

Nama :

Tingkatan :

MODUL PERKEMBANGAN PEMBELAJARAN 3

(MPP 3)

TAHUN 2023

TINGKATAN 5

1449/2

Mathematics

Kertas 2

October

2023

$2\frac{1}{2}$ jam

Dua jam tiga puluh minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. Tuliskan **nama dan tingkatan** anda pada ruang yang disediakan.

2. Kertas peperiksaan ini adalah dalam dwibahasa.

3. Soalan dalam bahasa Melayu mendahului soalan yang sepadan dalam bahasa Inggeris.

4. Calon dibenarkan menjawab keseluruhan atau sebahagian soalan sama ada dalam bahasa Melayu atau Bahasa Inggeris.

| Pemeriksa | | | |
|-----------|--------|--------------|------------------|
| Bahagian | Soalan | Markah Penuh | Markah diperoleh |
| A | 1 | 4 | |
| | 2 | 4 | |
| | 3 | 4 | |
| | 4 | 3 | |
| | 5 | 4 | |
| | 6 | 3 | |
| | 7 | 3 | |
| | 8 | 5 | |
| | 9 | 5 | |
| | 10 | 5 | |
| B | 11 | 9 | |
| | 12 | 9 | |
| | 13 | 9 | |
| | 14 | 9 | |
| | 15 | 9 | |
| C | 16 | 15 | |
| | 17 | 15 | |
| Jumlah | | | |

Kertas soalan ini mengandungi **34** halaman bercetak

RUMUS MATEMATIK
MATHEMATICAL FORMULAE

Rumus-rumus berikut boleh membantu anda menjawab soalan. Simbol-simbol yang diberi adalah yang biasa digunakan.

The following formulae may be helpful in answering the questions. The symbols given are the ones commonly used.

NOMBOR DAN OPERASI
NUMBERS 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 $a^{\frac{m}{n}} = (a^{\frac{1}{n}})^m$ |
| 5 Faedah mudah / <i>Simple interest</i> , $I = Prt$ | |
| 6 Faedah kompaun / <i>Compound interest</i> , $MV = P \left(1 + \frac{r}{n} \right)^m$ | |
| 7 Jumlah bayaran balik / <i>Total repayment</i> , $A = P + Prt$ | |

PERKAITAN DAN ALGEBRA
RELATIONSHIP AND ALGEBRA

- 1 Jarak/ *Distance* = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$
- 2 Titik tengah/ *Midpoint*, $(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
- 3 Laju purata = $\frac{\text{Jumlah jarak}}{\text{Jumlah masa}}$
- Average speed* = $\frac{\text{Total distance}}{\text{Total time}}$
- 4 $m = \frac{y_2 - y_1}{x_2 - x_1}$
- 5 $m = -\frac{\text{pintasan} - y}{\text{pintasan} - x}$
- $m = -\frac{y - \text{intercept}}{x - \text{intercept}}$

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 = $\pi d = 2\pi j$
Circumference of circle = $\pi d = 2\pi r$
- 4 Luas bulatan = πj^2
Area of circle = πr^2
- 5 $\frac{\text{Panjang lengkok}}{2\pi j} = \frac{\theta}{360^\circ}$
 $\frac{\text{Arc length}}{2\pi r} = \frac{\theta}{360^\circ}$
- 6 $\frac{\text{luas sektor}}{\pi j^2} = \frac{\theta}{360^\circ}$
 $\frac{\text{Area of sector}}{\pi r^2} = \frac{\theta}{360^\circ}$
- 7 Luas layang = $\frac{1}{2} \times$ hasil darab panjang dua pepenjuru
Area of kite = $\frac{1}{2} \times$ *product of two diagonals*
- 8 Luas trapezium = $\frac{1}{2} \times$ hasil tambah dua sisi selari \times tinggi
Area of trapezium = $\frac{1}{2} \times$ *sum of two parallel sides* \times *height*
- 9 Luas permukaan silinder = $2\pi j^2 + 2\pi jt$
Surface area of cylinder = $2\pi r^2 + 2\pi rh$
- 10 Luas permukaan kon = $\pi j^2 + \pi js$
Surface area of cone = $\pi r^2 + \pi rs$
- 11 Luas permukaan sfera = $4\pi j^2$
Surface area of sphere = $4\pi r^2$
- 12 Isi padu prisma = luas keratan rentas \times tinggi
Volume of prism = *area of cross section* \times *height*
- 13 Isi padu silinder = $\pi j^2 t$
Volume of cylinder = $\pi r^2 h$

- 14 Isi padu kon = $\frac{1}{3}\pi j^2 t$
Volume of cone = $\frac{1}{3}\pi r^2 h$
- 15 Isi padu sfera = $\frac{4}{3}\pi j^3$
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

[40 markah]

Jawab **semua** soalan.

1 Rajah 1 menunjukkan graf fungsi kuadratik $f(x) = -x^2 + 6x - 5$.

Diagram 1 shows the graph of quadratic function $f(x) = -x^2 + 6x - 5$.

Tentukan

Determine

(a) koordinat titik Q ,
the coordinate of point Q ,

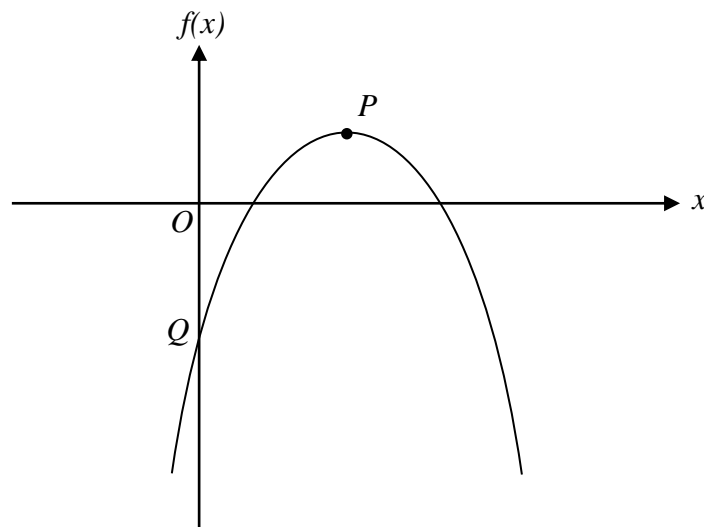
[1 markah]

[1 mark]

(b) titik maksimum P .
maximum point of P .

[3 markah]

[3 marks]

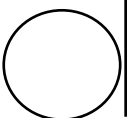


Rajah 1
Diagram 1

Jawapan / *Answer:*

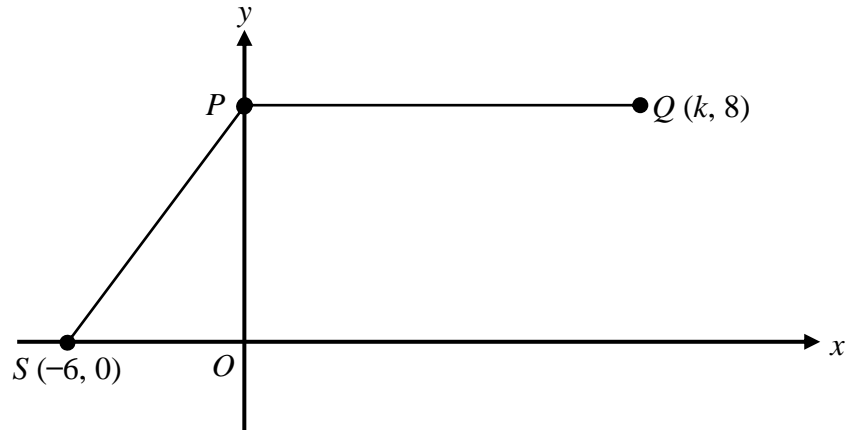
(a)

(b)



- 2 Rajah 2 menunjukkan titik P , titik Q dan titik S pada suatu satah Cartes. Garis lurus PQ selari dengan paksi x . Diberi bahawa $PQ = 2OS$.

