

NOMBOR DAN OPERASI NUMBER AND OPERATIONS

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

PERKAITAN DAN ALGEBRA RELATIONSHIP AND ALGEBRA

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

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 = πr^2
Area of circle = πr^2
- 5 Panjang lengkok = $\frac{\theta}{360^\circ} \times 2\pi r$

$$\frac{\text{Panjang lengkok}}{2\pi r} = \frac{\theta}{360^\circ}$$

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

$$\frac{\text{Luas sektor}}{\pi r^2} = \frac{\theta}{360^\circ}$$

$$\frac{\text{Area of sector}}{\pi r^2} = \frac{\theta}{360^\circ}$$
- 7 Luas layang = $\frac{1}{2} \times$ hasil darab panjang dua pepenjuru
Area of kite = $\frac{1}{2} \times \text{product of the length of two diagonals}$
- 8 Luas trapezium = $\frac{1}{2} \times$ hasil tambah dua sisi selari $\times$ tinggi
Area of trapezium = $\frac{1}{2} \times \text{sum of two parallel sides} \times \text{height}$
- 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 = luas keratan rentas $\times$ tinggi
Volume of prism = *area of cross section* $\times$ *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 = $\frac{1}{3} \pi r^2 h$
- 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

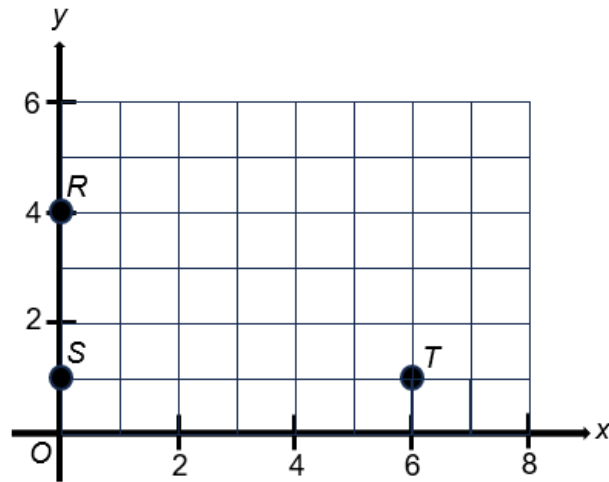
- 1 Min / Mean, $\bar{x} = \frac{\sum x}{N}$
- 2 Min / Mean, $\bar{x} = \frac{\sum fx}{\sum f}$
- 3 Varians / Variance, $\sigma^2 = \frac{\sum (x - \bar{x})^2}{N} = \frac{\sum x^2}{N} - \bar{x}^2$
- 4 Varians / Variance, $\sigma^2 = \frac{\sum f(x - \bar{x})^2}{\sum f} = \frac{\sum fx^2}{\sum f} - \bar{x}^2$
- 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

[40 markah]

Jawab **semua** soalan dalam bahagian ini.

- 1 Rajah 1 menunjukkan tiga titik R , S dan T yang dilukis pada suatu satah Cartes.
Diagram 1 shows three points, R , S and T drawn on a Cartesian plane.



Rajah 1 / Diagram 1

- (a) Titik U tidak dilukis pada Rajah 1 dan diberi bahawa $RSTU$ membentuk sebuah segi empat tepat. Nyatakan koordinat titik U .
Point U is not drawn in Diagram 1 and given that $RSTU$ forms a rectangle. State the coordinates of point U .

[1 markah / mark]

- (b) Hitung koordinat titik M jika titik S ialah titik tengah bagi garis lurus UM .
Calculate the coordinates of point M if point S is the midpoint of the straight line UM .

[2 markah / marks]

Jawapan / Answer :

(a)

(b)

- 2 (a) Diberi set $P = \{1, 2, 4, 5\}$ dan set $R = \{5, 6, 7\}$. Senaraikan unsur bagi set $(P \cap R)'$.

