}1.20) = \text{RM}834$$

$$310x + \text{RM}276 = \text{RM}834$$

$$310x = \text{RM}558$$

$$x = \frac{\text{RM}558}{310}$$

$$x = \text{RM}1.80$$

21 A

$$\begin{aligned} m^3 \times n \times p^7 \times m^3 \times n^{-2} \times p^3 &= m^{3+3} \times n^{1+(-2)} \times p^{7+3} \\ &= m^6 \times n^{-1} \times p^{10} \\ &= \frac{m^6 p^{10}}{n} \end{aligned}$$

22 B

$$y = ax^n - x + c$$

$$y = (0)x^n - x + 3$$

$$y = -x + 3$$

$$\text{Kecerunan} / \text{Gradient} = -1$$

$$\text{Pintasan-y} / \text{y-intercept} = 3$$

23 B

Dari graf, laju seragam ialah 60 km j⁻¹.

From the graph, the uniform speed is 60 km h⁻¹.

24 C

$$\text{A: } y > 2x + 4$$

$$\text{B: } y < 2x + 4$$

$$\text{C: } y \geq 2x + 4$$

$$\text{D: } y \leq 2x + 4$$

25 A

$$A^{-1} = \frac{1}{ad-bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$$

$$M^{-1} = \frac{1}{(10)(1) - q(-3)} \begin{pmatrix} p & 3 \\ 2 & 10 \end{pmatrix}$$

$$-bc = -q(-3)$$

$$-6 = 3q$$

$$q = -2$$

$$p = d$$

$$p = 1$$

26 C

$$T \propto \sqrt{L}$$

$$T = k\sqrt{L}$$

$$3 = k\sqrt{36}$$

$$k = \frac{3}{6}$$

$$k = \frac{1}{2}$$

$$T = \frac{\sqrt{L}}{2}$$

27 D

$$\tan \theta = \frac{5}{12}$$

$$\frac{XY}{YZ} = \frac{5}{12}$$

$$XZ^2 = XY^2 + YZ^2$$

$$= 5^2 + 12^2$$

$$= 169$$

$$XZ = 13$$

Diberi $XZ = 26$. Oleh itu, $13 \times 2 = 26$.

Given $XZ = 26$. Thus, $13 \times 2 = 26$.

$$YZ = 12 \times 2$$

$$= 24 \text{ cm}$$

28 A

$$\sphericalangle SOQ = 2 \times 52^\circ = 104^\circ$$

$$\sphericalangle PSO = 180^\circ - 60^\circ = 120^\circ$$

$$x = 360^\circ - 90^\circ - 104^\circ - 120^\circ$$

$$= 46^\circ$$

29 B

$$\text{Skala} = \frac{\text{Ukuran lukisan berskala}}{\text{Ukuran objek}}$$

$$\text{Scale} = \frac{\text{Measurement of scale drawing}}{\text{Measurement of object}}$$

$$\frac{1}{8} = \frac{10}{SR}$$

$$SR = 80 \text{ cm}$$

$$PS / QR = \frac{4\,000}{80}$$

$$= 50 \text{ cm}$$

$$\text{Perimeter} = 50 + 50 + 80 + 80$$

$$= 260 \text{ cm}$$

30 C

A mempunyai jarak lebih daripada 4 cm dari titik L dan titik M

A has distance more than 4 cm from point L and M

B mempunyai jarak lebih daripada 4 cm dari titik M

B has distance more than 4 cm from point M

C mempunyai jarak kurang daripada 4 cm dari setiap titik J , titik M dan titik L

C has distance less than 4 cm from each of the points J , M and L

D mempunyai jarak lebih daripada 4 cm dari titik J

D has distance more than 4 cm from point J

31 C

– Terdapat rantau persilangan antara set P dan set Q .

There is a region of intersection between set P and set Q .

– Terdapat rantau kesatuan antara persilangan set P dan set Q , dengan set R .

There is a region of union between the intersection of set P and set Q , with set R .

$(P \cap Q) \cup R$

32 D

Mod / Mode = 170

$x = 171$

33 A

$P = 10\,000$, $r = 0.05$, $n = 4$, $t = 2$

$$MV = P \left(1 + \frac{r}{n} \right)^{nt}$$

$$= 10\,000 \left(1 + \frac{0.05}{4} \right)^{(4)(2)}$$

$$= 10\,000(1.104486101)$$

$$= 11\,044.86$$

Faedah / Interest = RM11 044.86 – RM10 000

$$= \text{RM}1\,044.86$$

34 D

Skim pinjaman emas / Gold loan scheme

$$\text{Faedah untuk 7 tahun / Interest for 7 years} = \text{RM}10\,000 \times \frac{6}{100} \times 7$$
$$= \text{RM}4\,200$$

$$\text{Jumlah bayaran balik / Total repayment} = \text{RM}10\,000 + \text{RM}4\,200$$
$$= \text{RM}14\,200$$

$$\text{Ansuran bulanan / Monthly installment} = \frac{\text{RM}14\,200}{84}$$
$$= \text{RM}169.05$$

Skim pinjaman premium mempunyai ansuran bulanan yang lebih rendah.

Premium loan scheme has lower monthly installment.

$$\text{Beza ansuran bulanan / Difference of monthly installment} = \text{RM}169.05 - \text{RM}150$$
$$= \text{RM}19.05$$

$$\text{Penjimatan / Savings} = \text{RM}19.05 \times 84$$
$$= \text{RM}1\,600.20 \approx \text{RM}1\,600$$

35 B

Katakan kos hamper pertama / Let the cost of the first hamper = x

x , $2x$, $4x$, $8x$, $16x$, $32x$

$$x + 2x + 4x + 8x + 16x + 32x = 63x$$

$$63(\text{RM}30) = \text{RM}1\,890$$

36 A

$$\sin 212^\circ = -0.5299192642$$

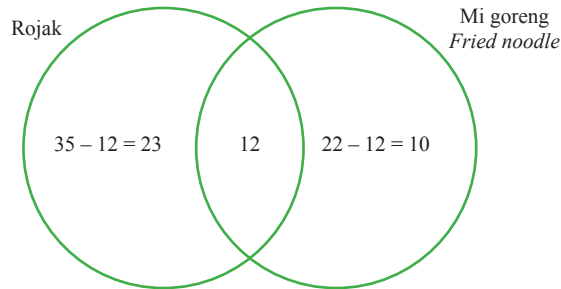
A: $\sin 328^\circ = -0.5299192642$

B: $\sin 302^\circ = -0.8480480962$

C: $\sin 244^\circ = -0.8987940463$

D: $\sin 238^\circ = -0.8480480962$

37 B



Bilangan pelanggan yang suka satu jenis makanan sahaja

The number of customers who like one type of food only

$$= 23 + 10$$

$$= 33$$

38 D

$$P' = (7, 5)$$

$$P = (7 - 5, 5 + 2)$$

$$= (2, 7)$$

$$P = \mathbf{D}$$

39 D

A: Peristiwa ini tidak dipengaruhi oleh kesudahan yang telah berlaku sebelum ini.

The event is not affected by the outcome that had already occurred previously.

B: Peristiwa ini tidak dipengaruhi oleh kesudahan yang telah berlaku sebelum ini.