Diagram 2 shows point P , point Q and point S on a Cartesian plane. Straight line PQ is paralleled to the x -axis. Given that $PQ = 2OS$.



Rajah 2
Diagram 2

Cari
Find

- (a) nilai k ,

the value of k ,

[1 markah]

[1 mark]

- (b) persamaan garis lurus PS .

the equation of straight line PS .

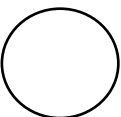
[3 markah]

[3 marks]

Jawapan / Answer :

- (a)

- (b)



3 (a) Gabungkan dua pernyataan p dan q berikut menggunakan perkataan 'atau' untuk membentuk pernyataan majmuk. Seterusnya tentukan nilai kebenaran pernyataan majmuk tersebut.

Combine the following two statements p and q using the word 'or' to form a compound statement. Hence, determine the truth value of the compound statement.

p : Kon mempunyai satu bucu.

p : *A cone has one vertex.*

q : Isipadu kon ialah $\frac{1}{3}\pi r^2 h$.

q : *The volume of cone is $\frac{1}{3}\pi r^2 h$.*

[2 markah]

[2 marks]

(b) Lengkapkan kesimpulan di bawah dan nyatakan jenis hujah sama ada deduktif atau induktif.

Complete the conclusion below and state whether the argument is deductive or inductive.

Premis 1 : Semua gandaan 4 boleh dibahagi tepat dengan 2.

Premise 1 : All multiples of 4 are exactly divisible by 2.

Premis 2 : 64 boleh dibahagi tepat dengan 2.

Premise 2 : 64 exactly divisible by 2.

Kesimpulan :

Conclusion :

[2 markah]

[2 marks]

Jawapan / Answer:

(a) Pernyataan majmuk / Compound statement :

.....

.....

Nilai kebenaran / The truth value :

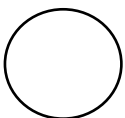
.....

(b) Kesimpulan / Conclusion :

.....

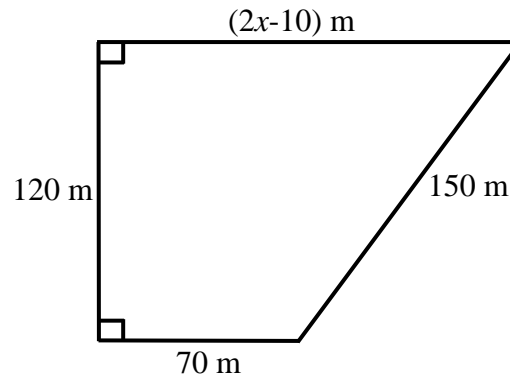
Jenis hujah / Type of argument :

.....



- 4 Rajah 3 menunjukkan sebidang tanah seluas $13\,800\text{ m}^2$ berbentuk trapezium yang dimiliki oleh Encik Syamri. Beliau merancang untuk membina pagar kayu di sekeliling tanahnya itu.

Diagram 3 shows a piece of land with an area of $13\,800\text{ m}^2$ in the shape of trapezium owned by Encik Syamri. He plans to build a wooden fence around his land.



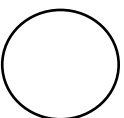
Rajah 3
Diagram 3

Hitung perimeter tanah tersebut, dalam m.

Calculate the perimeter of the land, in m.

[3 markah]
[3 marks]

Jawapan / Answer :



- 5 Terdapat tiga buah buku sejarah dan dua buah buku sains di atas meja. Dua buah buku dipilih secara rawak, satu demi satu tanpa pemulangan, cari kebarangkalian,

There are three history books and two science books on the table. Two books are chosen randomly, one by one without replacement, find the probability,

- (a) dua buah buku sejarah dipilih,
two history books are chosen,

[2 markah]

[2 marks]

- (b) sebuah buku bagi setiap mata pelajaran dipilih.
a book for each chosen subject.

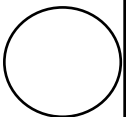
[2 markah]

[2 marks]

Jawapan / Answer:

(a)

(b)



- 6 Rajah 4 menunjukkan maklumat set bucu dan set tepi bagi suatu graf.
Diagram 4 shows the information about vertices and edges of a graph.

$$\begin{aligned} V &= \{P, Q, R, S, T\} \\ E &= \{(P, R), (P, S), (Q, T), (R, Q), (S, T), (S, T), (S, S), (Q, Q)\} \end{aligned}$$

Rajah 4
Diagram 4

- (a) Lukis satu graf berbilang tepi dan mempunyai gelung berdasarkan maklumat yang diberi.

Draw a graph with multiple edges and loops based on the given information.

[2 markah]
[2 marks]

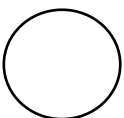
- (b) Seterusnya, nyatakan bilangan darjah bagi bucu S.
Hence, state the sum of degrees of vertex S.

[1 markah]
[1 mark]

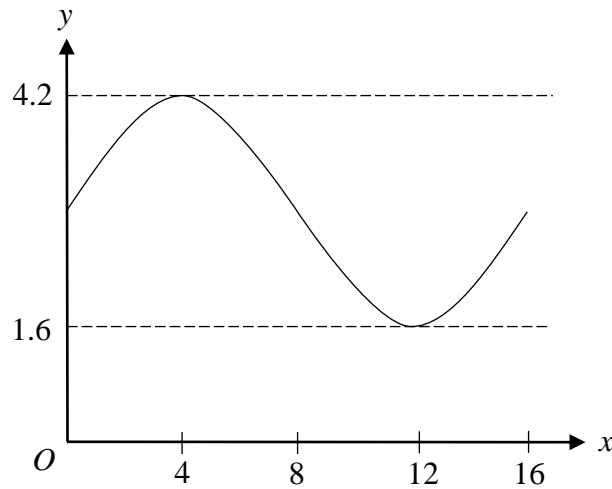
Jawapan / *Answer:*

(a)

(b)



- 7 Rajah 5 menunjukkan aras air yang direkodkan di sebuah limbungan kapal. Diberi y mewakili aras air, dalam meter dan x mewakili masa, dalam jam.
Diagram 5 shows the water level recorded in a dockyard. Given that y represents the water level, in metre and x represents time, in hours.



Rajah 5
Diagram 5

Nyatakan
State

- (a) amplitud aras air,
the amplitude of the water level,
- (b) tempoh aras air,
the period of the water level,
- (c) fungsi trigonometri bagi graf tersebut dalam bentuk $y = a \sin bx + c$.
the trigonometric function of the graph in the form of $y = a \sin bx + c$.

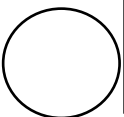
[3 markah]
[3 marks]

Jawapan / Answer :

(a)

(b)

(c)



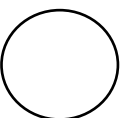
- 8 Kamal dan rakannya ke sebuah restoran setelah selesai menonton filem. Dia telah memesan dua gelas minuman. Harga segelas minuman Coffee Latte ialah empat kali ganda berbanding dengan harga segelas minuman Laici. Jumlah harga 2 gelas minuman Coffee Latte dan 3 gelas minuman Laici ialah RM27.50. Dengan menggunakan kaedah matriks, cari harga, dalam RM, bagi segelas minuman Coffee Latte dan segelas minuman Laici.

