

NOMBOR DAN OPERASI NUMBER AND OPERATIONS

- 1 $a^m \times a^n = a^{m+n}$
- 2 $a^m \div a^n = a^{m-n}$
- 3 $(a^m)^n = a^{mn}$
- 4 $a^{\frac{1}{n}} = \sqrt[n]{a}$
- 5 $a^{\frac{m}{n}} = (a^{\frac{1}{n}})^m = (a^n)^{\frac{1}{m}}$
- 6 $a^{\frac{m}{n}} = \sqrt[n]{a^m} = (\sqrt[n]{a})^m$
- 7 Faedah mudah / *Simple Interest*, $I = Prt$
- 8 Nilai matang / *Maturity value*, $MV = P \left(1 + \frac{r}{n} \right)^{nt}$
- 9 Jumlah bayaran balik / *Total repayment*, $A = P + Prt$
- 10
$$\text{Premium} = \frac{\text{Nilai muka polisi}}{\text{RMx}} \times (\text{Kadar premium per RMx})$$
- 10
$$\text{Premium} = \frac{\text{Face value of policy}}{\text{RMx}} \times (\text{Premium rate per RMx})$$
- 11
$$\text{Jumlah insurans yang harus dibeli} = \left(\begin{array}{c} \text{Peratusan} \\ \text{ko-insurans} \end{array} \right) \times \left(\begin{array}{c} \text{Nilai boleh} \\ \text{insurans harta} \end{array} \right)$$
- 11
$$\text{Amount of required insurance} = \left(\begin{array}{c} \text{Percentage of} \\ \text{co-insurance} \end{array} \right) \times \left(\begin{array}{c} \text{Insurable value} \\ \text{of property} \end{array} \right)$$

PERKAITAN DAN ALGEBRA RELATIONSHIP AND ALGEBRA

- 1 $\text{Jarak / Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
- 4 $m = \frac{y_2 - y_1}{x_2 - x_1}$
- Titik Tengah / *Midpoint*
- 2 $(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
- 5 $m = -\frac{\text{pintasan } y}{\text{pintasan } x}$
- 5 $m = -\frac{y\text{-intercept}}{x\text{-intercept}}$
- 3 $\text{Laju Purata} = \frac{\text{Jumlah jarak}}{\text{Jumlah masa}}$
- 6 $A^{-1} = \frac{1}{ad - bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$
- 3 $\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$

SUKATAN DAN GEOMETRI
MEASUREMENT AND GEOMETRY

- 1 Teorem Pythagoras / *Pythagoras Theorem*, $c^2 = a^2 + b^2$
- 2 Hasil tambah sudut pedalaman poligon / *Sum of interior angles of a polygon*
 $= (n - 2) \times 180^\circ$
- 3 Lilitan bulatan $= \pi d = 2\pi r$
Circumference of circle $= \pi d = 2\pi r$
- 4 Luas bulatan $= \pi r^2$
Area of circle $= \pi r^2$
- 5 Panjang lengkok $= \frac{\theta}{360^\circ} \times 2\pi r$

$$\frac{\text{Arc length}}{2\pi r} = \frac{\theta}{360^\circ}$$
- 6 Luas sektor $= \frac{\theta}{360^\circ} \times \pi r^2$

$$\frac{\text{Area of sector}}{\pi r^2} = \frac{\theta}{360^\circ}$$
- 7 Luas layang $= \frac{1}{2} \times \text{hasil darab panjang dua pepenjuru}$
Area of kite $= \frac{1}{2} \times \text{product of two diagonals}$
- 8 Luas trapezium $= \frac{1}{2} \times \text{hasil tambah dua sisi selari} \times \text{tinggi}$
Area of trapezium $= \frac{1}{2} \times \text{sum of parallel sides} \times \text{height}$
- 9 Luas permukaan silinder $= 2\pi r^2 + 2\pi rh$
Surface area of cylinder $= 2\pi r^2 + 2\pi rh$
- 10 Luas permukaan kon $= \pi r^2 + \pi rs$
Surface area of cone $= \pi r^2 + \pi rs$
- 11 Luas permukaan sfera $= 4\pi r^2$
Surface area of sphere $= 4\pi r^2$
- 12 Isi padu prisma $= \text{luas keratan rentas} \times \text{tinggi}$
Volume of prism $= \text{cross sectional area} \times \text{height}$
- 13 Isi padu silinder $= \pi r^2 h$
Volume of cylinder $= \pi r^2 h$
- 14 Isi padu kon $= \frac{1}{3} \pi r^2 h$
Volume of cone $= \frac{1}{3} \pi r^2 h$

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- 15 Isi padu sfera = $\frac{4}{3}\pi r^3$
Volume of sphere = $\frac{4}{3}\pi r^3$
- 16 Isi padu piramid = $\frac{1}{3} \times \text{luas tapak} \times \text{tinggi}$
Volume of pyramid = $\frac{1}{3} \times \text{base area} \times \text{height}$
- 17 Faktor skala, $k = \frac{PA'}{PA}$
Scale factor, k = $\frac{PA'}{PA}$
- 18 Luas imej = $k^2 \times \text{luas objek}$
Area of image = $k^2 \times \text{area of object}$

STATISTIK DAN KEBARANGKALIAN
STATISTICS AND PROBABILITY

- 1 Min / Mean, $\bar{x} = \frac{\sum x}{N}$
- 2 Min / Mean, $\bar{x} = \frac{\sum fx}{\sum f}$
- 3 Varians / Variance, $\sigma^2 = \frac{\sum (x - \bar{x})^2}{N} = \frac{\sum x^2}{N} - \bar{x}^2$
- 4 Varians / Variance, $\sigma^2 = \frac{\sum f(x - \bar{x})^2}{\sum f} = \frac{\sum fx^2}{\sum f} - \bar{x}^2$
- 5 Sisihan piawai / Standard deviation, $\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} = \sqrt{\frac{\sum x^2}{N} - \bar{x}^2}$
- 6 Sisihan piawai / Standard deviation, $\sigma = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}} = \sqrt{\frac{\sum fx^2}{\sum f} - \bar{x}^2}$
- 7 $P(A) = \frac{n(A)}{n(S)}$
- 8 $P(A') = 1 - P(A)$

Bahagian A
Section A
[40 markah]
[40 marks]

Jawab **semua** soalan dalam bahagian ini.
*Answer **all** questions in this section.*

1 Diberi,

Set $\xi = \{x : 30 \leq x \leq 45, x \text{ ialah integer}\}$

Set $L = \{x : x \text{ ialah nombor yang hasil tambah digitnya adalah nombor genap}\}$

Set $M = \{x : x \text{ ialah nombor perdana}\}$

Given,

Set $\xi = \{x : 30 \leq x \leq 45, x \text{ is an integer}\}$

Set $L = \{x : x \text{ is a number that the sum of its digits is an even number}\}$

Set $M = \{x : x \text{ is a prime number}\}$

(a) Senaraikan unsur bagi set L .