Given set $P = \{1, 2, 4, 5\}$ and set $R = \{5, 6, 7\}$. List the elements of set $(P \cap R)'$.

[1 markah / mark]

- (b) Gambar rajah Venn di ruang jawapan menunjukkan set J , set K dan set L dengan keadaan set semesta, $\xi = J \cup K \cup L$. Lorek set $K' \cap (J \cup L)$ pada rajah tersebut.

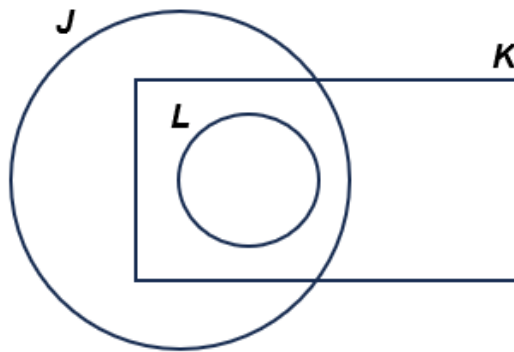
The Venn diagram in the answer space shows set J , set K and set L where the universal set, $\xi = J \cup K \cup L$. Shade set $K' \cap (J \cup L)$ on the diagram.

[2 markah / marks]

Jawapan / Answer :

(a)

(b)



- 3 (a) Gabungkan dua pernyataan berikut untuk membentuk satu pernyataan benar.
Combine two of the following statements to form a true statement.

Pernyataan 1 : 16 ialah nombor genap. <i>Statement 1 : 16 is an even number.</i>

Pernyataan 2 : 16 ialah kuasa dua sempurna. <i>Statement 2 : 16 is a perfect square.</i>

[1 markah / mark]

- (b) Tentukan sama ada hujah yang diberikan kuat atau lemah serta meyakinkan atau tidak meyakinkan.
Determine whether the given arguments are strong or weak, and cogent or not cogent.

Premis 1 / *Premise 1* : $3 \times 5 = 15$

Premis 2 / *Premise 2* : $6 \times 5 = 30$

Premis 3 / *Premise 3* : $9 \times 5 = 45$

Kesimpulan : Hasil darab gandaan 3 dan 5 berakhir dengan digit 0 atau 5.
Conclusion : The product of multiples of 3 and 5 end with digit 0 or 5.

[1 markah / mark]

- (c) Berikut merupakan suatu pernyataan yang palsu. Berikan satu penyangkal untuk menafikan pernyataan tersebut.
The following is a false statement. Give one counter-example to negate the statement.

“Semua poligon mempunyai dua atau lebih pepenjuru” <i>“All polygons have two or more diagonals”</i>
--

[1 markah / mark]

Jawapan / *Answer* :

(a)

(b)

(c)

- 4 (a) Syuhada menetap di Semenanjung Malaysia. Dia ingin membeli satu polisi insurans motor. Berikut ialah maklumat kenderaan yang ingin diinsuranskannya.
Syuhada stays in Peninsular Malaysia. She wants to buy a motor insurance policy. The following is the information regarding the vehicle she wants to insure.

Jumlah yang ingin diinsuranskan / <i>Sum insured</i>	: RM60 000
Umur kenderaan / <i>Age of vehicle</i>	: 6 tahun / <i>years</i>
Kapasiti enjin / <i>Engine capacity</i>	: 1600 cc
NCD	: 30%

Hitung premium kasar bagi polisi pihak ketiga, kebakaran dan kecurian kenderaan tersebut jika premium asas polisi komprehensifnya ialah RM1 839.50.

Calculate the gross premium for the following vehicle under the third party, fire and theft policy if the basic premium of comprehensive policy is RM1 839.50.