Kamal and his friend went to a restaurant after watching a movie. He ordered two glasses of drinks. The price of a glass of Coffee Latte is four times the price of a glass of Lychee. The total price of 2 glasses of Coffee Latte and 3 glasses of Lychee is RM27.50. By using the matrix method, find the price, in RM, for a glass of Coffee Latte and a glass of Lychee.

[5 markah]

[5 marks]

Jawapan / Answer :



- 9 Encik Luqman berumur 25 tahun dan merupakan seorang perokok. Beliau memiliki polisi insurans perubatan dengan peruntukan deduktibel sebanyak RM300 dan fasal penyertaan peratusan ko-insurans 80/20 dalam polisinya. Beliau ingin menambah polisi penyakit kritikal sebanyak RM150 000 nilai muka asas dan kadar premium bagi setiap RM1 000 ialah RM1.77 berdasarkan status kesihatan beliau.

Encik Luqman is 25 years old and a smoker. He has a medical insurance policy with a deductible provision of RM300 and an 80/20 co-insurance percentage participation clause in his policy. He wants to add on a critical illness policy of RM150 000 basic face value and the premium rate is RM1.77 per RM1 000 based on his health status.

- (a) Hitung premium tahunan penyakit kritikal bagi Encik Luqman.
Calculate the annual critical illness premium for Encik Luqman.

[2 markah]
[2 marks]

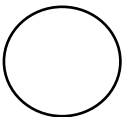
- (a) Hitung bayaran kos yang perlu ditanggung oleh Encik Luqman jika kos perubatan yang dilindungi polisinya berjumlah RM30 300.
Calculate the cost borne by Encik Luqman if the medical costs covered by his policy amount to RM30 300.

[3 markah]
[3 marks]

Jawapan /Answer :

(a)

(b)



- 10 Diberi set semesta, $\xi = \{x : x \text{ ialah integer}, 3 \leq x \leq 15, \}$, $F = \{4, 7, 8, 11, 12\}$,
 $G = \{x : x \text{ ialah faktor bagi } 36\}$ dan $H = \{x : x \text{ ialah nombor gandaan } 5\}$.

Given that the universal set, $\xi = \{x : x \text{ is an integer}, x : 3 \leq x \leq 15\}$, $F = \{4, 7, 8, 11, 12\}$,
 $G = \{x : x \text{ is a factor of } 36\}$ and $H = \{x : x \text{ is a multiples of } 5\}$.

- (a) Berdasarkan maklumat di atas, lengkapkan gambarajah Venn di ruang jawapan.

Based on the above information, complete the Venn diagram in the answer space.

[3 markah]

[3 marks]

- (b) (i) Senaraikan unsur bagi $F \cup G'$

List the elements of $F \cup G'$

- (ii) Cari $n(F \cup G')$

Find $n(F \cup G')$

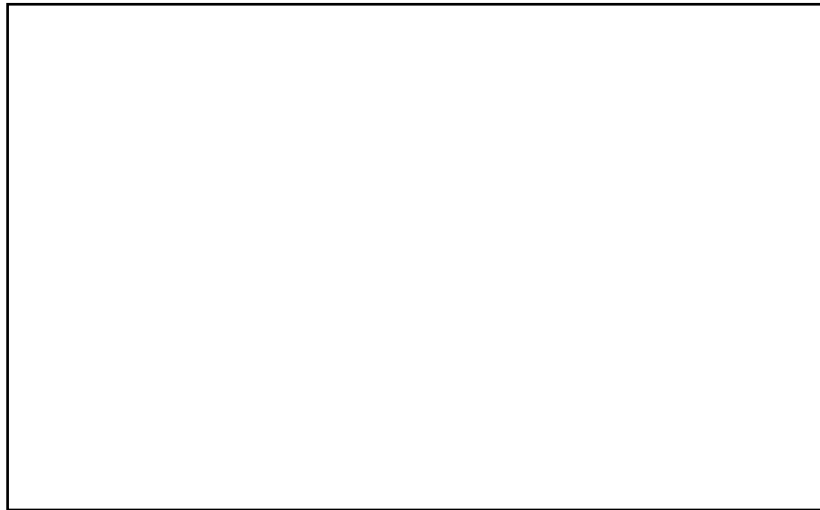
[2 markah]

[2 marks]

Jawapan / Answer :

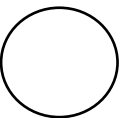
- (a)

ξ



- (b) (i)

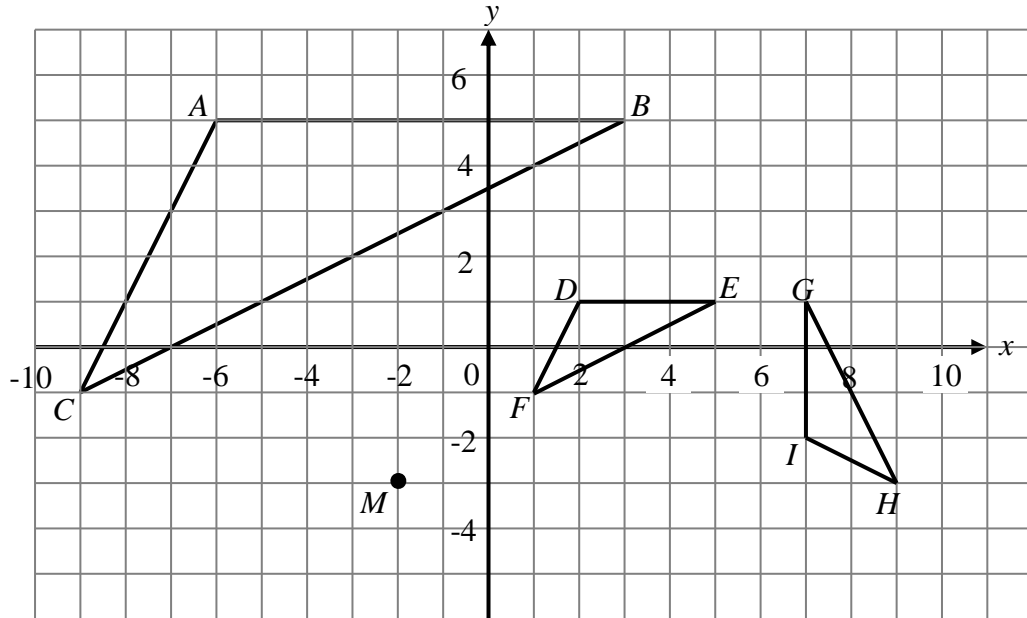
- (ii)



Bahagian B
[45 markah]
Jawab **semua** soalan.

- 11 Rajah 6 menunjukkan tiga segitiga, ABC , DEF dan GHI dilukis di atas suatu satah Cartes.

Diagram 6 shows three triangles ABC , DEF and GHI drawn on a Cartesian plane.



Rajah 6
Diagram 6

- (a) Transformasi **R** ialah pantulan pada garis $y = -x$.

Transformasi **T** ialah translasi $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$.

*Transformation **R** is a reflection on line $y = -x$.*

*Transformation **T** is a translation $\begin{pmatrix} 3 \\ -2 \end{pmatrix}$.*

Nyatakan koordinat imej bagi titik M di bawah gabungan transformasi **RT**.