List the elements for set L .

[1 markah]

[1 mark]

(b) Nyatakan $n(L \cap M)$.

State $n(L \cap M)$.

[2 markah]

[2 marks]

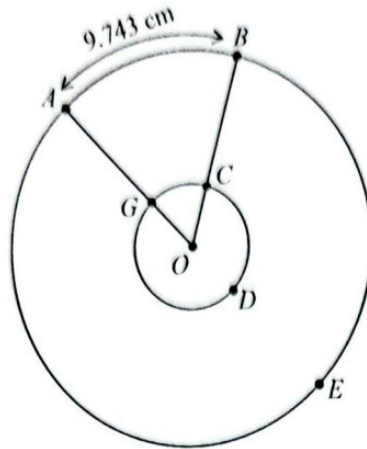
Jawapan / Answer:

(a)

(b)

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- 2 Rajah 1 menunjukkan dua bulatan ABE dan CDG yang berpusat di O .
Diagram 1 shows two circles ABE and CDG with centre O .



Rajah 1
 Diagram 1

Diberi jejari bulatan ABE dan bulatan CDG , masing-masing ialah $7\frac{3}{4}$ cm dan $2\frac{1}{2}$ cm. Titik A , G , O , D dan E adalah segaris.

Given the radius of circle ABE and CDG , is $7\frac{3}{4}$ cm and $2\frac{1}{2}$ cm, respectively. Point A , G , O , D and E are collinear.

- (a) Hitung jarak DE , dalam cm.

Calculate the distance DE , in cm.

[1 markah]

[1 mark]

- (b) Menggunakan $\pi = \frac{22}{7}$, hitung luas sektor minor AOB , dalam cm^2 .

Using $\pi = \frac{22}{7}$, calculate the area of the minor sector AOB , in cm^2 .

[3 markah]

[3 marks]

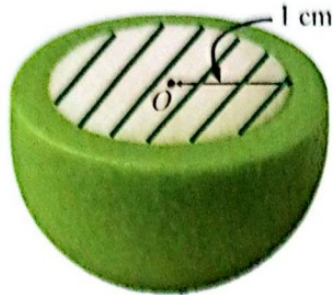
Jawapan / Answer;

(a)

(b)

- 3 Rajah 2 menunjukkan sebuah hemisfera berpusat O dengan isipadu $7\frac{1}{14} \text{ cm}^3$.

Diagram 2 shows a hemisphere centred at O with volume of $7\frac{1}{14} \text{ cm}^3$.



Rajah 2

Diagram 2

Menggunakan $\pi = \frac{22}{7}$, hitung

Using $\pi = \frac{22}{7}$, calculate

- (a) jejari, dalam cm, hemisfera itu.
the radius, in cm, of the hemisphere.

[2 markah]

[2 marks]

- (b) luas permukaan, dalam cm^2 , kawasan tidak berlorek yang berwarna hijau.
the surface area, in cm^2 , of the green non shaded region.

[3 markah]

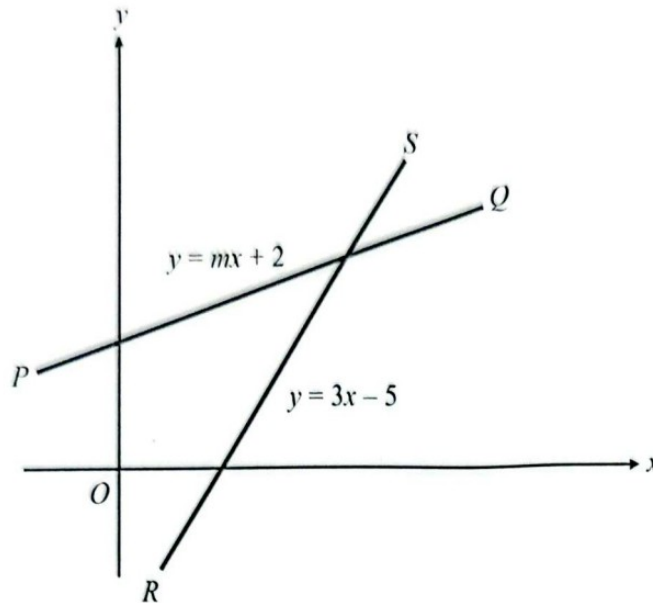
[3 marks]

Jawapan / *Answer*:

(a)

- 4 Rajah 3 menunjukkan dua garis lurus, PQ dan RS yang berada pada suatu satah Cartes. O ialah asalan.

Diagram 3 shows two straight lines, PQ and RS lie on a Cartesian plane. O is the origin.



Rajah 3

Diagram 3

- (a) Nyatakan julat bagi nilai m .

State the range of the value of m .

[1 markah]

[1 mark]

- (b) Garis lurus RS dipantulkan pada paksi- y dan bersilang dengan garis lurus

$$y = \frac{1}{2}x + 2.$$

Tentukan titik persilangan bagi dua garis lurus tersebut.

The straight line RS is reflected in the y -axis and intersect with the straight

$$\text{line } y = \frac{1}{2}x + 2.$$

Determine the point of intersection between the two straight lines.

[3 markah]

[3 marks]

Jawapan / Answer:

(a)

(b)

- 5 Rajah 4 menunjukkan kod bagi tiga bentuk kunci.
Diagram 4 shows the code of three keys.



Kod kunci A

Key A's code

11011_2



Kod kunci B

Key B's code

132_8



Kod kunci C

Key C's code

35_{10}

Rajah 4
Diagram 4

- (a) Nyatakan nilai digit 3 dalam kod kunci B.
State the value of digit 3 in key B's code.

[1 markah]

[1 mark]

- (b) Hasil tambah bagi ketiga-tiga kod tersebut ialah kata laluan bagi membuka sebuah peti harta karun.
Tentukan kata laluan tersebut, dalam asas empat.
The sum of all three codes is the password to unlock a treasure box.
Determine the password, in base four.