The event is not affected by the outcome that had already occurred previously.

C: Peristiwa ini tidak dipengaruhi oleh kesudahan yang telah berlaku sebelum ini.

The event is not affected by the outcome that had already occurred previously.

D: Peristiwa ini dipengaruhi oleh kesudahan yang telah berlaku sebelum ini.

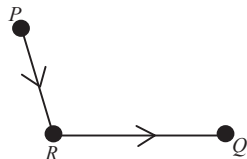
The event is affected by the outcome that had already occurred previously.

40 B

Pelepasan cukai meliputi caruman Kumpulan Wang Simpanan Pekerja (KWSP), rawatan perubatan dan yuran pengajian.

The individual tax rebate consists of contributions to the Employees Provident Fund (EPF), medical treatment and education fees.

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
	$y = \frac{1}{2}x + (-5)$ $y = \frac{x}{2} - 5$	1	4
3	<p>(a) $\frac{\text{Luas sektor / Area of sector}}{\pi j^2} = \frac{\theta}{360^\circ}$</p> $\frac{115.5}{\left(\frac{22}{7}\right)^2} = \frac{360^\circ - 240^\circ}{360^\circ}$ $j^2 = 110.25$ $j = 10.5$	1 1	4
	<p>(b) $\frac{\text{Panjang lengkok / Arc length}}{2\pi j} = \frac{\theta}{360^\circ}$</p> $\frac{\text{Panjang lengkok / Arc length}}{2\left(\frac{22}{7}\right)(10.5)} = \frac{120^\circ}{360^\circ}$ <p>Panjang lengkok minor $LM = 22$ cm The minor arc length of LM</p>	1 1	
4	$MV = P\left(1 + \frac{r}{n}\right)^{nt}$ $= 10\,000 \left(1 + \frac{0.03}{4}\right)^{(4)(2)}$ $= 10\,615.99$ <p>Jumlah faedah yang diperoleh / The total interest received = RM10 615.99 – RM10 000 = RM615.99</p>	1 1 1	3
5	$\frac{1}{2} \times \text{tapak} \times \text{tinggi} = \text{luas segi tiga}$ $\frac{1}{2} \times \text{base} \times \text{height} = \text{area of triangle}$ $\frac{1}{2}(x)(2+x) = 7.5$ $x^2 + 2x - 15 = 0$ $(x-3)(x+5) = 0$ <p>$x = 3, x = -5$ $x > 0, x = 3$</p> $y = 2(2+x)$ $= 2(2+3)$ $= 10 \text{ cm}$	1 1 1 1 1	5
6	<p>(a) Antejadian / Antecedent: $a^2 - b^2 = (a - b)^2$ Akibat / Consequence: $a^2 - b^2 = (a - b)(a + b)$</p> <p>(b) Akas / Converse: Jika / If $a^2 - b^2 = (a - b)(a + b)$, maka / then $a^2 - b^2 = (a - b)^2$</p> <p>Songsangan / Inverse: Jika / If $a^2 - b^2 \neq (a - b)^2$, maka / then $a^2 - b^2 \neq (a - b)(a + b)$</p>	1 1 1 1	4

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
7	 <p>Jarak terdekat / <i>Shortest distance</i> = 6 km + 5.3 km = 11.3 km</p>	2 1	3
8	(a) Petrol (terima jawapan lain yang munasabah) (<i>accept other reasonable answers</i>)	1	4
	(b) Jumlah pendapatan – Jumlah perbelanjaan <i>Total income – Total expenses</i> = RM1 700 + RM987.60 – (RM2 350 + RM860.90) = –RM523.30 (Aliran tunai negatif / <i>Negative cash flow</i>)	2 1	
9	P(Sekurang-kurangnya seorang ahli perempuan dipilih) <i>P(At least one girl member is chosen)</i> $= \left(\frac{2}{6} \times \frac{2}{6}\right) + \left(\frac{2}{6} \times \frac{4}{6}\right) + \left(\frac{4}{6} \times \frac{2}{6}\right)$ $= \frac{5}{9}$	2 1	3
10	(a) Ubahan langsung <i>Direct variation</i>	1	5
	(b) (i) $y \propto x$ $y = kx$ $15 = k(6)$ $k = \frac{5}{2}$ $y = \frac{5}{2}x$ (ii) $40 = \frac{5}{2}x$ $x = 16$	1 1 1 1	

Bahagian B

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
11	(a) Premium asas / <i>Basic premium</i> = RM339.10 + RM26 × $\frac{90\,000 - 1\,000}{1\,000}$ = RM2 653.10 NCD = RM2 653.10 × 55% = RM1 459.21 Premium kasar / <i>The gross premium</i> = RM2 653.10 – RM1 459.21 = RM1 193.89	2 1 1 1 1	

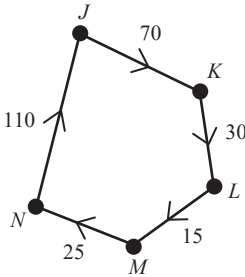
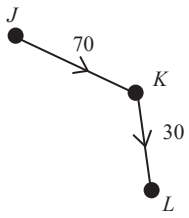
No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
	<p>(b) Wang yang dapat dikumpul setiap bulan <i>Money saved every month</i> = Wang saku mingguan + Upah kerja sambilan – Perbelanjaan persekolahan <i>Weekly pocket money + Part-time wages – School expenses</i> = $4 \times \text{RM}50 + 4 \times \text{RM}20 - 20 \times \text{RM}5$ = RM180</p> <p>Jumlah simpanan setelah 6 bulan / <i>Total savings after 6 months</i> = $\text{RM}180 \times 6 + \text{RM}200$ = RM1 280</p> <p>Jumlah simpanan – Yuran penyertaan <i>Total savings – Admission fee</i> = $\text{RM}1\ 280 - \text{RM}1\ 200$ = RM80</p> <p>Jamal dapat mengumpul wang untuk membayar yuran penyertaan ekspedisi itu. <i>Jamal can save enough money to pay the expedition fee.</i></p>	<p>1</p> <p>1</p> <p>1</p>	<p>9</p>
12	<p>(a) (i) 10 minit / <i>minutes</i> (ii) 20 km</p> <p>(b) (i) Laju / <i>Speed</i> = $\frac{50 - 30}{\left(\frac{50}{60}\right)}$ = $24 \text{ km j}^{-1} / \text{km h}^{-1}$</p> <p>(ii) Katakan jarak motosikal Sam dari Parit Buntar pada minit ke 62.5 = J <i>Let distance of Sam's motorcycle from Parit Buntar at 62.5th minute = J</i> $\frac{J - 30}{62.5 - 50} = \frac{50 - 30}{100 - 50}$ $\frac{J - 30}{12.5} = 0.4$ $J - 30 = 5$ $J = 35 \text{ km}$</p> <p>(c) $\frac{50}{\left(\frac{t}{60}\right)} = \frac{50}{\left(\frac{100}{60}\right)} + 10$ $\frac{50}{\left(\frac{t}{60}\right)} = 40$ $\frac{t}{60} = 1.25$ $t = 75 \text{ minit / minutes}$</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p>	<p>9</p>
13	<p>(a) $JK = \begin{pmatrix} 2 \\ 5 \end{pmatrix} \begin{pmatrix} 4 & -3 \end{pmatrix}$ $= \begin{pmatrix} 2 \times 4 & 2 \times (-3) \\ 5 \times 4 & 5 \times (-3) \end{pmatrix}$ $= \begin{pmatrix} 8 & -6 \\ 20 & -15 \end{pmatrix}$ $\therefore 2 \times 2$</p>	<p>1</p> <p>1</p>	