*State the coordinates of the image of point M under the combined transformation **RT**.*

[2 markah]
[2 marks]

- (b) GHI adalah imej bagi ABC dibawah gabungan transformasi WV .
Huraikan selengkapnya transformasi,
 GHI is the image of ABC under the combined transformation WV .
Describe in full, the transformation :

- (i) V ,
(ii) W .

[6 markah]
[6 marks]

- (c) Diberi bahawa segitiga GHI mewakili kawasan yang mempunyai luas 32 cm^2 .
Hitung luas ABC , dalam cm^2 .
 $It is given that triangle GHI represents a region with area 32 \text{ cm}^2$.
Calculate the area of ABC , in cm^2 .

[2 markah]
[2 marks]

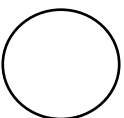
Jawapan / Answer :

(a)

(b) (i) V :

(ii) W :

(c)

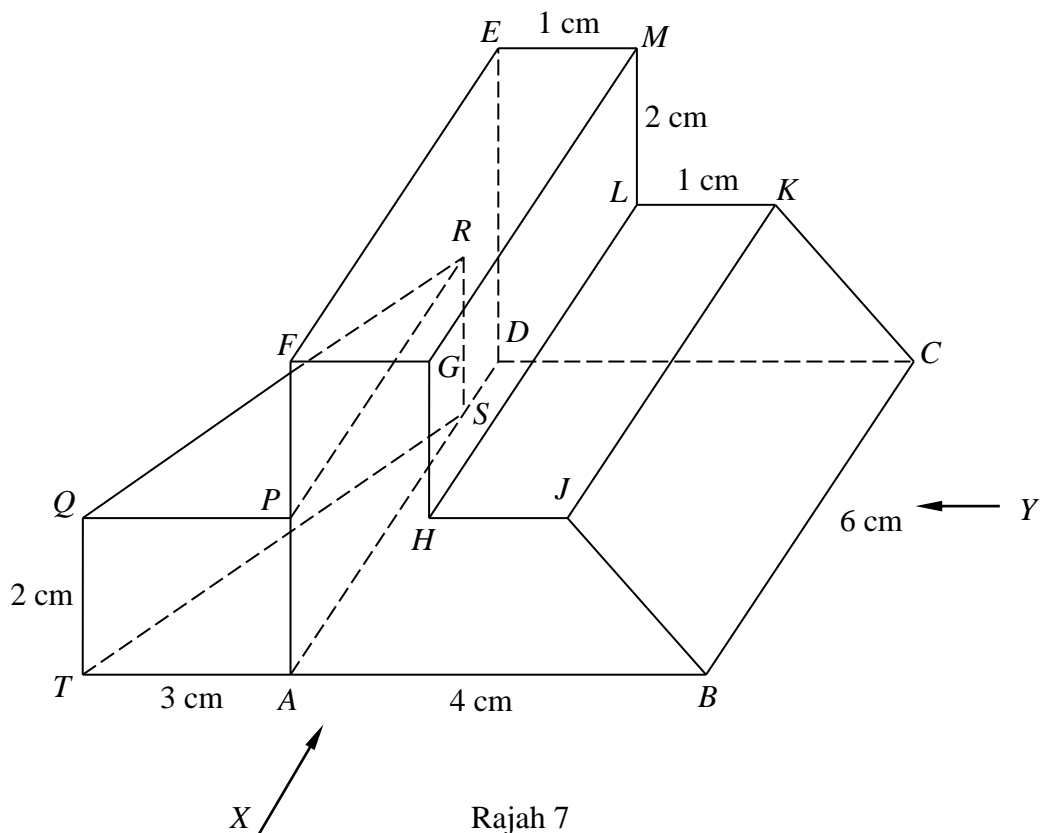


- 12 Anda **tidak** dibenarkan menggunakan kertas graf untuk menjawab soalan ini. Garis padu halus untuk garis binaan mestilah ditunjukkan. Anda mesti menggunakan pensel **BB** atau **2B** dan pensel **HB**.

You are **not** allowed to use the graph paper to answer this question. Thin solid lines for construction lines must be shown. You must be using **BB** or **2B** pencils and **HB** pencil.

Rajah 7 menunjukkan gabungan dua buah prisma tegak masing-masing dengan tapak segi empat tepat $ABCD$ dan segi tiga ATS yang terletak pada satah mengufuk. Segi empat tepat $BCKJ$ ialah satah condong. Segi empat tepat $FGME$ dan $HJKL$ ialah satah mengufuk. Tepi AF , HG , QT dan RS adalah tegak. $AS = PR = 4$ cm.

Diagram 7 shows the composite of two right prisms with a rectangular base $ABCD$ and a triangle ATS respectively which lies on a horizontal plane. Rectangle $BCKJ$ is an inclined plane. Rectangles $FGME$ and $HJKL$ are horizontal planes. The edges AF , HG , QT and RS are vertical. $AS = PR = 4$ cm.