[3 markah / *marks*]

- (b) Ravi menginsuranskan kedainya dengan polisi insurans bernilai RM200 000 yang memerlukan ko-insurans sebanyak 75% dan deduktibel sebanyak RM8 000. Nilai boleh insurans kedainya ialah RM300 000. Selepas beberapa bulan, kedai Ravi telah mengalami kebakaran dan dia diisytiharkan mengalami kerugian menyeluruh. Hitung bayaran pampasan yang diterimanya?

Ravi insures his shop with a RM200 000 insurance policy with calling for 75% co-insurance and has a deductible of RM8 000. The insurable value of the shop is RM300 000. After a few months, Ravi's shop suffered a fire and he was declared a total loss. Calculate the amount compensation he will receive.

[2 markah / *marks*]

Jawapan / *Answer* :

(a)

(b)

- 6 Jadual 1 menunjukkan mata yang akan diperolehi oleh sesebuah kelab berdasarkan keputusan perlawanan dalam Liga Bola Sepak.
Table 1 shows the points that will be earned by a club based on the results of matches in the Football League.

Keputusan Result	Menang Win	Seri Draw	Kalah Loss
Mata Point	3	1	0

Jadual 1 / Table 1

Jumlah perlawanan bagi sesebuah kelab ialah 38 perlawanan. Kelab Marikh telah mengalami 4 kekalahan dan mengumpul 82 mata. Dengan menggunakan kaedah matriks, cari bilangan menang dan bilangan seri bagi Kelab Marikh.

The total number of matches for a club is 38 matches. Marikh Club has suffered 4 losses and collected 82 points. Using the matrix method, find the number of wins and the number of draws for Marikh Club.

[5 markah / marks]

Jawapan / Answer :

- 7 (a) Pada ruang jawapan, lakarkan graf $f(x) = x^2 - 2$.
In the answer space, sketch the graph $f(x) = x^2 - 2$.

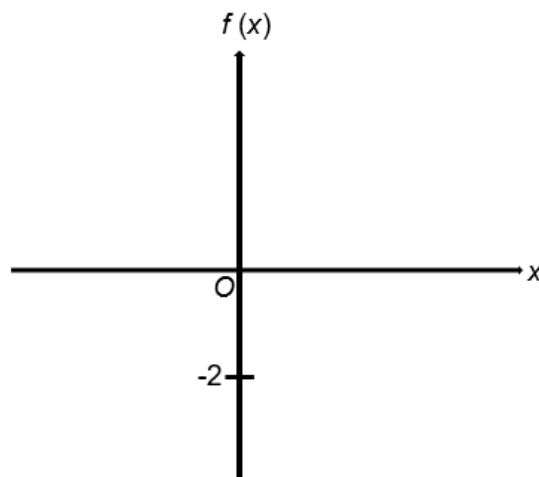
[1 markah / mark]

- (b) Diberi bahawa sebuah silinder mempunyai tinggi 6 cm, jejari x cm dan isi padu $(37x + 35)\pi \text{ cm}^3$. Hitung jejari, dalam cm, silinder itu.
Given that a cylinder has a height of 6 cm, radius of x cm and a volume of $(37x + 35)\pi \text{ cm}^3$. Calculate the radius, in cm, of the cylinder.

[4 markah / marks]

Jawapan / Answer :

(a)



(b)

- 8 Sebuah kotak mengandungi tiga batang pen biru, B dan dua batang pen merah, M . Dua batang pen dipilih secara rawak dari kotak tersebut satu demi satu tanpa pemulangan.
A box contains three blue pens, B and two red pens, M . Two pens are chosen randomly one by one from the box without replacement.

- (a) Wakilkan situasi di atas dengan melengkapkan gambar rajah pokok di ruang jawapan.

Represent the above situation using a tree diagram in the answer space.