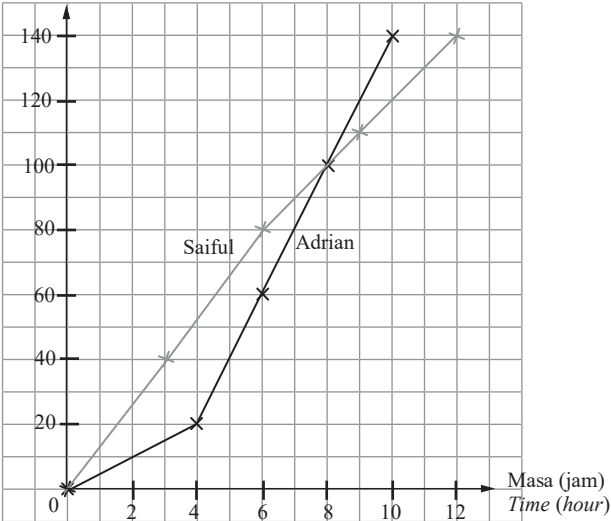
No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks							
	<p>(b) (i) Katakan umur Rokiah / <i>Let the age of Rokiah = R</i> Katakan umur Nuha / <i>Let the age of Nuha = N</i></p> $R = 3N$ $R - 3N = 0 \dots\dots\dots \textcircled{1}$ $\frac{R + N}{2} = 36$ $R + N - 72 = 0 \dots\dots\dots \textcircled{2}$ <p>(ii) $R - 3N = 0$ $R + N = 72$</p> $\begin{pmatrix} 1 & -3 \\ 1 & 1 \end{pmatrix} \begin{pmatrix} R \\ N \end{pmatrix} = \begin{pmatrix} 0 \\ 72 \end{pmatrix}$ $\begin{pmatrix} R \\ N \end{pmatrix} = \frac{1}{(1)(1) - (-3)(1)} \begin{pmatrix} 1 & 3 \\ -1 & 1 \end{pmatrix} \begin{pmatrix} 0 \\ 72 \end{pmatrix}$ $= \frac{1}{4} \begin{pmatrix} 216 \\ 72 \end{pmatrix}$ $= \begin{pmatrix} 54 \\ 18 \end{pmatrix}$ <p>$R = 54$ $N = 18$</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>8</p>							
14	<p>(a) (i) Pembesaran pada pusat $(2, -4)$ dengan faktor skala $-\frac{1}{2}$. <i>Enlargement at the centre of $(2, -4)$ with the scale factor of $-\frac{1}{2}$.</i></p> <p>(ii) Putaran 180° pada asalan. <i>Rotation of 180° at the origin.</i></p> <p>(b) Luas imej = $k^2 \times$ Luas objek <i>Area of image = $k^2 \times$ Area of object</i></p> $MNQSTU = \left(-\frac{1}{2}\right)^2 \times 125 \text{ cm}^2$ $= 31.25 \text{ cm}^2$	<p>3</p> <p>3</p> <p>2</p> <p>1</p>	<p>9</p>							
15	<p>(a)</p> <table border="1" data-bbox="232 1281 482 1728"> <thead> <tr> <th data-bbox="232 1281 482 1368">Titik tengah Midpoint</th> </tr> </thead> <tbody> <tr> <td data-bbox="232 1368 482 1426">3.5</td> </tr> <tr> <td data-bbox="232 1426 482 1485">5.5</td> </tr> <tr> <td data-bbox="232 1485 482 1544">7.5</td> </tr> <tr> <td data-bbox="232 1544 482 1603">9.5</td> </tr> <tr> <td data-bbox="232 1603 482 1662">11.5</td> </tr> <tr> <td data-bbox="232 1662 482 1728">13.5</td> </tr> </tbody> </table>	Titik tengah Midpoint	3.5	5.5	7.5	9.5	11.5	13.5	<p>1</p>	
Titik tengah Midpoint										
3.5										
5.5										
7.5										
9.5										
11.5										
13.5										

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
(b)	<p>(i) Min / Mean</p> $\frac{(11 \times 1.5) + (12 \times 3.5) + (19 \times 5.5) + (18 \times 7.5) + (20 \times 9.5) + (12 \times 11.5) + (8 \times 13.5)}{100}$ $= 7.34$ <p>(ii) $\sigma = \sqrt{\frac{\sum fx^2}{\sum f} - \bar{x}^2}$</p> $= \sqrt{\frac{(11 \times 1.5^2) + (12 \times 3.5^2) + (19 \times 5.5^2) + (18 \times 7.5^2) + (20 \times 9.5^2) + (12 \times 11.5^2) + (8 \times 13.5^2)}{100} - 7.34^2}$ $= 3.49$	1 1 2 1	10
(c)	<p>Bilangan murid Number of students</p> <p>Masa (minit) Time (minutes)</p>	4	

Bahagian C

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
16	<p>(a)</p>	3	

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks								
	<p>(b) (i) $Q = RM655 \times \frac{100}{10}$ $= RM6\ 550$ Jumlah pendapatan / Total income $= RM6\ 550 + RM350$ $= RM6\ 900$</p> <p>(ii) Aliran tunai / Cash flow $= RM6\ 550 + RM350 - RM655 - RM300 - RM900 - RM1\ 050 -$ $RM600 - RM600 - RM500 - RM1\ 000 - RM500$ $= RM795$</p> <p>Aliran tunai Hayati adalah positif, iaitu lebihan RM795. <i>Hayati's cash flow is positive, having surplus RM795.</i></p> <p>(c)</p> <table border="1" data-bbox="235 617 978 917"> <tr> <td data-bbox="235 617 299 691">M</td> <td data-bbox="299 617 978 691">Membayar RM2 800 <i>Pay RM2 800</i></td> </tr> <tr> <td data-bbox="235 691 299 766">A</td> <td data-bbox="299 691 978 766">RM2 800 boleh dibayar dalam 5 bulan <i>RM2 800 can be paid within 5 months</i></td> </tr> <tr> <td data-bbox="235 766 299 842">R</td> <td data-bbox="299 766 978 842">Simpanan 5 bulan adalah sebanyak RM3 975 <i>Savings of 5 months is RM3 975</i></td> </tr> <tr> <td data-bbox="235 842 299 917">T</td> <td data-bbox="299 842 978 917">Dalam 5 bulan <i>Within 5 months</i></td> </tr> </table> <p>Hayati mencapai matlamatnya kerana dia mempunyai lebihan RM1 175 selepas membayar RM2 800. <i>Hayati achieved her goal because she had surplus of RM1 175 after paying RM2 800.</i></p>	M	Membayar RM2 800 <i>Pay RM2 800</i>	A	RM2 800 boleh dibayar dalam 5 bulan <i>RM2 800 can be paid within 5 months</i>	R	Simpanan 5 bulan adalah sebanyak RM3 975 <i>Savings of 5 months is RM3 975</i>	T	Dalam 5 bulan <i>Within 5 months</i>	<p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>15</p>
M	Membayar RM2 800 <i>Pay RM2 800</i>										
A	RM2 800 boleh dibayar dalam 5 bulan <i>RM2 800 can be paid within 5 months</i>										
R	Simpanan 5 bulan adalah sebanyak RM3 975 <i>Savings of 5 months is RM3 975</i>										
T	Dalam 5 bulan <i>Within 5 months</i>										
17	<p>(a) (i)</p>  <p>(Terima mana-mana jawapan yang munasabah) <i>(Accept any reasonable answers)</i></p> <p>(ii)</p>  <p>(Terima mana-mana jawapan yang munasabah) <i>(Accept any reasonable answers)</i></p>	<p>3</p> <p>1</p>									