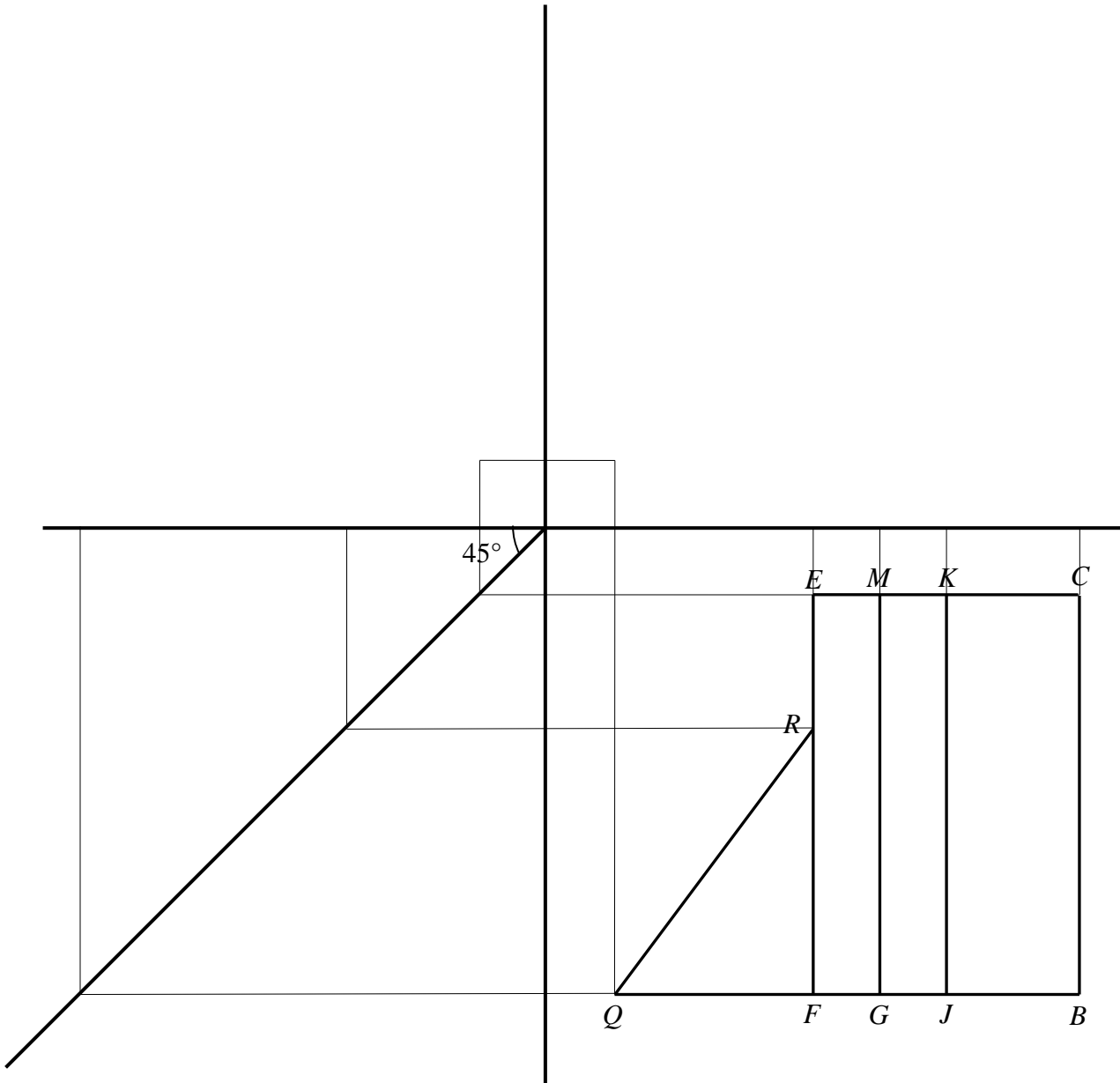
Rajah 7
Diagram 7

Lukis dengan skala penuh,
Draw to full scale,

- (a) dongakan pepejal itu pada satah mencancang yang selari dengan TAB sebagaimana dilihat dari arah X .
the elevation of the solid on vertical plane parallel to TAB as viewed from X . [4 markah]
[4 marks]
- (b) dongakan pepejal itu pada satah mencancang yang selari dengan BC sebagaimana dilihat dari arah Y .
the elevation of the solid on vertical plane parallel to BC as viewed from Y . [5 markah]
[5 marks]

Jawapan/ Answer :

(a), (b)



- 13 Jadual 1.1 menunjukkan taburan kekerapan masa, dalam minit, bagi 90 orang peserta dalam suatu pertandingan merentas desa.

Table 1.1 shows the frequency distribution of the time, in minutes, of 90 participants in a cross-country competition.

| Masa (minit) Time (minutes) | Kekerapan Frequency |
|--|--------------------------------------|
| 50 – 54 | 5 |
| 55 – 59 | 14 |
| 60 – 64 | 19 |
| 65 – 69 | 23 |
| 70 – 74 | 16 |
| 75 – 79 | 9 |
| 80 – 84 | 4 |

Jadual 1.1
Table 1.1

- (a) Berdasarkan Jadual 1.1, lengkapkan Jadual 1.2 di ruang jawapan.

Based on Table 1.1, complete Table 1.2 in the answer space.

[2 markah]

[2 marks]

- (b) Untuk ceraian soalan ini, gunakan kertas graf yang disediakan di halaman 21.

Dengan menggunakan skala 2 cm kepada 5 minit pada paksi mengufuk dan 2 cm kepada 10 peserta pada paksi mencancang, lukiskan satu ogif bagi data tersebut.

For this part of the question, use the graph paper provided on page 21.

By using a scale 2 cm to 5 minutes on the horizontal axis and 2 cm to 10 participants on the vertical axis, draw an ogive for the data.

[4 markah]

[4 marks]

- (c) Menggunakan ogif di 13(b), cari

Using the ogive in 13(b), find

- (i) julat antara kuartil,
interquartile range,
(ii) persentil ke-35, P_{35} .
the 35th percentile, P_{35} .

[3 markah]

[3 marks]

Jawapan / Answer :

(a)

| Masa (minit) Time (minutes) | Kekerapan Frequency | Sempadan Atas Upper Boundary | Kekerapan Longgokan Cummulative Frequency |
|--|--------------------------------|---|--|
| 45 – 49 | 0 | | |
| 50 – 54 | 5 | | |
| 55 – 59 | 14 | | |
| 60 – 64 | 19 | | |
| 65 – 69 | 23 | | |
| 70 – 74 | 16 | | |
| 75 – 79 | 9 | | |
| 80 – 84 | 4 | | |

Jadual 1.2

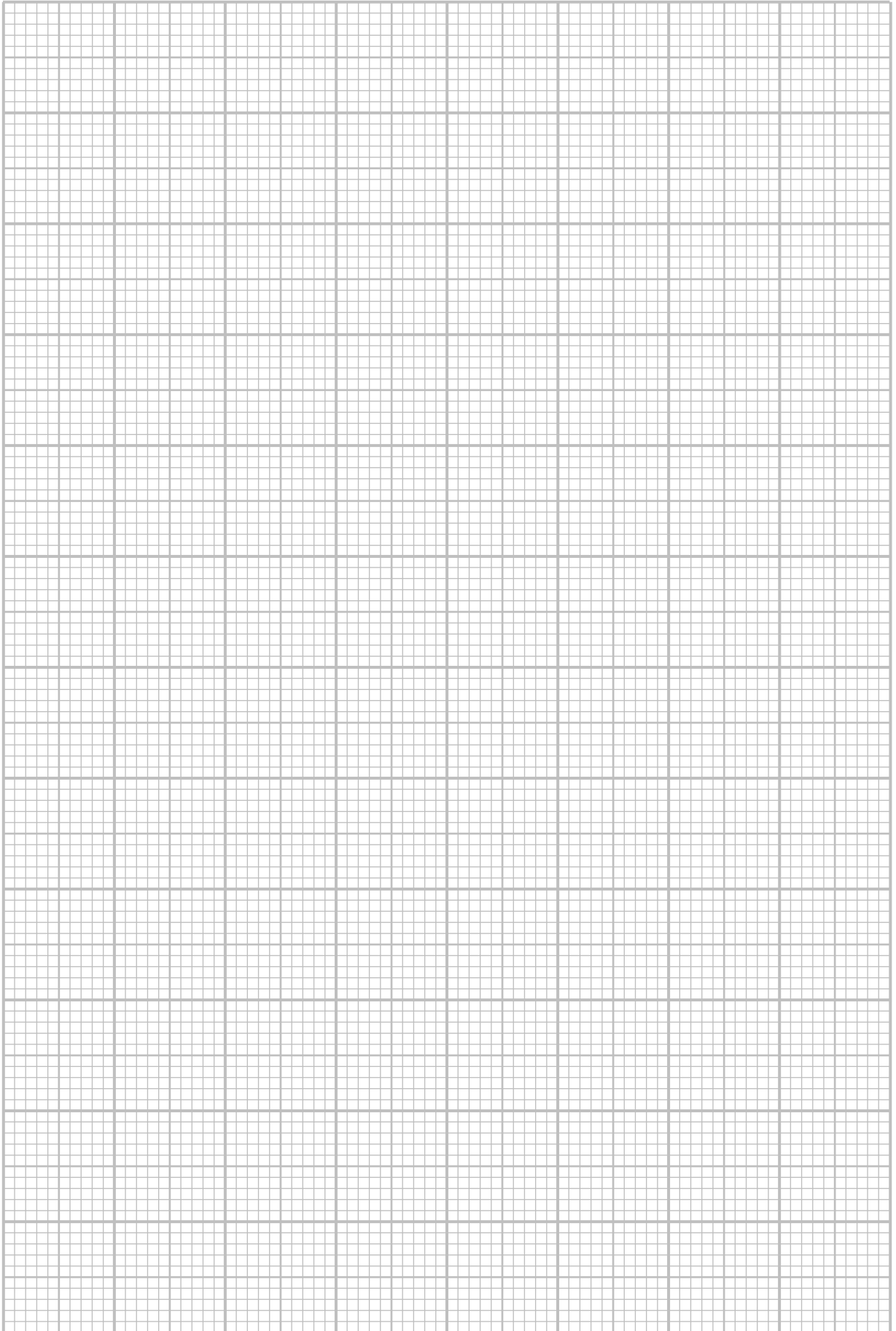
Table 1.2

(b) Rujuk graf pada halaman **21**.
Refer graph on page 21.