[1 markah / mark]

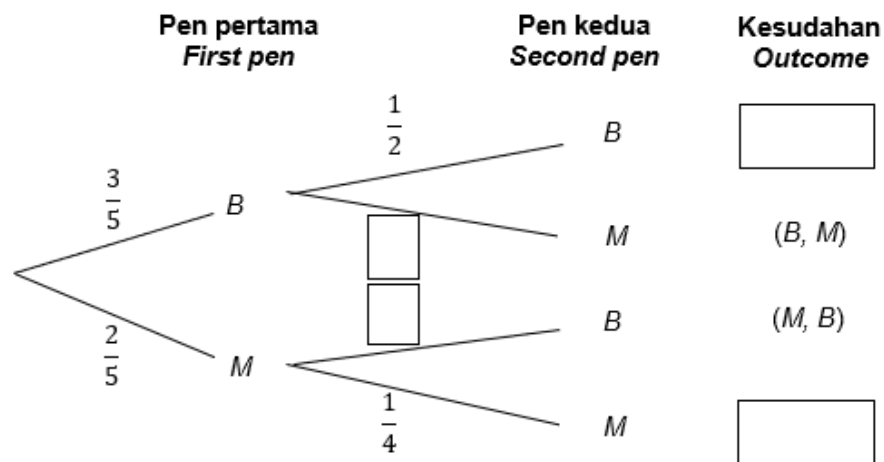
- (b) Hitung kebarangkalian bahawa
Calculate the probability that

- (i) kedua-dua pen berwarna biru.
both are blue pens.
- (ii) kedua-dua pen berlainan warna.
both pens are different colours.

[3 markah / marks]

Jawapan / Answer :

- (a)



- (b) (i)

- (ii)

- 9 (a) Jadual 2 menunjukkan skor yang diperolehi oleh dua orang atlet dalam latihan sukan terjun papan anjal individu.
Table 2 shows the scores obtained by two athletes in individual springboard sport training.

Atlet Athletes	Skor Score							
Arsyad	8.9	9.4	8.7	9.9	9.8	7.2	9.5	8.4
Hakim	9.8	9.3	8.0	8.1	7.5	8.4	8.6	9.1

Jadual 2 / Table 2

Hitung sisihan piawai bagi Arsyad.

Calculate the standard deviation for Arsyad.

[3 markah / marks]

- (b) Diberi nilai varians bagi Hakim ialah 0.505. Tentukan siapa lebih konsisten dalam pertandingan tersebut. Nyatakan justifikasi anda.
Given the variance value for Hakim is 0.505. Determine who is more consistent in the competition. State your justification.

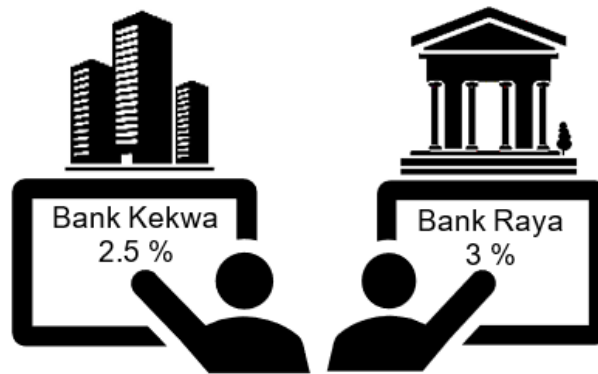
[2 markah / marks]

Jawapan / Answer :

(a)

(b)

- 10 Rajah 3 menunjukkan tawaran kadar faedah atas simpanan tetap oleh dua buah bank.
Diagram 3 shows interest rate offers on fixed deposits by two banks.



Rajah 3 / Diagram 3

Sekiranya Encik Wong ingin menyimpan sebanyak RM35 000 dalam tempoh 7 tahun, bank manakah yang patut Encik Wong pilih? Justifikasikan jawapan anda.

If Encik Wong wants to save RM35 000 within 7 years, which bank should Encik Wong choose? Justify your answer.

[3 markah / marks]

Jawapan / Answer :

Bahagian B

[45 markah]

Jawab **semua** soalan dalam bahagian ini.