[2 markah]

[2 marks]

Jawapan / *Answer*:

(a)

(b)

- 6 (a) Tentukan sama ada setiap hujah di bawah ialah hujah induktif atau hujah deduktif.

Determine whether each argument below is an inductive argument or a deductive argument.

- (i) Semua burung mempunyai sayap. Burung pipit adalah sejenis burung. Maka, burung pipit mempunyai sayap.

All birds have wings. A sparrow is a type of bird. Therefore, a sparrow has wings.

- (ii) Aluminium mengembang apabila dipanaskan. Tembaga mengembang apabila dipanaskan. Maka, semua logam akan mengembang apabila dipanaskan.

Aluminium expands when heated. Copper expands when heated. All metals will expand when heated.

[2 markah]

[2 marks]

- (b) Tuliskan dua implikasi berdasarkan pernyataan berikut:

Write down two implications based on the following statement:

$$n^3 = -125 \text{ jika dan hanya jika } n = -5.$$
$$n^3 = -125 \text{ if and only if } n = -5.$$

[2 markah]

[2 marks]

Jawapan / *Answer*:

(a) (i)

(ii)

(b) Implikasi 1 / *Implication 1*:

.....

Implikasi 2 / *Implication 2*:

.....

- 7 Hairil menjual x cawan teh ais dan y cawan kopi panas setiap hari. Maklumat jualan teh ais dan kopi panas dinyatakan dalam tiga ketaksamaan linear seperti berikut:
Hairil sells x cups of iced tea and y cups of hot coffee each day. The sales information for iced tea and hot coffee is represented by the following three linear inequalities:

$$x + y \leq 100, x - y \geq 0 \text{ dan/and } y > 30$$

- (a) Pada graf di ruang jawapan, lorek rantau yang memuaskan semua ketaksamaan linear di atas.

On the graph in the answer space, shade the region that satisfies all the linear inequalities above.

[3 markah]

[3 marks]

- (b) Hairil menetapkan sasaran untuk menjual 80 cawan teh ais dan 20 cawan kopi panas sehari.

Tentukan sama ada sasaran beliau akan tercapai atau tidak. Berikan justifikasi jawapan anda.

Hairil set a target to sell 80 cups of iced tea and 20 cups of hot coffee a day.

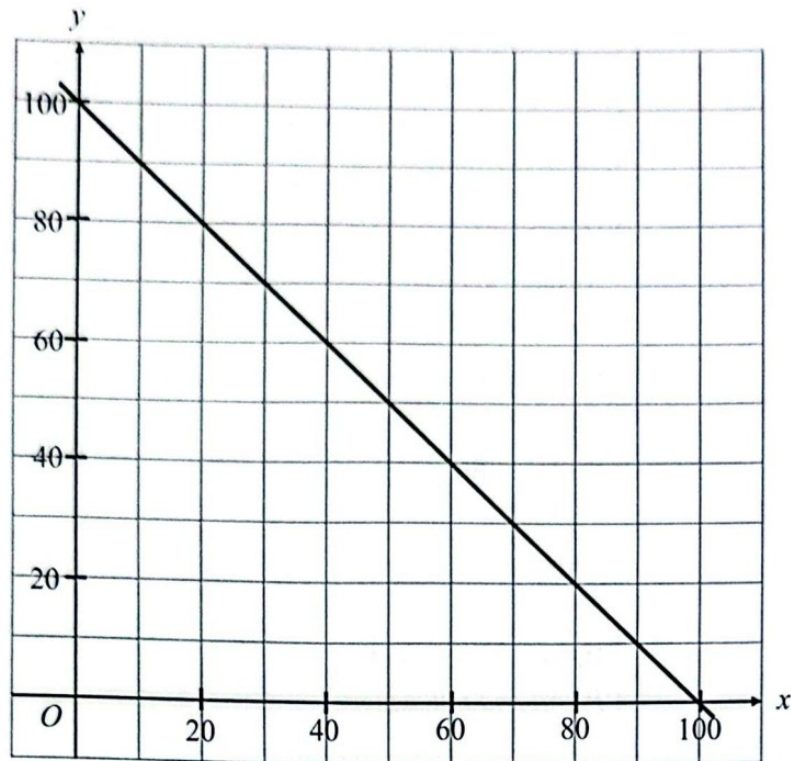
Determine whether his target can be achieved or not. Justify your answer.

[1 markah]

[1 mark]

Jawapan / Answer:

(a)



(b)

- 8 Jadual 1 menunjukkan perbelanjaan bulanan bagi keluarga Danish.
Table 1 shows the monthly expenses for Danish family.

Perbelanjaan Bulanan <i>Monthly Expenses</i>	Amaun <i>Amount</i> (RM)
Sewa rumah <i>House rent</i>	1 800
Ansuran kereta <i>Car installment</i>	780
Keperluan anak-anak <i>Children's needs</i>	850
Bil-bil utiliti <i>Utility bills</i>	910
Perbelanjaan dapur <i>Groceries</i>	1 220
Belanja petrol dan tol <i>Petrol and toll expenses</i>	530
Pemberian kepada ibu bapa <i>Allowances for parents</i>	600
Simpanan tetap <i>Fixed deposit</i>	1 000

Jadual 1

Table 1

Diberi gaji bersih Danish dan isterinya masing-masing ialah RM6 600 dan RM3 800.
It is given that Danish and his wife's net salary is RM6 600 and RM3 800 respectively.

- (a) Tentukan sama ada aliran tunai keluarga Danish adalah positif atau negatif.
Determine whether Danish's family cash flow is positive or negative.

[2 markah]

[2 marks]

- (b) Danish dan isterinya ingin membeli sebuah rumah dengan harga RM750 000. Dia bercadang untuk membayar wang pendahuluan sebanyak 10% daripada harga rumah. Adakah Danish dan isterinya mampu mencapai matlamat mereka dalam tempoh $1\frac{1}{2}$ tahun? Berikan justifikasi anda.

Danish and his wife want to buy a house for RM750 000. He plans to pay a downpayment of 10% of the house price. Will Danish and his wife be able to achieve their goal within $1\frac{1}{2}$ years? Give your justification.

[2 markah]

[2 marks]

Jawapan / Answer:

(a)

(b)

- 9 Pendapatan bulanan Ramli dan isterinya masing-masing ialah RM7 500 dan RM6 000. Dia dan isterinya masing-masing mendermakan RM50 dan RM100 setiap bulan kepada sebuah badan kebajikan yang diluluskan oleh kerajaan. Jadual 2.1 menunjukkan pelepasan cukai yang dituntut oleh mereka.