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
(b) (i)	<p>Jarak (km) Distance (km)</p>  <p>Masa (jam) Time (hour)</p> <p>(ii) Laju / Speed = $\frac{140 - 110}{12 - 9}$ = 10 km j⁻¹ / km h⁻¹</p> <p>(iii) 100 km</p>	3 1 1 1	
(c) (i)	<p>RM30 000 – RM600 = RM29 400 RM29 400 × $\frac{20}{100}$ + RM600 = RM6 480</p> <p>(ii) RM0 Kos rawatan RM450 adalah kurang daripada deduktibel RM600. <i>The treatment cost of RM450 is less than the deductible of RM600.</i></p>	1 1 1 1 1	15

KERTAS 1

1 **D**

$$7(-15 + 20) + \frac{3}{5} \div 2.5 = 35 + 0.24$$

$$= \frac{881}{25}$$

2 **D**

A: 1, 4, 9, 16, ...

$$\begin{array}{cccc} & +3 & +5 & +7 \\ & \curvearrowright & \curvearrowright & \curvearrowright \\ 1 & & 4 & 9 & 16 & \dots \end{array}$$

B: 2, 4, 6, 8, ...

$$\begin{array}{cccc} & +2 & +2 & +2 \\ & \curvearrowright & \curvearrowright & \curvearrowright \\ 2 & & 4 & 6 & 8 & \dots \end{array}$$

C: 3, 6, 9, 12, ...

$$\begin{array}{cccc} & +3 & +3 & +3 \\ & \curvearrowright & \curvearrowright & \curvearrowright \\ 3 & & 6 & 9 & 12 & \dots \end{array}$$

D: 4, 8, 16, 32, ...

$$\begin{array}{cccc} & \times 2 & \times 2 & \times 2 \\ & \curvearrowright & \curvearrowright & \curvearrowright \\ 4 & & 8 & 16 & 32 & \dots \end{array}$$

3 **B**

$$\frac{3^8 \times 2^4}{12} = 8\,748$$

A: $3^7 \times 2 = 4\,374$

B: $3^7 \times 2^2 = 8\,748$

C: $3^9 \times 2^2 = 78\,732$

D: $3^9 \times 2^6 = 1\,259\,712$

4 **C**

A: 3 029 016 = 3.03 juta / millions

B: 2 905 421 = 2.91 juta / millions

C: 4 260 572 = 4.26 juta / millions

D: 5 118 396 = 5.12 juta / millions

5 **D**

$$1 \times 2^3 + 1 \times 2^2 + 1 \times 2^0 = 1101_2$$

6 **A**

$$245_8 = 165_{10}$$

$$165 \times \frac{100}{60} = 275$$

$$275_{10} = 423_8$$

$$\begin{array}{r|l} 8 & 275 & -3 & \uparrow \\ \hline 8 & 34 & -2 & \\ \hline 8 & 4 & -4 & \\ \hline & 0 & & \end{array}$$

7 **C**

Wang pendahuluan = RM63 000 – RM50 000

Down payment

$$= \text{RM}13\,000$$

Jumlah minimum simpanan = (RM13 000 – RM10 500) ÷ 5

Minimum amount of the saving

$$= \text{RM}2\,500 \div 5$$

$$= \text{RM}500$$

8 D

Jumlah cukai pintu = kadar cukai pintu \times nilai tahunan

$$\begin{aligned} \text{Total amount of the property assessment tax} &= \text{property assessment tax rate} \times \text{annual value} \\ &= 1.5 \times 6\% \times \text{RM5 820} \\ &= \text{RM523.80} \end{aligned}$$

9 D

Premium asas = RM151.20

Basic premium

$$\text{Premium kasar} = \text{RM151.20} \times \frac{55}{100}$$

Gross premium

$$= \text{RM83.16}$$

10 D

$$\begin{aligned} (x + 3y)(y - 3x) &= xy - 3x^2 + 3y^2 - 9xy \\ &= 3y^2 - 8xy - 3x^2 \end{aligned}$$

11 A

$$V = \pi r^2 h$$

$$r^2 = \frac{V}{\pi h}$$

$$r = \sqrt{\frac{V}{\pi h}}$$

12 B

$$OR = \frac{3}{4} OS$$

$$OR = \frac{3}{4} (8)$$

$$OR = 6$$

$$m = -\frac{\text{pintasan-}y / y\text{-intercept}}{\text{pintasan-}x / x\text{-intercept}}$$

$$= -\frac{6}{8}$$

$$= -\frac{3}{4}$$


13 C

$$y = ax^2 + 9x + c$$

$$y = -x^2 + 9x - 18$$

$$y = -(x^2 - 9x + 18)$$

$$y = -(x - 3)(x - 6)$$

$a = -1$, bentuk / shape 

$x = 3$ atau / or $x = 6$

14 A

$2x$ lebih berat daripada $y + 5$.

$2x$ is heavier than $y + 5$.

15 C

A: $y \leq 0$ dan $y \geq -x$ adalah salah.

$y \leq 0$ and $y \geq -x$ are wrong.

B: $y \leq 0$, $y \geq -x$, $y < x - 3$ dan $x < 5$ adalah salah.

$y \leq 0$, $y \geq -x$, $y < x - 3$ and $x < 5$ are wrong.

D: $y \geq -x$, $y < x - 3$ dan $x < 5$ adalah salah.

$y \geq -x$, $y < x - 3$ and $x < 5$ are wrong.