- 11** Puan Asmah menyiapkan tempahan x biji karipap dan y biji donat pada minggu lepas. Maklumat di bawah berkaitan dengan tempahan Puan Asmah.
Puan Asmah completed the order of x curry puffs and y donuts last week. The information below is related to Puan Asmah's orders.

Jumlah karipap dan donat yang disediakan selebih-lebihnya 80 biji.
The amount of curry puffs and donuts prepared is at most 80 pieces.

Bilangan minimum karipap ialah 30 biji.
The minimum number of curry puffs is 30 pieces.

Bilangan minimum donat ialah 20 biji.
The minimum number of donuts is 20 pieces.

- (a) Tulis dua ketaksamaan linear, selain $x \geq 30$, $x \geq 0$ dan $y \geq 0$, yang mewakili situasi di atas.
Write two linear inequalities, other than $x \geq 30$, $x \geq 0$ and $y \geq 0$, which represent the above situation.

[2 markah / marks]

- (b) **Untuk ceraian soalan ini, gunakan kertas graf yang disediakan.**
For this part of question, use the graph paper provided.

Dengan menggunakan skala 2 cm kepada 10 unit pada kedua-dua paksi, lukis dan lorek rantau yang memuaskan sistem ketaksamaan linear yang dinyatakan di 11 (a).
Using a scale of 2 cm to 10 units on both axes, draw and shade the region that satisfies the system of linear inequalities stated in 11 (a).

[4 markah / marks]

- (c) Daripada graf di 11(b), tentukan bilangan minimum dan maksimum karipap yang disediakan apabila dia menyiapkan 25 biji donat.
From the graph at 11(b), determine the minimum and maximum number of curry puffs completed when she completed 25 donuts.

[2 markah / marks]

Jawapan / *Answer* :

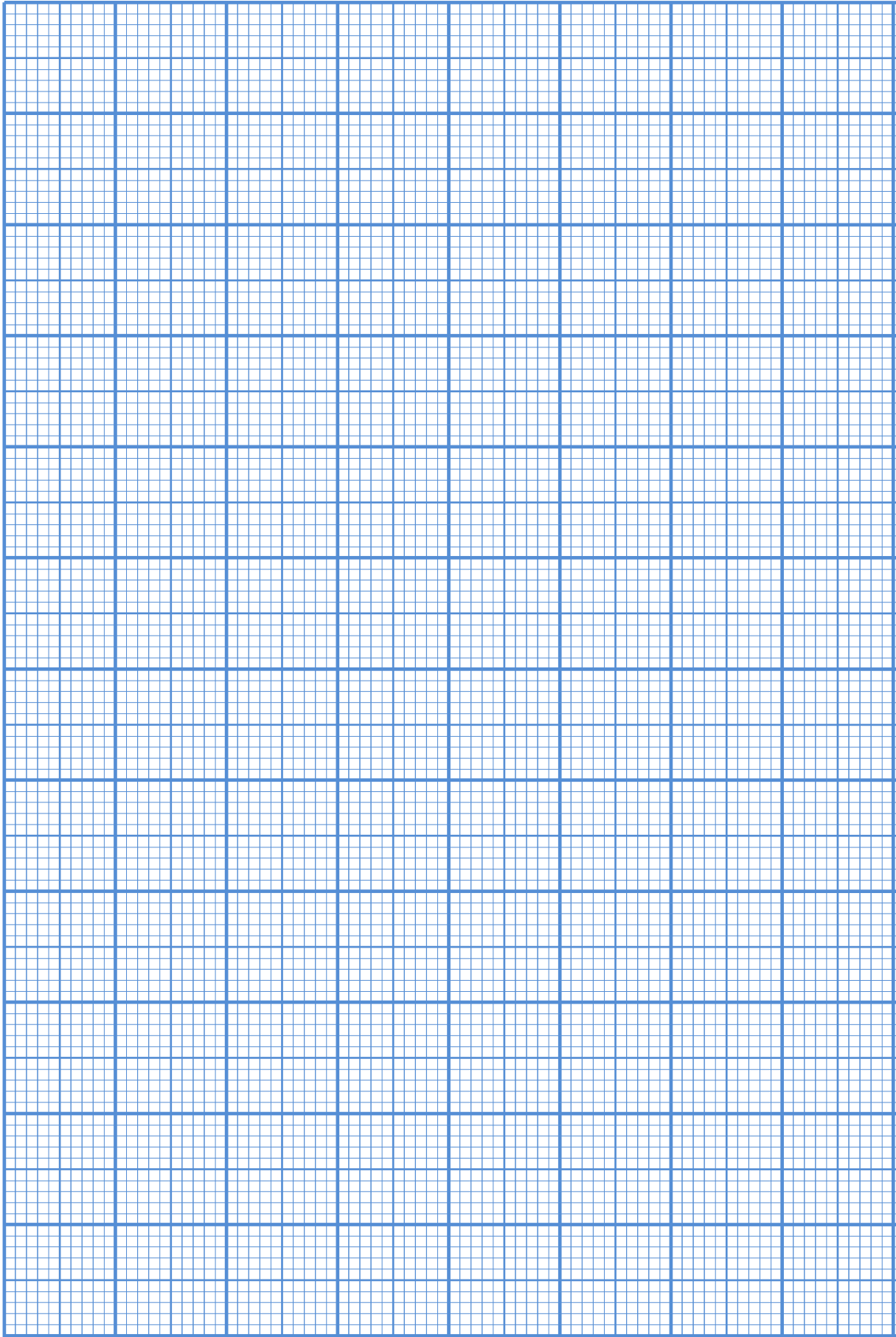
(a)