Ramli and his wife monthly incomes are RM7 500 and RM6 000 respectively. He and his wife has donated RM50 and RM100 respectively every month to a government-approved charity organisation.

Table 2.1 shows the tax relief claimed by them.

Pelepasan cukai <i>Tax relief</i>	Ramli (RM)	Isteri (RM) <i>Wife (RM)</i>
Individu <i>Individual</i>	9 000	9 000
Suami / Isteri (had RM4 000) <i>Husband / Wife (limited to RM4 000)</i>	4 000 (untuk taksiran cukai bersama) (for joint tax assessment)	
Insuran hayat dan KWSP (had RM7 000) <i>Life insurance and EPF (limited to RM7 000)</i>	1 300	1 500
Gaya hidup (had RM2 500) <i>Lifestyle (limited to RM2 500)</i>	3 100	2 000

Jadual 2.1

Table 2.1

- (a) Nyatakan salah satu syarat taksiran cukai bersama.
State one of the terms for filing joint tax assessment.

[1 markah]

[1 mark]

Jawapan / Answer:

- (a)

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- (b) Jadual 2.2 menunjukkan sebahagian daripada Kadar Cukai Pendapatan Individu untuk Tahun Taksiran 2024.

Table 2.2 shows some of the Individual Income Tax Rates for the Assessment Year of 2024.

Banjaran Pendapatan Bercukai (RM) <i>Chargeable income (RM)</i>	Pengiraan (RM) <i>Calculation (RM)</i>	Kadar (%) <i>Rate (%)</i>	Cukai (RM) <i>Tax (RM)</i>
50 001 – 70 000	50 000 pertama <i>On the first 50 000</i>		1 500
	20 000 berikutnya <i>Next 20 000</i>	11	2 200
70 001 – 100 000	70 000 pertama <i>On the first 70 000</i>		3 700
	30 000 berikutnya <i>Next 30 000</i>	19	5 700
100 001 – 400 000	100 000 pertama <i>On the first 100 000</i>		9 400
	300 000 berikutnya <i>Next 300 000</i>	25	75 000

Jadual 2.2

Table 2.2

Berdasarkan Jadual 2.2, hitung jumlah cukai pendapatan bagi Ramli dan isterinya menggunakan taksiran cukai bersama.

Based on Table 2.2, calculate the total income tax of Ramli and his wife by using the joint tax assessment.

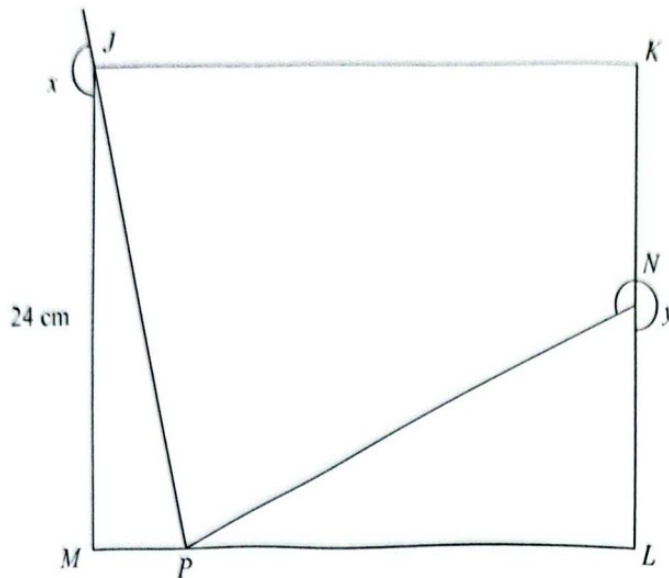
[4 markah]

[4 marks]

Jawapan / *Answer*:

(b)

- 10 Rajah 5 menunjukkan sebuah segi empat tepat $JKLM$. JP dan NP ialah garis lurus.
 Diagram 5 shows a rectangle $JKLM$. JP and NP are straight lines.



Rajah 5

Diagram 5

Diberi bahawa N ialah titik tengah KL , $\sin x = \frac{7}{25}$ dan $PL = 5MP$.

Hitung nilai

Given that N is the midpoint of KL , $\sin x = \frac{7}{25}$ and $PL = 5MP$.

Calculate the value of

- (a) $\tan x$,

[1 markah]

[1 mark]

- (b) $\cos y$.
 $\cos y$.

[3 markah]

[3 marks]

Jawapan / Answer;

(a)

(b)

Bahagian B
Section B

[45 markah]

[45 marks]

Jawab **semua** soalan dalam bahagian ini.

Answer **all** questions in this section.

- 11 (a) Fadzil menunggang motosikal dengan kelajuan $6x$ km/j, dalam masa $(x - 6)$ jam.

Hitung nilai x , jika jarak yang dilaluinya ialah 240 km.

Fadzil rides his motorcycle at a speed of $6x$ km/h, in $(x - 6)$ hours.

Calculate the value of x , if the distance travelled is 240 km.

[4 markah]

[4 marks]

- (b) Fikri melancarkan roket mainan dan ketinggian roket itu dari tanah semasa

ia bergerak secara mengufuk diberikan oleh fungsi $h(x) = x - \frac{x^2}{12}$.

Diberi x mewakili jarak mengufuk dari tapak pelancaran, dalam m.

Fikri launches a toy rocket and the height of the rocket from the ground as it

moves horizontally is given by the function of $h(x) = x - \frac{x^2}{12}$.

Given x represents the horizontal distance from the launch point, in m.

- (i) Lakar graf yang menunjukkan pergerakan roket mainan.

Sketch a graph that shows the movement of the toy rocket.

[2 markah]

[2 marks]

- (ii) Hitung ketinggian maksimum, dalam m, roket mainan tersebut.

Calculate the maximum height, in m, of the toy rocket.