(c) (i)

(ii)

Graf untuk Soalan 13
Graph for Question 13



- 14 Restoran Anida sedang membuat promosi jualan makanan. Restoran itu menawarkan dua jenis hidangan utama, iaitu nasi dagang dan nasi minyak. Pada suatu hari tertentu, restoran itu menawarkan x set nasi dagang dan y set nasi minyak. Harga bagi satu set nasi dagang dan satu set nasi minyak masing-masing ialah RM15 dan RM10. Syarat-syarat jualannya adalah seperti berikut :

Anida Restaurant is doing a food sales promotion. The restaurant offers two types of main dishes, namely nasi dagang and nasi minyak. On a certain day, the restaurant offers x sets of nasi dagang and y sets of nasi minyak. The price for a set of nasi dagang and a set of nasi minyak is RM15 and RM10 respectively. The conditions of the sales are as follows:

I Jumlah bilangan hidangan makanan yang dijual selebih-lebihnya 60 set.

The total number of dishes sold is at most 60 sets.

II Bilangan set nasi minyak sekurang-kurangnya dua kali bilangan set nasi dagang.

The number of sets of nasi minyak sold is at least twice the number of sets of nasi dagang sold.

III Jumlah jualan minimum bagi kedua-dua jenis hidangan makanan ialah RM600.

The minimum selling amount for both types of dishes is RM600.

- (a) Tulis tiga ketaksaman linear, selain $x \geq 0$ dan $y \geq 0$, yang memenuhi semua syarat di atas.

Write three linear inequalities, other than $x \geq 0$ and $y \geq 0$, that satisfy all the above conditions.

[3 markah]

[3 marks]

- (b) Untuk ceraiian soalan ini, gunakan kertas graf di halaman 23.

Menggunakan skala 2 cm kepada 10 set pada kedua-dua paksi, lukis dan lorek rantau yang memuaskan system ketaksamaan linear di (a).

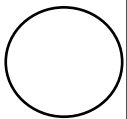
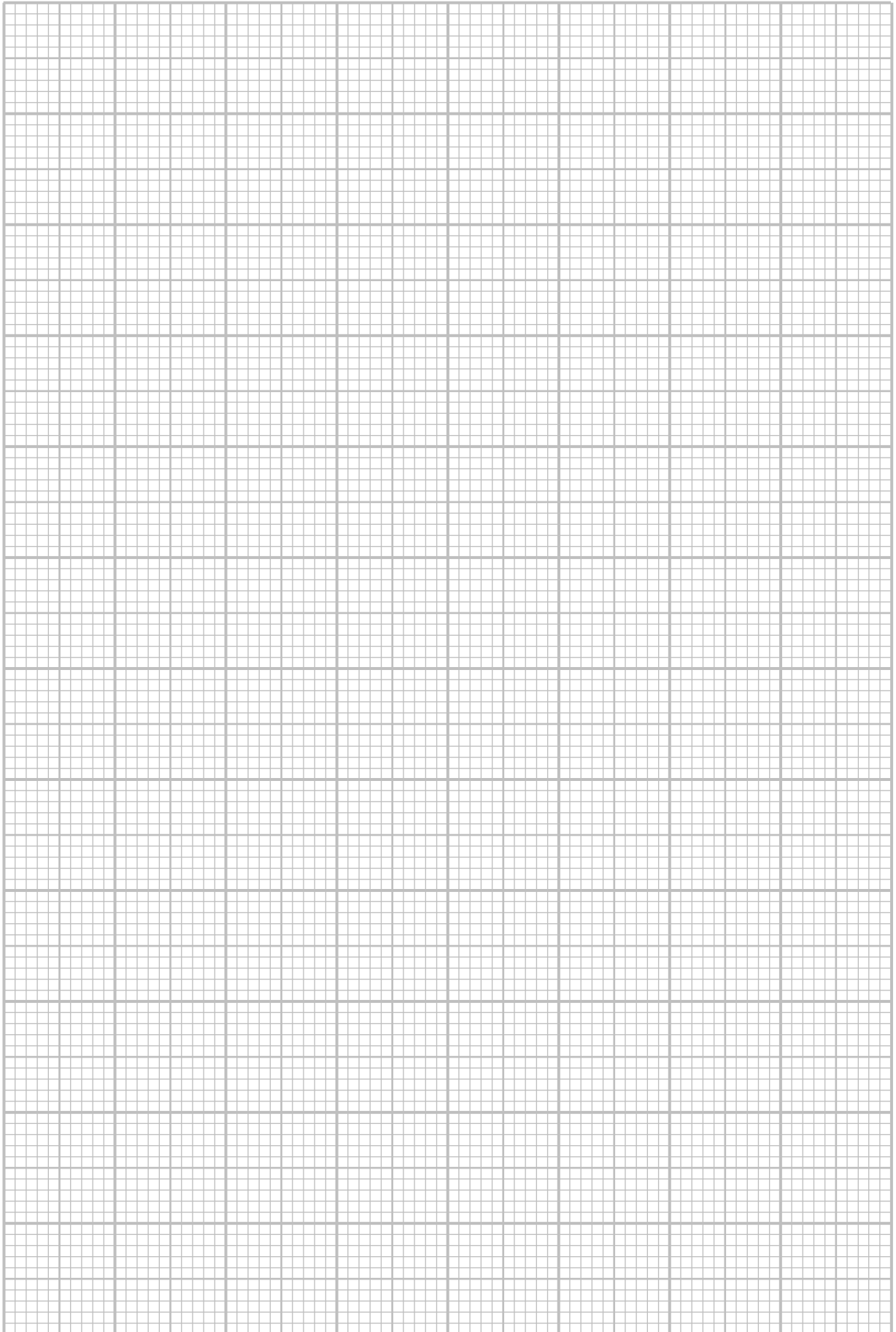
For this part of the question, use a graph paper provided on page 23.

Using a scale of 2 cm to 10 sets on both axes, draw the graph and shade the region that satisfies the system of linear inequalities in (a).

[5 markah]

[5 marks]

Graf untuk Soalan 14
Graph for Question 14



- 15 Pada tahun 2022, Encik Ramli dan isterinya mendapat gaji tahunan masing-masing sebanyak RM60 000 dan RM50 000. Mereka telah mendermakan RM400 setiap orang kepada badan kebajikan yang berdaftar. Diberi bahawa jumlah pelepasan yang layak dituntut oleh Ramli dan isterinya ialah RM28 500. Potongan Cukai Berjadual (PCB) masing-masing dipotong RM290 dan RM230 setiap bulan.

Mr Ramli and his wife received an annual salary of RM60 000 and RM50 000 respectively in 2022. They each donated RM400 to a registered welfare. It was given that the total tax relief that was eligible to be claimed by Ramli and his wife was RM28 500. Their Monthly Tax Deduction (PCB) was RM290 and RM230 each month.