16 B

$$\text{Kadar perubahan laju} = -\frac{v-0}{12-3}$$

The rate of change of speed

$$-14\frac{2}{3} = -\frac{v}{9}$$

$$\frac{44}{3} = \frac{v}{9}$$

$$v = 132 \text{ m s}^{-1}$$

17 D

$$x \propto y^2$$

$$x = ky^2$$

$$\frac{2}{5} = k\left(\frac{1}{2}\right)^2$$

$$\frac{2}{5} = k\left(\frac{1}{4}\right)$$

$$k = \frac{8}{5}$$

$$x = \frac{8}{5}y^2$$

18 C

$$R \propto \frac{1}{j^2}$$

$$R = \frac{k}{j^2}$$

$$0.5 = \frac{k}{0.1^2}$$

$$k = \frac{1}{200}$$

$$R = \frac{1}{200j^2}$$

$$2 = \frac{1}{200j^2}$$

$$j^2 = \frac{1}{400}$$

$$j = \sqrt{\frac{1}{400}}$$

$$j = \frac{1}{20}$$

$$j = 0.05$$

19 A

Katakan tinggi = t ,

Let height

Katakan isi padu = v ,

Let volume

Katakan jejari = j ,

Let radius

$$t \propto \frac{v}{j^2}$$

$$t = \frac{kv}{j^2}$$

$$7 = \frac{k(269.5)}{(3.5)^2}$$

$$k = \frac{7}{22}$$

$$t = \frac{7v}{22j^2}$$

$$21 = \frac{7v}{22j^2}$$

$$21 = \frac{7(1\,996.5)}{22j^2}$$

$$j^2 = 30.25$$

$$j = \sqrt{30.25}$$

$$j = 5.5 \text{ cm}$$

20 A

$$M + \begin{bmatrix} 4 & 6 \\ -3 & -15 \end{bmatrix} = \begin{bmatrix} 17 & -10 \\ 6 & -5 \end{bmatrix}$$

$$M = \begin{bmatrix} 17 & -10 \\ 6 & -5 \end{bmatrix} - \begin{bmatrix} 4 & 6 \\ -3 & -15 \end{bmatrix}$$

$$M = \begin{bmatrix} 17-4 & -10-6 \\ 6-(-3) & -5-(-15) \end{bmatrix}$$

$$M = \begin{bmatrix} 13 & -16 \\ 9 & 10 \end{bmatrix}$$

21 A

$$P = Q$$

$$\begin{bmatrix} 5 & x+y \\ x & z \end{bmatrix} = \begin{bmatrix} 5 & 8 \\ 6 & x-y \end{bmatrix}$$

$$x = 6$$

$$x + y = 8$$

$$6 + y = 8$$

$$y = 8 - 6$$

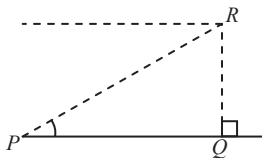
$$y = 2$$

$$z = x - y$$

$$z = 6 - 2$$

$$z = 4$$

22 A



$\angle QPR$

23 B

$$\text{Isi padu kon} = \frac{1}{3} \pi j^2 t$$

$$\text{Volume of cone} = \frac{1}{3} \pi r^2 h$$

$$\text{Isi padu hemisfera} = \frac{2}{3} \pi j^3$$

$$\text{Volume of hemisphere} = \frac{2}{3} \pi r^3$$

Isi padu gabungan pepejal

Volume of the combined solid

$$\begin{aligned} &= \frac{1}{3} \pi j^2 t + \frac{2}{3} \pi j^3 \\ &= \frac{1}{3} \left(\frac{22}{7} \right) (3)^2 (7) + \frac{2}{3} \left(\frac{22}{7} \right) (3)^3 \\ &= 66 + 56 \frac{4}{7} \\ &= 122 \frac{4}{7} \text{ cm}^3 \end{aligned}$$

24 C

$$\begin{aligned} x &= \angle L J N + \angle J L M \\ &= 60^\circ + 32^\circ \\ &= 92^\circ \end{aligned}$$

25 D

$P \rightarrow S$: Pantulan / Reflection

$S \rightarrow R$: Translasi / Translation

26 A

$$k = \frac{\text{panjang sisi imej / a side of an image}}{\text{panjang sisi objek / a side of an object}}$$

$$k = \frac{3}{6}$$

$$k = \frac{1}{2}$$

Arah bertentangan, $\therefore k = -\frac{1}{2}$
Opposite direction

27 C

$$\sin x = -\frac{\sqrt{3}}{2}$$

$$x = -60^\circ$$

$$x = 180^\circ - 60^\circ$$

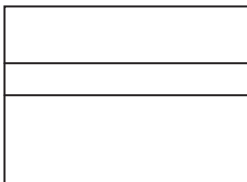
$$x = 120^\circ$$

$$\tan 60^\circ = \frac{m}{n}$$

$$m = n \tan 60^\circ$$

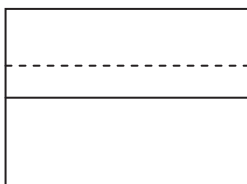
28 B

A:



← Salah / Wrong

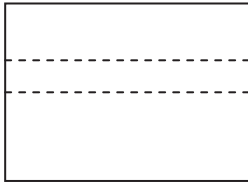
C:



← Salah / Wrong

← Salah / Wrong

D:



← Salah / Wrong

29 D

A: $(a - b)^2 = a^2 - b^2$ (Palsu / False)

B: $m - 7 = 4$ (Bukan pernyataan / Not a statement)

C: $(-2)^2 = -4$ (Palsu / False)

D: $\{3, 6, 9\} \cap \{9, 16\} = \{9\}$ (Benar / True)

30 B

	Bentuk III Form III
Premis 1 <i>Premise 1</i>	Jika p , maka q <i>If p, then q</i>
Premis 2 <i>Premise 2</i>	Bukan q adalah benar <i>Not q is true</i>
Kesimpulan <i>Conclusion</i>	Bukan p adalah benar <i>Not p is true</i>

$p: x = 3$

$q: x + 2 = 5$

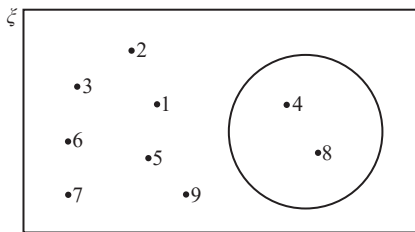
\therefore Jika $x = 3$ maka $x + 2 = 5$

If $x = 3$ then $x + 2 = 5$

31 C

$\zeta = \{1, 2, 3, 4, 5, 6, 7, 8, 9\}$

Set $P = \{4, 8\}$



32 A

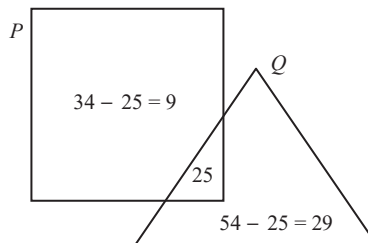
$$n(P) + n(Q) = 34 + 54$$

$$= 88$$

$$n(P \cap Q) = 88 - n(P \cup Q)$$

$$= 88 - 63$$

$$= 25$$



33 C

$$\begin{aligned} \text{A: } P_1 \rightarrow P_2 \rightarrow P_3 \rightarrow P_7 \\ &= 70 \text{ km} + 40 \text{ km} + 30 \text{ km} \\ &= 140 \text{ km} \end{aligned}$$

$$\begin{aligned} \text{B: } P_1 \rightarrow P_2 \rightarrow P_6 \rightarrow P_7 \\ &= 70 \text{ km} + 90 \text{ km} + 60 \text{ km} \\ &= 220 \text{ km} \end{aligned}$$

$$\begin{aligned} \text{C: } P_1 \rightarrow P_4 \rightarrow P_2 \rightarrow P_7 \\ &= 40 \text{ km} + 50 \text{ km} + 80 \text{ km} \\ &= 170 \text{ km} \end{aligned}$$

$$\begin{aligned} \text{D: } P_1 \rightarrow P_4 \rightarrow P_5 \rightarrow P_7 \\ &= 40 \text{ km} + 30 \text{ km} + 50 \text{ km} \\ &= 120 \text{ km} \end{aligned}$$