[2 markah]

[2 marks]

Jawapan / Answer:

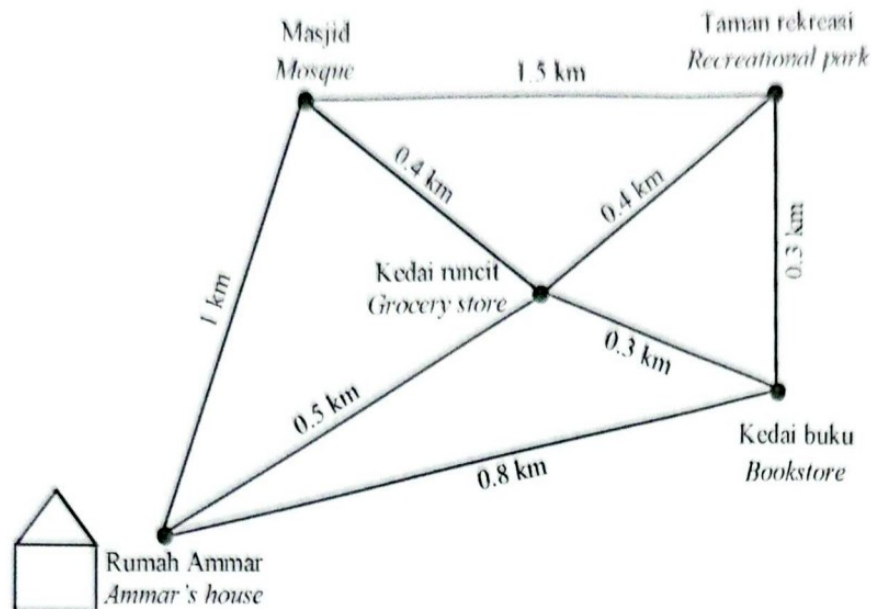
(a)

(b) (i)

(ii)

- 12 Rajah 6 ialah graf tak terarah dan berpemberat yang menunjukkan jarak bagi empat tempat yang akan dilalui Ammar ke taman rekreasi.

Diagram 6 is an undirected and weighted graph that shows the distance between four places that will be passed by Ammar to the recreational park.



Rajah 6
Diagram 6

- (a) Tentukan

Determine

- (i) $n(V)$,
- (ii) $n(E)$,
- (iii) bilangan darjah.
sum of degrees.

[3 markah]

[3 marks]

Jawapan / Answer:

(a)(i)

(ii)

(iii)



- (b) Lukis suatu graf terarah yang mewakili jarak terpendek dari taman rekreasi ke rumah Ammar dengan syarat semua laluan perlu dilalui sekali sahaja. Seterusnya, hitung jarak terpendek, dalam km.

Draw a directed graph to represent the shortest distance from recreational park to Ammar's house with the condition that all the paths are taken once only. Hence, calculate the shortest distance, in km.

[4 markah]

[4 marks]

- (c) Pada hari berikutnya, laluan di antara rumah Ammar dan masjid ditutup. Diberi laju purata perjalanan Ammar ialah 0.1 km/minit. Hitung jumlah masa perjalanannya, dalam minit, dengan syarat semua laluan hanya dilalui sekali sahaja.

On the following day, the route between Ammar's house and the mosque was closed. Given that the average speed of Ammar's journey is 0.1 km/minute. Calculate the time taken for his journey, in minutes, with the condition that all routes are taken once only.

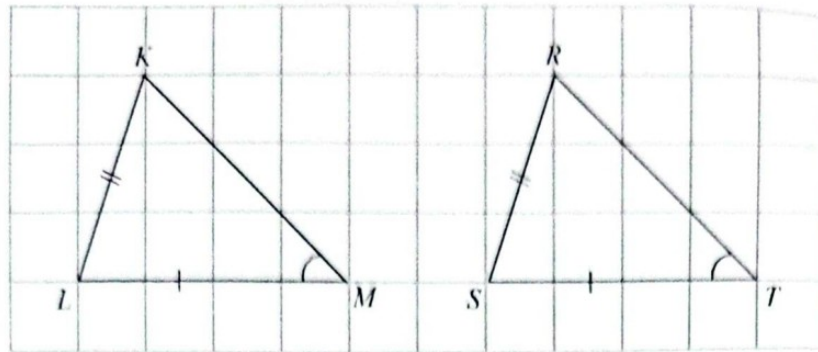
[2 markah]

[2 marks]

Jawapan / *Answer*;
(b)

(c)

- 13 (a) Rajah 7.1 menunjukkan dua segi tiga KLM dan RST .
Diagram 7.1 shows two triangles, KLM and RST .



Rajah 7.1

Diagram 7.1

Nyatakan sifat kekongruenan segi tiga untuk menentukan kedua-dua segi tiga tersebut adalah kongruen.

State the property of triangle congruency used to determine both triangles are congruent.

[1 markah]

[1 mark]

Jawapan / Answer:

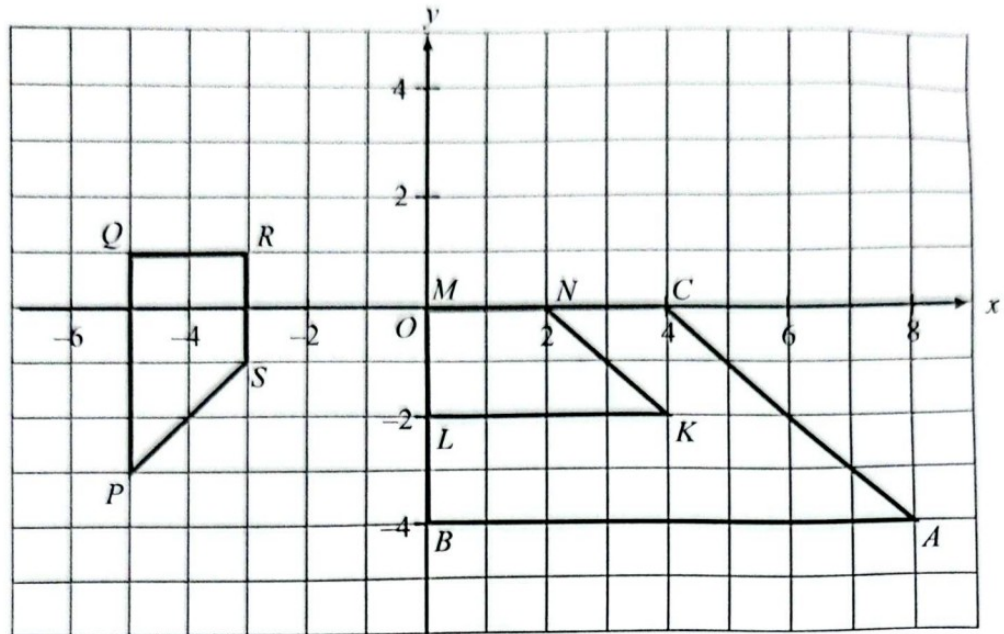
(a)

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- (b) Rajah 7.2 menunjukkan trapezium $PQRS$, $KLMN$ dan $ABMC$ yang dilukis pada suatu satah Cartes.