(b) Rujuk graf / *Refer graph*.

(c) Minimum =

Maksimum / *Maximum* =

Graf untuk Soalan 11
Graph for Question 11



- 12** Rajah 4.1 di ruang jawapan menunjukkan sebuah sisi empat M , yang dilukis pada suatu satah Cartes.

Diagram 4.1 in the answer space shows a quadrilaterals M , drawn on a Cartesian plane.

- (a) (i) Pada ruang jawapan, lukis imej bagi sisi empat M di bawah pembesaran dengan faktor skala -2 pada pusat $(6, 4)$.

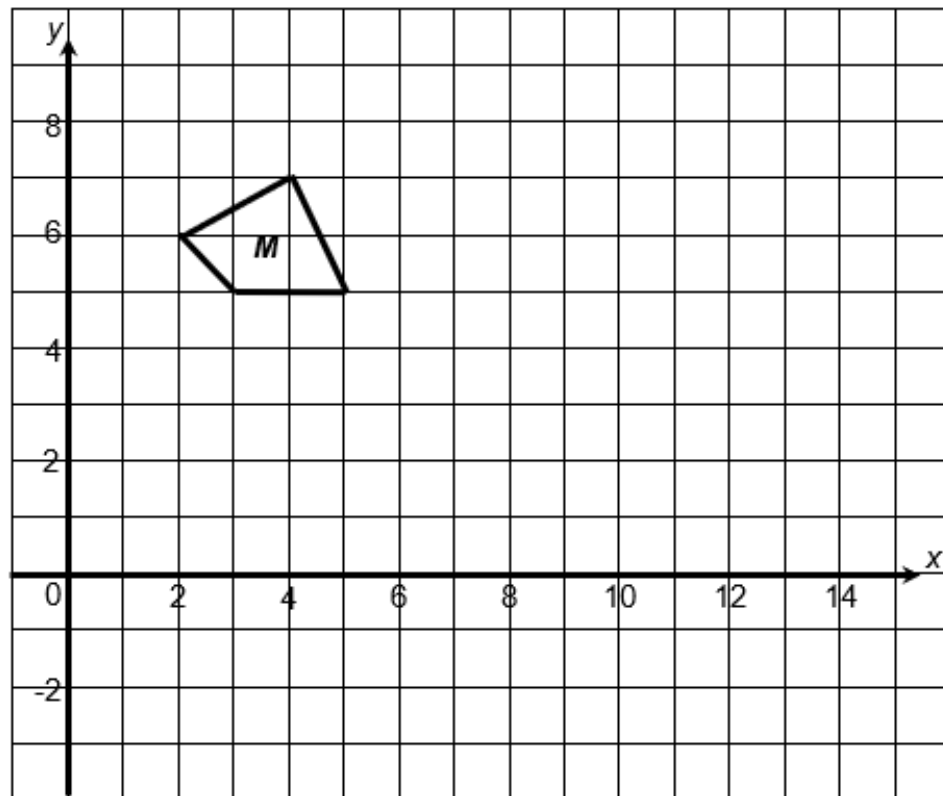
In the answer space, draw the image of quadrilaterals M under an enlargement with the scale factor of -2 at centre $(6, 4)$.