34 A

$$\begin{aligned} \text{Sudut sektor} &= \frac{18.42}{9.18 + 18.42 + 1.36} \times 360^\circ \\ \text{Angle of sector} &= 229^\circ \end{aligned}$$

35 B

Skor <i>Score</i>	2	3	4	5
Kekerapan <i>Frequency</i>	3	8	7	4

$$\begin{aligned} \text{Min skor baharu} &= \frac{(2 \times 3) + (3 \times 8) + (4 \times 7) + (5 \times 4)}{3 + 8 + 7 + 4} \\ \text{New mean score} &= \frac{78}{22} \\ &= 3.55 \end{aligned}$$

36 B

Kebarangkalian memilih sebiji guli bukan berwarna hijau / *Probability of choosing marble that is not green*

$$\begin{aligned} &= \frac{6 + 4}{6 + 4 + 9} \\ &= \frac{10}{19} \end{aligned}$$

37 D

Kotak *Q* tidak mengandungi bola biru.
Box Q does not consist of blue balls.

38 D

$$\begin{aligned} x + 5 + x + 2x + 3 &= 40 \\ 4x + 8 &= 40 \\ 4x &= 32 \\ x &= 8 \end{aligned}$$

Kebarangkalian peserta mengambil bahagian dalam kedua-dua kuiz = $\frac{8}{40}$
Probability of the participant takes part in both quizzes

$$= \frac{1}{5}$$

39 B

A: Titik 60 dan 80 adalah salah

Points 60 and 80 are wrong

C: 65 bukan median

65 is not a median

D: Titik 35 dan 85 adalah salah

Points 35 and 85 are wrong

40 B

$$\text{Persentil ke-40} = \frac{40}{100} \times 60$$

40th percentile

$$= 24$$

Dari graf, markah ialah 61.5.

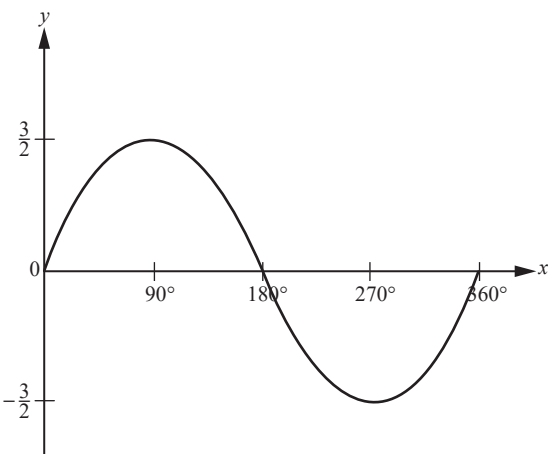
From the graph, the marks is 61.5.

KERTAS 2

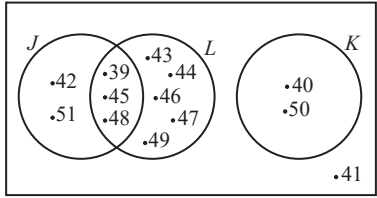
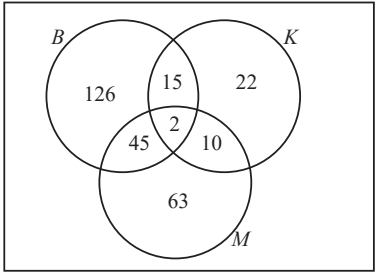
Bahagian A

No.	Skema Pemarkahan <i>Marking Scheme</i>	Markah <i>Marks</i>	Markah Total <i>Total Marks</i>
1	<p>(a)</p> <p>R ditanda di (3, 6) atau (3, -4). <i>R is marked at (3, 6) or (3, -4).</i></p>	1	3
	<p>(b) Jarak antara titik R dan titik Q <i>Distance between points R and Q</i></p> $= \sqrt{[3 - (-2)]^2 + (6 - 1)^2} \text{ atau / or } \sqrt{[3 - (-2)]^2 + (-4 - 1)^2}$ <p>= 7.07 unit</p>	1 1	
2	<p>(a) $Q_1 = 5$</p>	1	3
	<p>(b) Julat antara kuartil / <i>Interquartile range</i></p> $= Q_3 - Q_1$ $= 16 - 5$ $= 11$	1 1	

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
3	(a) Akas: Jika $2x - 3 = 5$, maka $x = 4$. <i>Converse: If $2x - 3 = 5$, then $x = 4$.</i>	1	4
	Kontrapositif: Jika $2x - 3 \neq 5$, maka $x \neq 4$. <i>Contrapositive: If $2x - 3 \neq 5$, then $x \neq 4$.</i>	1	
	(b) $8(n)^2 - 4$, $n = 1, 2, 3, 4, \dots$	2	
4	(a) Y: Menilai kedudukan kewangan. <i>Evaluating financial status.</i>	1	4
	(b) Aliran tunai / <i>Cash flow</i> $= \text{RM}8\,500 + \text{RM}1\,200 - \left(\frac{12}{100} \times 8\,500\right) - \text{RM}4\,350 - \text{RM}3\,610$ $= \text{RM}720$	2 1	
5	$\left[\frac{1}{2}(50 + QP)(24)\right] - (10 \times 8) = 628$ $600 + 12QP = 708$ $QP = 9 \text{ m}$	2	3
		1	
6	(a) $\frac{80}{100} \times 300\,000 = 240\,000$ Bayaran pampasan / <i>Amount of compensation</i> $= \frac{\text{Jumlah insurans yang telah dibeli}}{\text{Jumlah insurans yang harus dibeli}} \times \text{Jumlah kerugian} - \text{Deduktibel}$ $= \frac{\text{Amount of insurance purchased}}{\text{Amount of insurance to be purchased}} \times \text{Total loss} - \text{Deductible}$ $= \frac{200\,000}{240\,000} \times 30\,000 - 2\,500$ $= \text{RM}22\,500$	1 1 1	4
	(b) Penalti ko-insurans / <i>Co-insurance penalty</i> $= 30\,000 - \left(\frac{200\,000}{240\,000} \times 30\,000\right)$ $= \text{RM}5\,000$	1	
7	Luas kolam renang – Luas bahagian kanak-kanak = Luas bahagian dewasa <i>Area of the swimming pool – Area of children's section = Area of adults' section</i> $\left[(7x - 2)\left(2 \times \frac{5}{2}x\right)\right] - 12\frac{4}{7} = 107\frac{3}{7}$ $35x^2 - 10x - 120 = 0$ $(7x + 12)(x - 2) = 0$ $x = -\frac{12}{7}$ atau / or $x = 2$ $\therefore x = 2$	1	4
		1	
		1	
		1	
8	Katakan pelitup muka = m <i>Let face mask = m</i> Katakan pensanitasi tangan = k <i>Let hand sanitizer = k</i> $3m + 4k = 148.40$ $2(2m + 6k) = 301.20$ $4m + 12k = 301.20$	1	