Diagram 7.2 shows trapeziums $PQRS$, $KLMN$ and $ABMC$ drawn on Cartesian plane.



Rajah 7.2

Diagram 7.2

$KLMN$ ialah imej $PQRS$ di bawah transformasi T .

$ABMC$ ialah imej $KLMN$ di bawah transformasi U .

Huraikan selengkapnya transformasi

$KLMN$ is the image of $PQRS$ under transformation T .

$ABMC$ is the image of $KLMN$ under transformation U .

Describe in full the transformation

(i) T ,

(ii) U .

[6 markah]

[6 marks]

(c) Diberi luas $PQRS$ ialah 6 cm^2 .

Hitung luas, dalam cm^2 , kawasan $ABLKNC$.

It is given that the area of $PQRS$ is 6 cm^2 .

Calculate the area, in cm^2 , the region $ABLKNC$.

[2 markah]

[2 marks]

Jawapan / Answer:

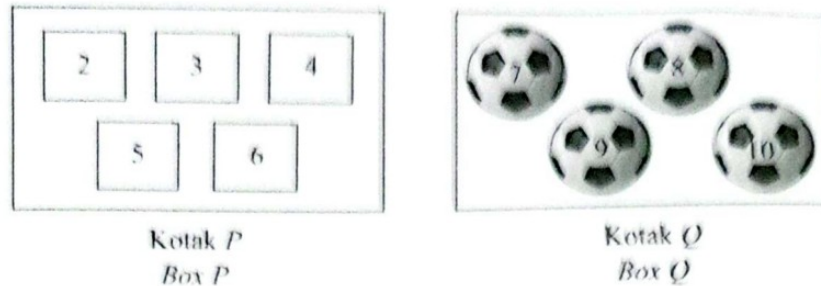
(b) (i)

(ii)

(c)

- 14 (a) Rajah 8 menunjukkan lima keping kad di dalam kotak P dan empat biji bola di dalam kotak Q masing-masing dilabel dengan nombor.

Diagram 8 shows five cards in box P and four balls in box Q respectively, labelled with number.



Rajah 8
Diagram 8

Sekeping kad dan sebiji bola dipilih secara rawak masing-masing dari kotak P dan kotak Q .

A card and a ball are randomly selected from box P and box Q respectively.

- (i) W ialah peristiwa mendapat sekeping kad berlabel nombor ganjil dan sebiji bola berlabel nombor yang merupakan faktor bagi 72. Senaraikan semua kesudahan yang mungkin bagi W dan nyatakan $n(W)$.

W is an event of getting a card labelled with an odd number and a ball labelled with a number which is a factor of 72.

List all the possible outcomes of W and state $n(W)$.

[2 markah]

[2 marks]

- (ii) Hitung kebarangkalian memilih sekeping kad berlabel nombor ganjil atau sebiji bola berlabel nombor perdana.

Calculate the probability of selecting a card labelled with an odd number or a ball labelled with prime number.

[3 markah]

[3 marks]

Jawapan / *Answer*:

(a) (i)

(ii)

- (b) Jadual 3 menunjukkan taburan kekerapan bagi markah yang diperoleh 30 orang murid kelas 5 Bestari. Amir ialah murid kelas 5 Bestari. Selepas semakan semula, didapati terdapat penambahan 2 markah untuk Amir yang asalnya memperoleh 49 markah.

Table 3 shows the frequency distribution of the marks obtained by 30 students of class 5 Bestari. Amir is a student of 5 Bestari. After re-evaluation, there is an additional of 2 marks for Amir whose previous mark is 49.

- (i) Lengkapkan Jadual 3 pada ruang jawapan.

Complete Table 3 in the answer space.

[1 markah]

[1 mark]

- (ii) Menggunakan skala 2 cm kepada 10 markah pada paksi mengufuk dan 2 cm kepada seorang murid pada paksi mencancang, lukis satu histogram bagi data baharu tersebut.

Using a scale of 2 cm to 10 marks on the horizontal axis and 2 cm to one student on the vertical axis, draw a histogram for the new data.

[4 markah]

[4 marks]

Jawapan / Answer:

(b) (i)

Markah <i>Marks</i>	Kekerapan <i>Frequency</i>	Kekerapan baharu <i>New frequency</i>
40 – 49	3	
50 – 59	4	
60 – 69	6	
70 – 79	5	
80 – 89	7	
90 – 99	5	