- (ii) Jika luas M ialah 13 unit^2 , cari luas imej M' .
If the area of M is 13 unit^2 , find the area of the image M' .

[4 markah / marks]

Jawapan / Answer :

- (a) (i)

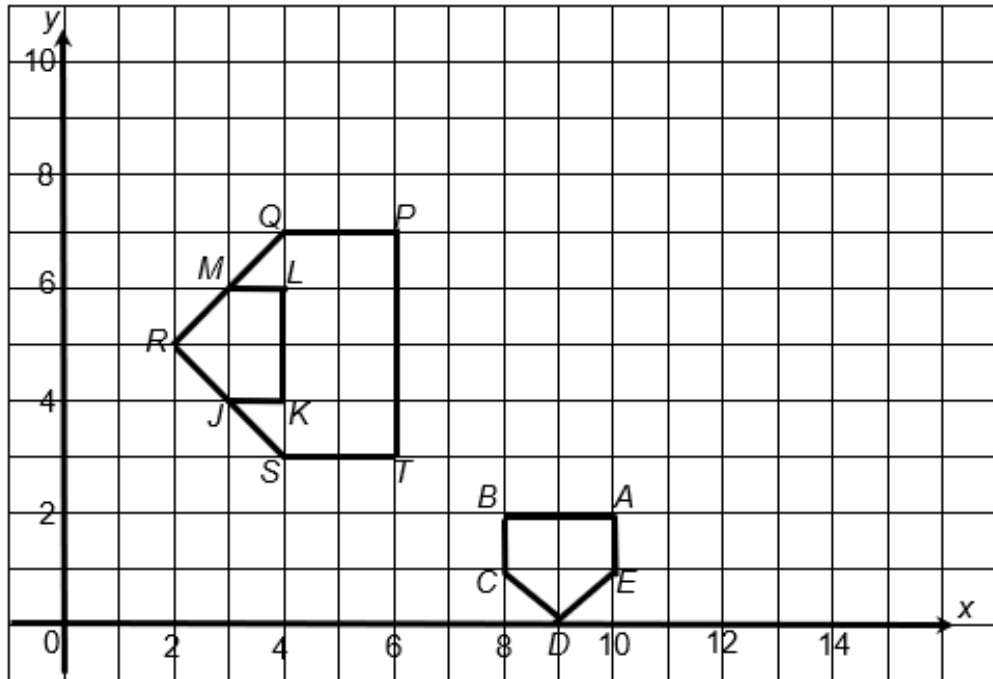


Rajah 4.1 / Diagram 4.1

- (ii)



- 12 (b) Rajah 4.2 menunjukkan tiga pentagon tidak sekata $ABCDE$, $PQRST$ dan $LMRJK$ yang dilukis pada suatu satah Cartes. *Diagram 4.2 shows three irregular pentagons $ABCDE$, $PQRST$ and $LMRJK$ drawn on a Cartesian plane.*