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
	$\begin{bmatrix} 3 & 4 \\ 4 & 12 \end{bmatrix} \begin{bmatrix} m \\ k \end{bmatrix} = \begin{bmatrix} 148.40 \\ 301.20 \end{bmatrix}$ $\begin{bmatrix} m \\ k \end{bmatrix} = \frac{1}{(3)(12) - (4)(4)} \begin{bmatrix} 12 & -4 \\ -4 & 3 \end{bmatrix} \begin{bmatrix} 148.40 \\ 301.20 \end{bmatrix}$ $\begin{bmatrix} m \\ k \end{bmatrix} = \frac{1}{20} \begin{bmatrix} (12 \times 148.40) + (-4 \times 301.20) \\ (-4 \times 148.40) + (3 \times 301.20) \end{bmatrix}$ $\begin{bmatrix} m \\ k \end{bmatrix} = \frac{1}{20} \begin{bmatrix} 576 \\ 310 \end{bmatrix}$ $\begin{bmatrix} m \\ k \end{bmatrix} = \begin{bmatrix} 28.8 \\ 15.5 \end{bmatrix}$ <p>$m = \text{RM}28.80$ $k = \text{RM}15.50$</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	<p>5</p>
9	<p>(a) (i) $M' = (3, 0)$</p> <p>(ii) Putaran lawan arah jam pada pusat $(-4, 2)$. <i>Anticlockwise rotation at centre $(-4, 2)$.</i></p> <p>atau / or</p> <p>Putaran ikut arah jam pada pusat $(1, -7)$. <i>Clockwise rotation at centre $(1, -7)$.</i></p> <p>(b) Translasi / Translation $\begin{pmatrix} 11 \\ 11 \end{pmatrix}$</p> <p>atau / or</p> <p>Pantulan pada garis $y = -x$. <i>Reflection on line $y = -x$.</i></p>	<p>1</p> <p>2</p> <p>2</p>	<p>5</p>
10	<p>(a)</p>  <p>(b) (i) $PR = \sqrt{30^2 + 15^2}$ $= 33.54 \text{ cm}$</p> <p>(ii) $\cos / \cos y^\circ = \frac{30}{33.54}$ (Sukuan / <i>Quadrant II</i>) $\cos / \cos y^\circ = -0.89$</p>	<p>2</p> <p>1</p> <p>1</p> <p>1</p>	<p>5</p>

Bahagian B

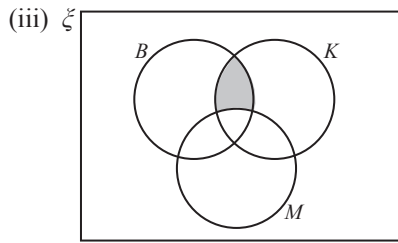
No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
11	<p>(a) (i) $2y = -3x + 8$ $y = -\frac{3}{2}x + 4$ $m = -\frac{3}{2}$</p> <p>(ii) $2(0) = -3x + 8$ $x = \frac{8}{3}$ \therefore Pintasan-x / x-intercept $= \frac{8}{3}$</p>	1 1 1	8
	<p>(b) (i) $m = \frac{3-2}{0-(-2)}$ $= \frac{1}{2}$ $y = mx + c$ $y = \frac{1}{2}x + 3$ $y = \frac{1}{2}(8) + 3$ $y = 7$ Koordinat zoo / The coordinates of zoo = (8, 7)</p> <p>(ii) $7 = -\frac{1}{4}(8) + c$ $c = 9$ $y = -\frac{1}{4}x + 9$</p>	1 1 1 1	
12	<p>(a) (i) $J = \{39, 42, 45, 48, 51\}$ $L = \{39, 43, 44, 45, 46, 47, 48, 49\}$</p> <p>(ii) ζ</p> 	1 1 3	8
	<p>(b) (i) ζ</p>  <p>(ii) Bilangan responden yang tidak memilih sebarang syarikat penerbangan <i>Number of respondents who do not choose any airlines</i> $= 300 - 126 - 15 - 22 - 2 - 45 - 10 - 63$ $= 17$</p>	2 1 1	

No.

Skema Pemarkahan
Marking Scheme

Markah
Marks

Markah Total
Total Marks



$$(B \cap K) \cap M' = 15$$

1

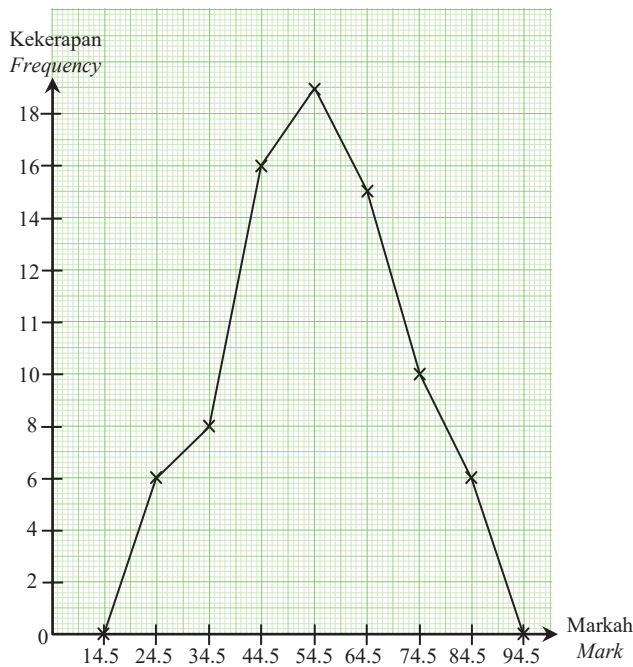
10

13 (a) (i)

Kekerapan <i>Frequency</i>
0
6
8
16
19
15
10
6
0

2

(ii)



4

(b) (i)

$$x = \sqrt{\frac{6(24.5)^2 + 8(34.5)^2 + 16(44.5)^2 + 19(54.5)^2 + 15(64.5)^2 + 10(74.5)^2 + 6(84.5)^2}{80}} - 54.75^2$$

$$= 16.65$$

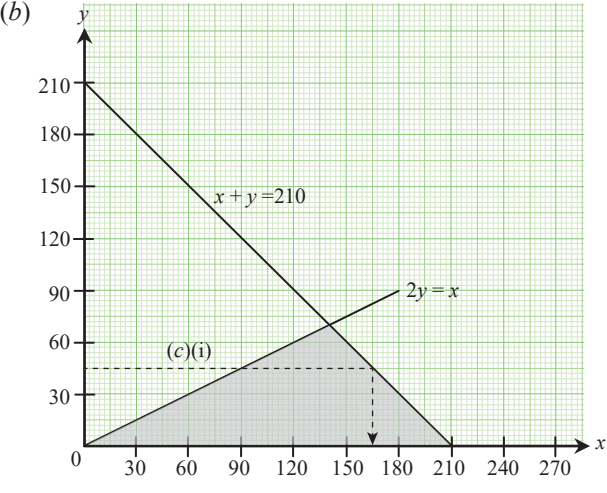
2

1

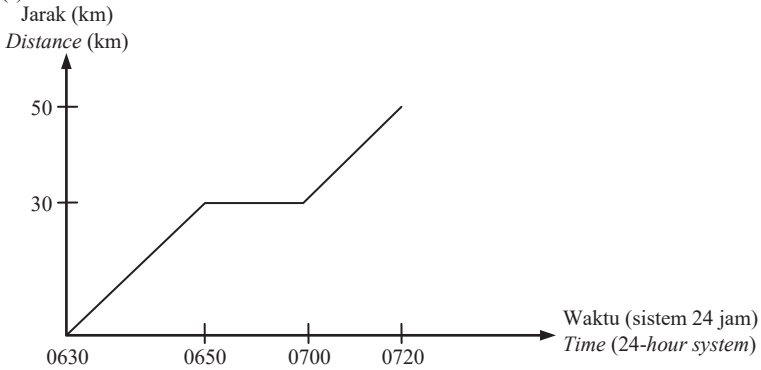
(ii) Prestasi murid pada tahun 2021 lebih konsisten.
The students performance in 2021 is more consistent.