Jadual 3

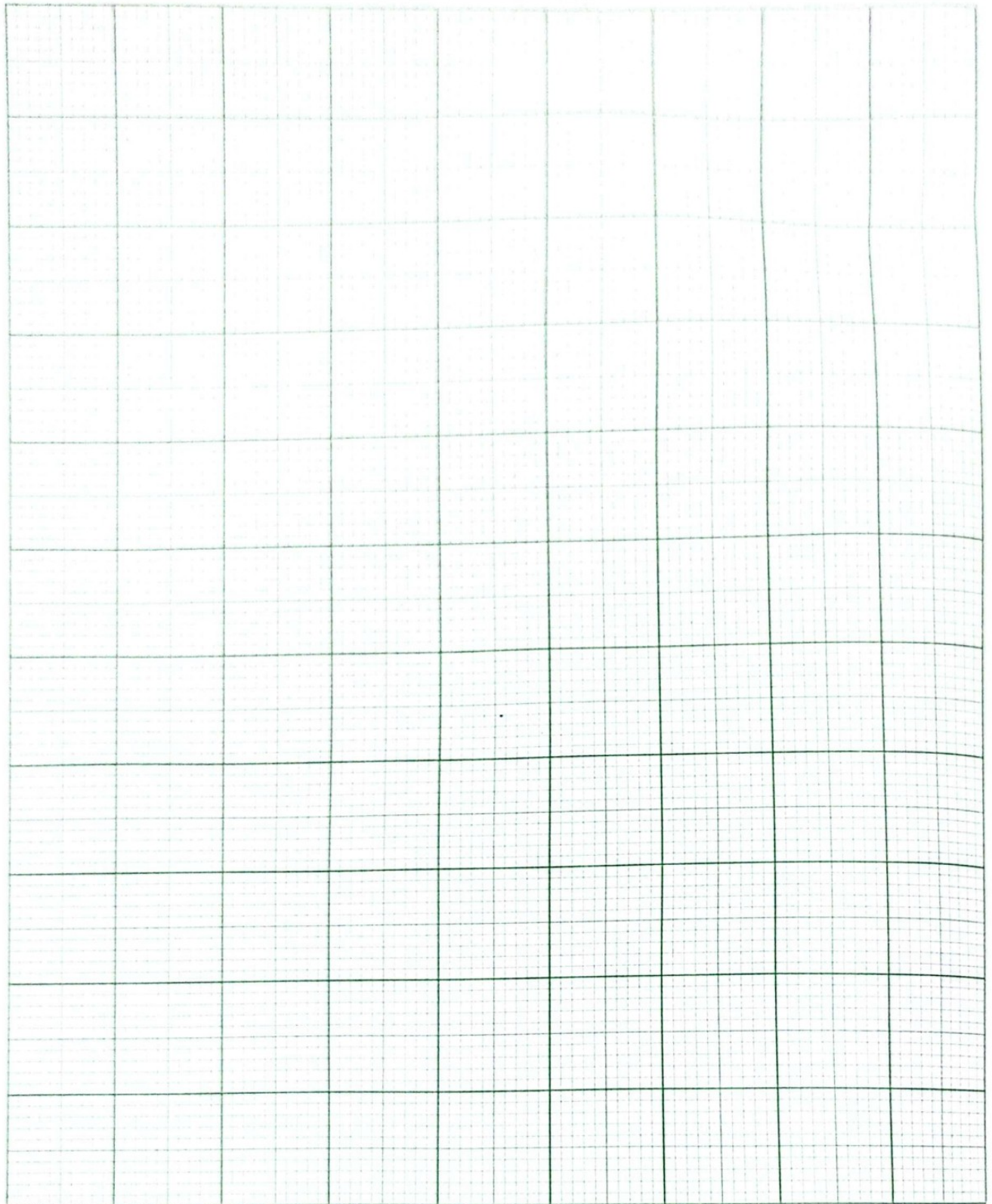
Table 3

(ii) Rujuk graf di halaman 40.

Refer graph on page 40.

Graf untuk soalan 14(b)(ii)

Graph for question 14(b)(ii)



HALAMAN KOSONG
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- 15 (a) Nadia ingin membeli insurans kebakaran untuk rumahnya. Pihak insurans memaklumkan bahawa nilai boleh insurans rumahnya ialah RM600 000. Namun polisi insurans yang ingin dibelinya mempunyai peruntukan ko-insurans untuk menginsuranskan 90% daripada nilai boleh insurans dengan deduktibel sebanyak RM15 000. Nadia hanya menginsuranskan rumahnya dengan jumlah RM450 000 sahaja.

Nadia wants to buy a fire insurance for her house. The insurance company informed that the insurable value of her house is RM600 000. However, the insurance policy she wants to buy has a co-insurance provision to insure 90% of the insurable value with a deductible of RM15 000. Nadia only insured her house at a sum of RM450 000.

- (i) Hitung jumlah insurans yang harus dibeli oleh Nadia bagi rumahnya.
Calculate the amount of insurance required by Nadia for her house.

[1 markah]

[1 mark]

- (ii) Rumah Nadia telah mengalami kebakaran dan jumlah kerugiannya adalah sebanyak RM250 000.

Hitung nilai penalti ko-insurans.

Nadia's house caught on fire and the amount of loss is RM250 000.

Calculate the value of co-insurance penalty.

[3 markah]

[3 marks]

- (iii) Jika rumah Nadia mengalami kerugian menyeluruh, hitung pampasan yang akan diterimanya.

If Nadia's house suffered a total loss, calculate the amount of compensation she will receive.

[2 markah]

[2 marks]

Jawapan / *Answer*:

(a) (i)

(ii)

(iii)

- (b) Jadual 4 menunjukkan kadar premium tahunan per RM1 000 nilai muka insurans sementara boleh baharu tahunan yang ditawarkan oleh Syarikat Insurans Abadi.

Table 4 shows the annual premium rate per RM1 000 face value of a yearly renewable term insurance offered by Insurance Abadi Company.

Umur <i>Age</i>	Lelaki (RM) <i>Male (RM)</i>		Perempuan (RM) <i>Female (RM)</i>	
	Bukan perokok <i>Non-smoker</i>	Perokok <i>Smoker</i>	Bukan perokok <i>Non-smoker</i>	Perokok <i>Smoker</i>
36	2.18	2.80	1.50	1.84
37	2.26	2.91	1.56	1.93
38	2.36	3.05	1.63	2.03

Jadual 4

Table 4

- (i) Nyatakan satu faktor yang menentukan kadar premium insurans itu.
State one factor that determines the insurance premium rate.

[1 markah]

[1 mark]

- (ii) Nadia ingin membeli polisi insurans bernilai RM200 000. Dia berumur 37 tahun dan seorang yang tidak merokok. Berdasarkan Jadual 4, hitung jumlah premium tahunan yang perlu dibayar olehnya.

Nadia wants to buy an insurance policy worth RM200 000. She is 37 years old and does not smoke. Based on Table 4, calculate the total annual premium that she needs to pay.

[2 markah]

[2 marks]

Jawapan / Answer:

(b) (i)

(ii)

Bahagian C
Section C

[15 markah]

[15 marks]

Bahagian ini mengandungi **dua** soalan. Jawab **satu** soalan.

*This section consists of **two** questions. Answer **one** question.*

- 16 (a) Shah ialah seorang pengusaha perkhidmatan bas di sebuah bandar. Diberi tambang bas, F berubah secara langsung dengan bilangan bas, B dan secara songsang dengan dua kali bilangan tempat duduk, S bagi sebuah bas. Tambang bas adalah RM31.25 bagi 5 buah bas dan 40 tempat duduk.

Shah is a bus service operator in a town. Given that the bus fare, F varies directly as the number of buses, B and inversely as twice the number of seats, S for a bus. The bus fare is RM31.25 for 5 buses and 40 seats.

- (i) Hitung tambang bas bagi 3 buah bas dengan bilangan tempat duduk yang sama.

Calculate the bus fare for 3 buses with the same number of seats.

[3 markah]

[3 marks]

- (ii) Jika 7 buah bas digunakan, tambang bas ialah RM50.00. Hitung bilangan tempat duduk bagi setiap bas.

If 7 buses are used, the bus fare is RM50.00. Calculate the number of seats for each bus.