- (a) Dengan menggunakan Jadual 2 : Kadar Cukai Pendapatan Individu untuk Tahun Taksiran 2022, hitung cukai pendapatan taksiran bersama yang perlu dibayar oleh mereka.

Hence, by using Table 2: Individual Income Tax Rates for Assessment Year of 2022, calculate the joint tax assessment payable by them.

| Banjaran Pendapatan Bercukai (RM) <i>Chargeable Income (RM)</i> | Pengiraan (RM) <i>Calculations (RM)</i> | Kadar (%) <i>Rate (%)</i> | Cukai (RM) <i>Tax (RM)</i> |
|--|---|------------------------------|-------------------------------|
| 35 001 – 50 000 | 35 000 pertama <i>On the first 35 000</i> 15 000 berikutnya <i>Next 15 000</i> | 8 | 600 1 200 |
| 50 001 – 70 000 | 50 000 pertama <i>On the first 50 000</i> 20 000 berikutnya <i>Next 20 000</i> | 14 | 1 800 2 800 |
| 70 001 – 100 000 | 70 000 pertama <i>On the first 70 000</i> 30 000 berikutnya <i>Next 30 000</i> | 21 | 4 600 6 300 |

Jadual 2
Table 2

[6 markah]
[6 marks]

- (b) Adakah Encik Ramli dan isterinya perlu membuat bayaran baki cukai pendapatan kepada Lembaga Hasil Dalam Negeri (LHDN)? Terangkan jawapan anda dan sertakan nilai berangka untuk menyokong penjelasan anda.

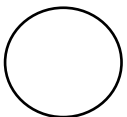
Does Mr Ramli and wife need to pay any more income tax to the Inland Revenue Board (IRB)? Explain your answer and include numerical values to support your explanation.

[3 markah]
[3 marks]

Jawapan / Answer :

(a)

(b)



Bahagian C

[15 markah]

Jawab **satu** soalan daripada bahagian ini.

- 16** Encik Farqan merupakan seorang pengusaha makanan sejuk beku di Pekan Ajil.
Encik Farqan is a frozen food entrepreneur in Pekan Ajil.

- (a) Jadual 3 menunjukkan rekod jualan makanan sejuk beku di kedainya pada suatu hari tertentu.
Table 3 shows the sales record of frozen food in his store on a certain day.

| Makanan sejuk beku <i>Frozen Food</i> | Bilangan Pek <i>Number of pack</i> |
|--|---------------------------------------|
| Donat <i>Donuts</i> | 150 |
| Karipap <i>Curry puff</i> | 120 |

Jadual 3

Table 3

- (i) Tulis nisbah bilangan pek donat kepada bilangan pek karipap dalam bentuk termudah.
Write the ratio of the number of packs of donuts to the number of packs of Curry puff in the simplest form.
- (ii) Diberi bahawa harga untuk satu pek donat dan karipap masing-masing ialah RM8.00 dan RM5.00, hitung jumlah jualan beliau pada hari tersebut.
Given that the price for a pack of donuts and curry puff is RM8.00 and RM5.00 respectively, calculate his total sales for that day.

[3 markah]

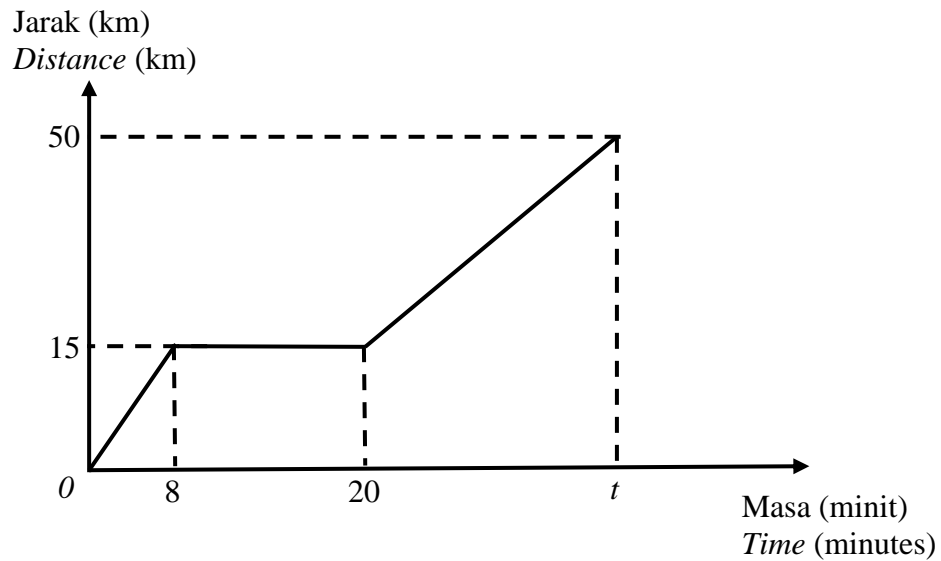
[3 marks]

Jawapan /Answer :

(a) (i)

(ii)

- (b) Rajah 8 menunjukkan graf jarak-masa bagi perjalanan Encik Farqan untuk menghantar makanan sejuk bekunya kepada pelanggan dalam tempoh t minit.
Diagram 8 shows the distance-time graph for Encik Farqan's trip to deliver its frozen food to customers within t minutes.



Rajah 8
Diagram 8

- (i) Nyatakan tempoh masa, dalam minit, Encik Farqan berhenti seketika.
State the length of time, in minutes, Encik Farqan stopped for a moment.
- (ii) Hitungkan nilai t , dalam minit, jika laju purata keseluruhan perjalanan Encik Farqan ialah 75 kmj^{-1} .
Calculate the value of t , in minutes, if the average speed of Encik Farqan's journey is 75 kmh^{-1} .

[4 markah]
[4 marks]

Jawapan /Answer :

(b) (i)

(ii)

- (c) Jadual 4 menunjukkan bilangan pek karpap yang ditempah oleh pelanggan Encik Farqan.
Table 4 shows the number of curry puff packs ordered by Encik Farqan's customer.

| |
|--|
| 10, 22, 19, 20, 15, 20, 21, 18, 17, 16 |
|--|

Jadual 4
Table 4

- (i) Diberi bahawa min bagi tempahan tersebut ialah 17.8, hitung sisihan piawai bagi data tersebut.
Given the mean for the ordered is 17.8, calculate the standard deviation for the data.
- (ii) Jika min untuk tempahan donat ialah 17.8 dan sisihan piawainya ialah 3.42, tempahan makanan sejuk beku yang manakah lebih konsisten.
If the mean for donut orders is 17.8 and the standard deviation is 3.42, which order of frozen food is more consistent.

[4 markah]
[4 marks]

Jawapan / Answer :

(c)(i)

(ii)

(d) Jadual 5 menunjukkan pelan kewangan seorang pekerja Encik Farqan pada suatu bulan tertentu.