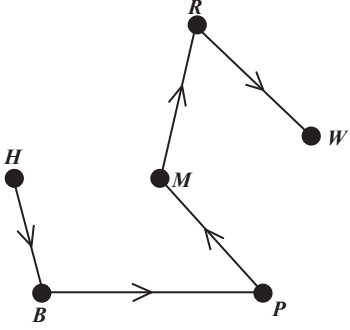
1

9

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
14	<p>(a) $x + y \leq 210$ $x \geq 2y$</p> <p>(b) </p> <p>(c) (i) Bilangan maksimum murid sekolah menengah = 165 <i>The maximum number of secondary school students</i></p> <p>(ii) Jumlah yuran minimum yang diterima penganjur <i>Total minimum fees received by the organiser</i> = $(90 \times \text{RM}150) + (45 \times \text{RM}120)$ = RM18 900</p>	<p>1 1</p> <p>4</p> <p>1 1</p>	<p>9</p>
15	<p>(a) Pendapatan bercukai Encik Farqan / <i>Encik Farqan's chargeable income</i> = RM77 600 – RM12 600 – RM9 000 – RM3 360 – RM2 500 = RM50 140</p> <p>(b) Cukai pendapatan / <i>Income tax</i> = $\text{RM}1\,800 + \left[(\text{RM}50\,140 - \text{RM}50\,000) \times \frac{13}{100} \right] - \text{RM}840$ = $\text{RM}1\,800 + \text{RM}18.20 - \text{RM}840$ = RM978.20</p> <p>(c) (i) Potongan cukai bulanan (PCB) pada tahun tersebut <i>Monthly tax deduction (PCB) in that year</i> = $\text{RM}120 \times 12$ = RM1 440</p> <p>Tidak perlu, RM1 440 melebihi RM978.20. <i>No need, RM1 440 exceeds RM978.20.</i></p> <p>(ii) LHDN perlu memulangkan lebih kepada Encik Farqan. <i>IRB should refund the excess deduction to Encik Farqan.</i></p>	<p>1 1</p> <p>2 1</p> <p>1 1 1</p>	<p>8</p>

Bahagian C

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
16	(a) (i) $15 : 18 = 5 : 6$	1	
	(ii) $18x + 15(14) = 390$ $18x = 390 - 210$ $x = \frac{180}{18}$ $x = 10$	1	
	(b) (i)	3	
		1	
	(ii) Laju van / Speed of the van $= \frac{30 - 0}{50 - 30}$ $= \frac{3}{2} \text{ km min}^{-1}$	1	
	(c) Min / Mean $= \frac{23(2) + 24(2) + 26(3) + 28(4) + 30(2) + 32(2) + 35(2) + 36(4) + 38(3)}{2 + 2 + 3 + 4 + 2 + 2 + 2 + 4 + 3}$ $= 30 \frac{2}{3}$ \therefore Setuju dengan kenyataan pemain tersebut. <i>Agree with the player's statement.</i>	2 1 1	
(d) Kebarangkalian pasukan lelaki $= \left(\frac{2}{5} \times \frac{7}{15}\right) + \left(\frac{3}{5} \times \frac{8}{15}\right) + \left(\frac{2}{5} \times \frac{8}{15}\right)$ <i>Probability of boys team</i> $= \frac{54}{75}$ Kebarangkalian pasukan perempuan $= \left(\frac{3}{7} \times \frac{5}{8}\right) + \left(\frac{4}{7} \times \frac{3}{8}\right) + \left(\frac{3}{7} \times \frac{3}{8}\right)$ <i>Probability of girls team</i> $= \frac{36}{56}$ Kedua-dua pasukan lelaki dan perempuan berpeluang ke peringkat seterusnya kerana kedua-dua kebarangkalian melebihi $\frac{3}{5}$. <i>Both boys and girls team get the chance to the next stage because both the probability exceeds $\frac{3}{5}$.</i>	1 1 1 1		
17	(a) (i) $25 \text{ km j}^{-1} / \text{ km h}^{-1}$ (ii) Jarak yang dilalui $= \frac{1}{2} \times 25 \times 0.5$ <i>Distance travelled</i> $= 6.25 \text{ km}$	1 1 1	15

No.	Skema Pemarkahan Marking Scheme	Markah Marks	Markah Total Total Marks
(b) (i)		2	
	(ii) Masa paling panjang = 17 + 15 + 72 + 10 + 45 minit / minutes The longest time	1	
	= 2 jam 39 minit / 2 hours 39 minutes	1	
(c)	Jarak kayuhan santai / Distance of the recreational ride $= 12.5 \text{ km} \times 1\,000$ $= 12\,500 \text{ m}$ Jejari tayar basikal R / Radius of tyre of bicycle R $= \left(\frac{1}{2} \times \frac{600 \text{ mm}}{1\,000} \right) + (3 \text{ cm} \div 100)$ $= 0.3 \text{ m} + 0.03 \text{ m}$ $= 0.33 \text{ m}$ Jejari basikal S / Radius of bicycle S $= \left[\left(\frac{3}{4} \times 0.6 \text{ m} \right) \div 2 \right] + (3 \text{ cm} \div 100)$ $= 0.225 \text{ m} + 0.03 \text{ m}$ $= 0.255 \text{ m}$ Beza bilangan putaran lengkap antara kedua-dua roda basikal itu Difference of the number of complete rotations between both bicycle wheels $= \left(\frac{12\,500 \text{ m}}{2 \times \frac{22}{7} \times 0.255} \right) - \left(\frac{12\,500 \text{ m}}{2 \times \frac{22}{7} \times 0.33} \right)$ $= 1\,772.403176$ $= 1\,772$	1	
(d)	Harga basikal di kedai TT Cycles / The price of a bicycle at TT Cycles shop $= \left(\frac{95}{100} \times 650 \right) + \left(\frac{85}{100} \times 650 \right)$ $= \text{RM}1\,170$ Harga basikal di kedai The Wheel / The price of a bicycle at The Wheel shop $= \left[\frac{85}{100} \times 2 \left(\frac{5\,500}{7.9} \right) \right] + \frac{790}{7.9}$ $= \frac{93\,500}{79} + 100$ $= \text{RM}1\,283.54$ Kedai TT Cycles akan menjadi pilihan Encik Faez kerana lebih murah. TT Cycles shop will be Encik Faez's choice because it is cheaper.	1	
		1	15