[2 markah]

[2 marks]

Jawapan / Answer:

(a)(i)

(ii)

- (b) Shah ingin membawa keluarganya untuk pulang ke kampung di Batu Pahat menaiki sebuah bas ekspres dengan kapasiti 44 tempat duduk. Perjalanan dari Bandar Melaka ke Batu Pahat terdiri daripada 30 orang dewasa dan 14 orang kanak-kanak dengan jumlah tambang RM458.

Bagi perjalanan bas dari Batu Pahat ke Bandar Melaka pula membawa 36 penumpang dengan $\frac{1}{4}$ daripadanya ialah kanak-kanak dan jumlah tambang perjalanan RM387.

Shah wants to take his family back to his hometown at Batu Pahat on an express bus with a capacity of 44 seats. The journey from Bandar Melaka to Batu Pahat consists of 30 adults and 14 children with a total fare of RM458.

For the journey from Batu Pahat to Bandar Melaka by bus, it consists of 36 passengers where $\frac{1}{4}$ of them are children and the total fare of the journey is RM387.

- (i) Tuliskan dua persamaan linear bagi mewakili maklumat diatas.

Write two linear equations to represent the above information.

[1 markah]

[1 mark]

- (ii) Seterusnya, menggunakan kaedah matriks, hitung kadar tambang bas bagi seorang dewasa dan seorang kanak-kanak yang menaiki bas ekspres itu.

Hence, using matrix method, calculate the fare for one adult and one child who are taking the express bus.

[4 markah]

[4 mark]

Jawapan / *Answer*:

(b)(i)

(ii)

- (c) Setelah menjalankan perniagaan perkhidmatan bas selama lima tahun, Shah menandatangani RM25 000 ke dalam akaun simpanan tetap dengan kadar faedah sebanyak 4% setahun.

Hitung jumlah simpanan beliau selepas 3 tahun.

After five years of running his business on the bus service, Shah deposited RM25 000 in a fixed deposit account with an interest rate of 4% per annum.

Calculate the total saving of Shah after 3 years.

[3 markah]

[3 marks]

- (d) Jadual 5 menunjukkan jumlah bilangan penumpang mengikut hari dalam minggu pertama bulan Mac.

Table 5 shows the total number of passengers by day in the first week of March.

Hari Day	Isnin Monday	Selasa Tuesday	Rabu Wednesday	Khamis Thursday	Jumaat Friday	Sabtu Saturday	Ahad Sunday
Bilangan Penumpang Number of passengers	73	75	89	x	135	124	130

Jadual 5

Table 5

Diberi min bilangan penumpang pada minggu tersebut ialah 109, hitung nilai x .

Given that the mean number of passengers for that week is 109, calculate the value of x .

[2 markah]

[2 marks]

Jawapan / *Answer*:

(c)

(d)

- 17 (a) Kevin menjadi sukarelawan di sebuah sekolah. Beliau dan 3 orang sukarelawan yang lain ditugaskan untuk melukis mural pada dinding sekolah. Masa yang diperlukan untuk menyiapkan kerja itu ialah 5 hari. Diberi masa, t berubah secara songsang dengan bilangan sukarelawan, v .
Hitung masa, dalam hari, yang diperlukan jika 10 orang sukarelawan melakukan kerja itu.

*Kevin is a volunteer at a school. He and 3 other volunteers are assigned to paint a mural on the school wall. The time required to complete the work is 5 days. Given time, t varies inversely with the number of volunteers, v .
Calculate the time, in days, required if 10 volunteers do the work.*

[3 markah]

[3 marks]

- (b) Kevin dan rakan-rakannya menginap di sebuah hotel yang menawarkan dua set hidangan iaitu set A dan set B untuk makan malam. Mereka telah memesan 1 set A dan 1 set B. Jumlah bayaran untuk kedua-dua set tersebut ialah RM78.90. Harga Set A adalah RM42 kurang daripada 2 kali harga set B.

Kevin and his friends stayed in a hotel that offers two sets of meals, set A and set B, for dinner. They ordered 1 set A and 1 set B. The total payment for both sets was RM78.90. The price of Set A was RM42 less than 2 times the price of Set B.

Dengan menggunakan kaedah matriks, hitung harga, dalam RM, set A dan set B.

By using the matrix method, find the price of set A and set B, in RM.

[5 markah]

[5 marks]

Jawapan / *Answer*:

(a)

(b)

- (c) Kevin ingin melaburkan RM15 000 ke dalam akaun simpanan tetap. Jadual 6.1 menunjukkan kadar faedah yang ditawarkan oleh Bank P dan Bank Q.

Kevin wants to invest RM15 000 in a fixed deposit account. Table 6.1 shows interest rates offered by Bank P and Bank Q.

Bank	Kadar faedah setahun <i>Interest rate per annum</i>
P	3.8%
Q	4.2%

Jadual 6.1

Table 6.1

- (i) Hitung faedah yang akan diterima oleh Kevin selepas 2 tahun sekiranya dia menyimpan di Bank P.

Calculate the interest that Kevin will earn after 2 years if he saves in Bank P.

- (ii) Jika Kevin menyimpan di Bank Q dengan faedah dikompaunkan 3 bulan sekali, hitung jumlah simpanan Kevin selepas 5 tahun.

If Kevin saves his money in Bank Q with the interest compounded once every 3 months, calculate his total savings after 5 years.

[4 markah]

[4 marks]

Jawapan / *Answer*:

(c) (i)

(ii)

- (d) Kevin menguruskan satu sesi latihan intensif bagi acara 50 m gaya bebas sukan renang untuk memilih atlet terbaik sekolah. Jadual 6.2 menunjukkan empat masa yang diambil bagi setiap atlet renang.

Kevin organized an intensive training session for 50 m freestyle swimming sport to choose the best school athletes. Table 6.2 shows four time attempts for each swimming athlete.

Atlet <i>Athlete</i>	Tempoh masa (s) <i>Time period (s)</i>			
	1	2	3	4
A	32.06	35.08	30.01	31.53
B	33.61	35.03	34.97	35.48
C	30.06	35.05	30.07	32.11

Jadual 6.2

Table 6.2

Atlet manakah yang akan terpilih? Justifikasikan jawapan anda.

Which athlete will be chosen? Justify your answer.

[3 markah]

[3 marks]

Jawapan / *Answer*:

(d)

KERTAS PEPERIKSAAN TAMAT
END OF QUESTION PAPER