Table 5 shows the financial plan of Encik Farqan's employee on a certain month.

| Pendapatan dan Perbelanjaan <i>Income and expenditure</i> | Amaun (RM) <i>Amount (RM)</i> |
|--|----------------------------------|
| Pendapatan Aktif / <i>Active Income</i> | 3 500 |
| Pendapatan Pasif / <i>Passive Income</i> | 200 |
| Simpanan tetap bulanan / <i>Fixed monthly savings</i> | 300 |
| Dana kecemasan / <i>Emergency fund</i> | 150 |
| Baki Pendapatan / <i>Income balance</i> | <i>Q</i> |
| Perbelanjaan tetap bulanan: <i>Monthly fixed expenses:</i> | |
| Ansuran kereta / <i>Car installment</i> | 500 |
| Insuran / <i>Insurance</i> | 200 |
| Pembiayaan perumahan / <i>Housing loan</i> | 600 |
| Perbelanjaan tidak tetap bulanan: <i>Monthly variable expenses:</i> | |
| Barangan dapur / <i>Groceries</i> | 800 |
| Minyak kenderaan / <i>Fuel Vehicles</i> | 250 |
| Utiliti rumah / <i>Home utilities</i> | 500 |
| Pemberian kepada ibu bapa / <i>Giving to parents</i> | 300 |
| Bil telefon / <i>Telephone bills</i> | 150 |

Jadual 5
Table 5

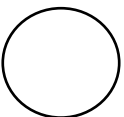
- (i) Cari nilai *Q*.
Find the value of Q.
- (ii) Hitung aliran tunai pekerja Encik Farqan. Adakah dia mengurus kewangan dengan cekap?
Calculate the cash flow of Encik Farqan's employee. Does he manage his financial wisely?

[4 markah]
[4 marks]

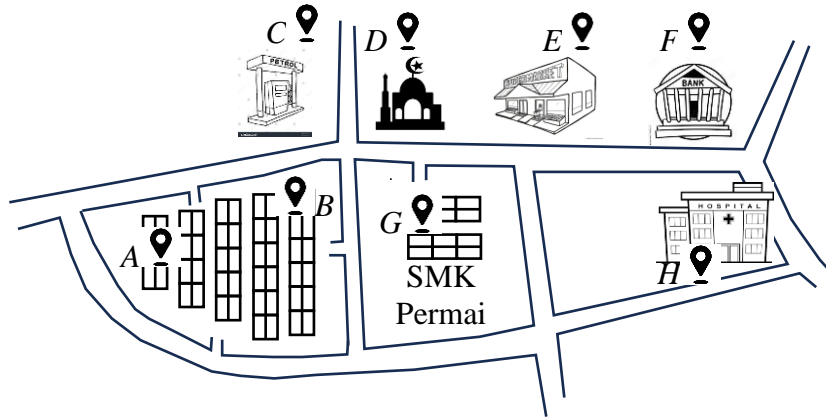
Jawapan /Answer :

(d) (i)

(ii)



- 17 Rajah 9(a) menunjukkan peta lakaran di sebuah bandar. A, B, C, D, E, F, G dan H merupakan lokasi dalam sebuah bandar. Pada hujung minggu, Sarah mengayuh basikal dari rumahnya di Taman Permai (A) dan melalui setiap lokasi sekali sahaja. *Diagram 9(a) shows a sketch map of a city. A, B, C, D, E, F, G and H are locations in a city. On weekends, Sarah cycles from her home in Taman Permai (A) and goes through each location once.*



Petunjuk/Key

A – Taman Permai (Rumah Sarah / Sarah's House)

B – Taman Permai (Rumah Salwati / Salwati's House)

C – Stesen Minyak / Petrol Station

D – Masjid / Mosque

E – Pasar raya Permai / Permai Supermarket

F – Bank

G – SMK Permai

H – Hospital

Rajah 9(a)
Diagram 9(a)

- (a) Berdasarkan peta lakaran pada Rajah 9(a),
Based on the sketch map on Diagram 9(a),

- (i) lukis satu pokok yang menghubungkan semua lokasi.
draw a tree that connecting all locations.

[1 markah]

[1 mark]

- (ii) nyatakan bilangan bucu.
specify the number of vertices.

[1 markah]

[1 mark]

Jawapan/Answer:

(a) (i)

(ii)

- (b) Pada tahun 2015, Sarah membeli sebuah rumah di taman yang sama dengan harga RM150 000. Selepas lima tahun dia menjual rumah tersebut kepada Bank ABC dan dia memperolehi keuntungan sebanyak 50%. Dia menyimpan $\frac{1}{4}$ daripada wang jualan rumah tersebut dalam Bank ABC. Berapakah jumlah simpanannya selama lima tahun dengan kadar faedah 2.5% setahun?

In 2015, Sarah bought a house in the same park for RM150 000. After five years, she sold the house to ABC Bank, and she made a profit of 50%. She saved $\frac{1}{4}$ of the money from the sale of the house at ABC Bank. How much is her savings for five years at an interest rate of 2.5% per year?

[4 markah]

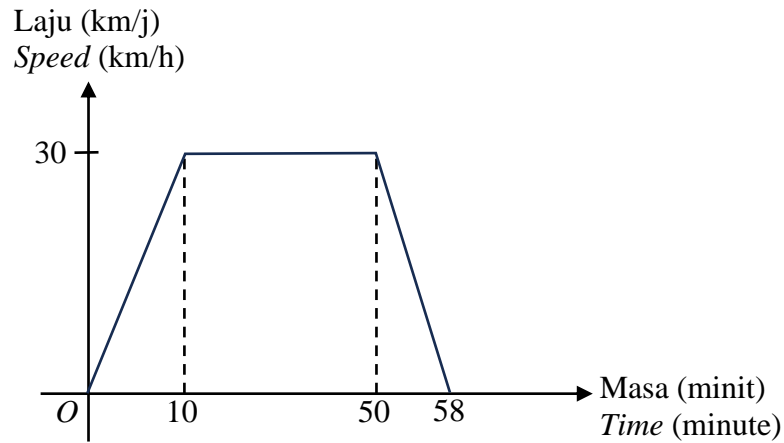
[4 marks]

Jawapan / Answer:

(b)

- (c) Salwati ialah jiran Sarah, telah dimasukkan ke hospital. Rajah 9(c) menunjukkan graf laju-masa bagi perjalanan motosikal Sarah ke hospital untuk melawat Salwati.

Salwati is Sarah's neighbour, has been hospitalized. Diagram 9(c) shows the speed-time graph for Sarah's motorcycle movement to the hospital to visit Salwati.



Rajah 9(c)
Diagram 9(c)

- (i) Nyatakan tempoh masa, dalam minit, perjalanan motosikal Sarah bergerak dengan laju seragam.
State the duration, in minutes, of Sarah's motorcycle moves with uniform speed.

[1 markah]

[1 mark]

- (ii) Cari jumlah jarak, dalam km, keseluruhan perjalanan tersebut.
Find the total distance, in km, of the whole journey.

[3 markah]

[3 marks]

Jawapan / Answer:

(c) (i)

(ii)

- (d) **Penyelesaian menggunakan kaedah matriks tidak dibenarkan untuk soalan ini.**
Solving using matrix method not allowed in this question.

Dalam perjalanan pulang ke rumahnya, Sarah singgah ke Pasar raya Permai. Sarah membeli dua helai seluar dan tiga helai t-shirt dengan jumlah harga RM145. Purata harga bagi sehelai seluar dan sehelai t-shirt yang dibeli oleh Sarah ialah RM32.50.

On her way home, Sarah stopped at Permai Supermarket. Sarah bought two pants and three t-shirts for a total price of RM145. The average price for a pair of pants and a t-shirt bought by Sarah is RM32.50.

Hitung harga dalam RM, bagi sehelai seluar dan sehelai t-shirt.
Calculate the price in RM, a piece of pants and a t-shirt.

[5 markah]

[5 marks]

Jawapan/Answer:

(d)

KERTAS SOALAN TAMAT
END OF QUESTION PAPER