Rajah 4.2 / Diagram 4.2

Pentagon $ABCDE$ ialah imej bagi pentagon $PQRST$ di bawah gabungan transformasi UV . Huraikan selengkapnya transformasi:

Pentagon $ABCDE$ is the image of the pentagon $PQRST$ under the combined transformation UV . Describe, in full the transformation:

(i) V

(ii) U

[6 markah / marks]

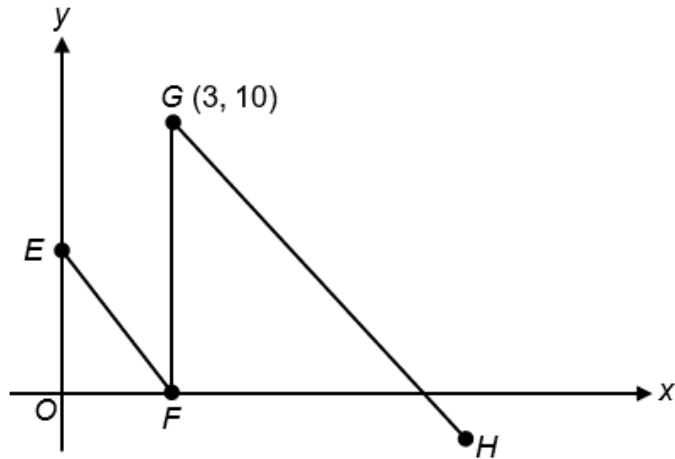
Jawapan / Answer :

(b) (i)

(ii)

- 13 (a) Rajah 5.1 menunjukkan tiga garis lurus EF , FG dan GH . Titik F berada pada paksi- x . EF selari dengan GH dan FG selari dengan paksi- y . Diberi bahawa persamaan EF ialah $2x + y = 6$.

Diagram 5.1 shows three straight lines EF , FG and GH . Point F is on the x -axis. EF is parallel to GH and FG is parallel to the y -axis. Given that the equation of EF is $2x + y = 6$.



Rajah 5.1 / Diagram 5.1

- (i) Nyatakan persamaan garis lurus FG .
State the equation of straight line FG .
- (ii) Tentukan pintasan- x bagi GH .
Determine the x -intercept for GH .

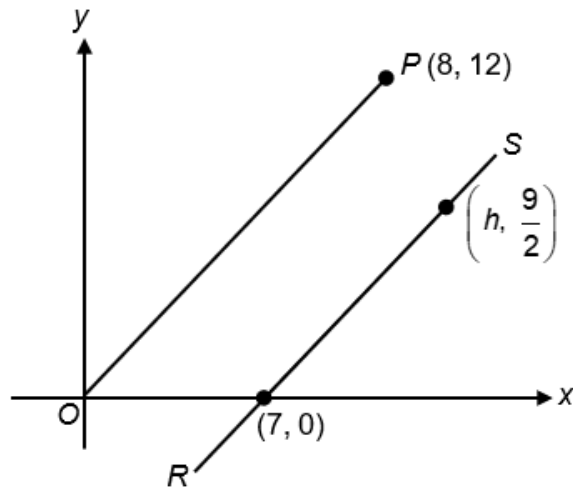
[5 markah / marks]

Jawapan / Answer :

(a) (i)

(ii)

- 13 (b) Rajah 5.2 menunjukkan dua garis lurus, OP dan RS , dilukis pada suatu satah Cartes. Garis lurus OP adalah selari dengan RS .
 Diagram 5.2 shows two straight lines, OP and RS , drawn on a Cartesian plane. The straight line OP is parallel to RS .



Rajah 5.2 / Diagram 5.2

Cari / Find

- (i) kecerunan garis OP .
the gradient of OP .
- (ii) nilai h .
the value of h .

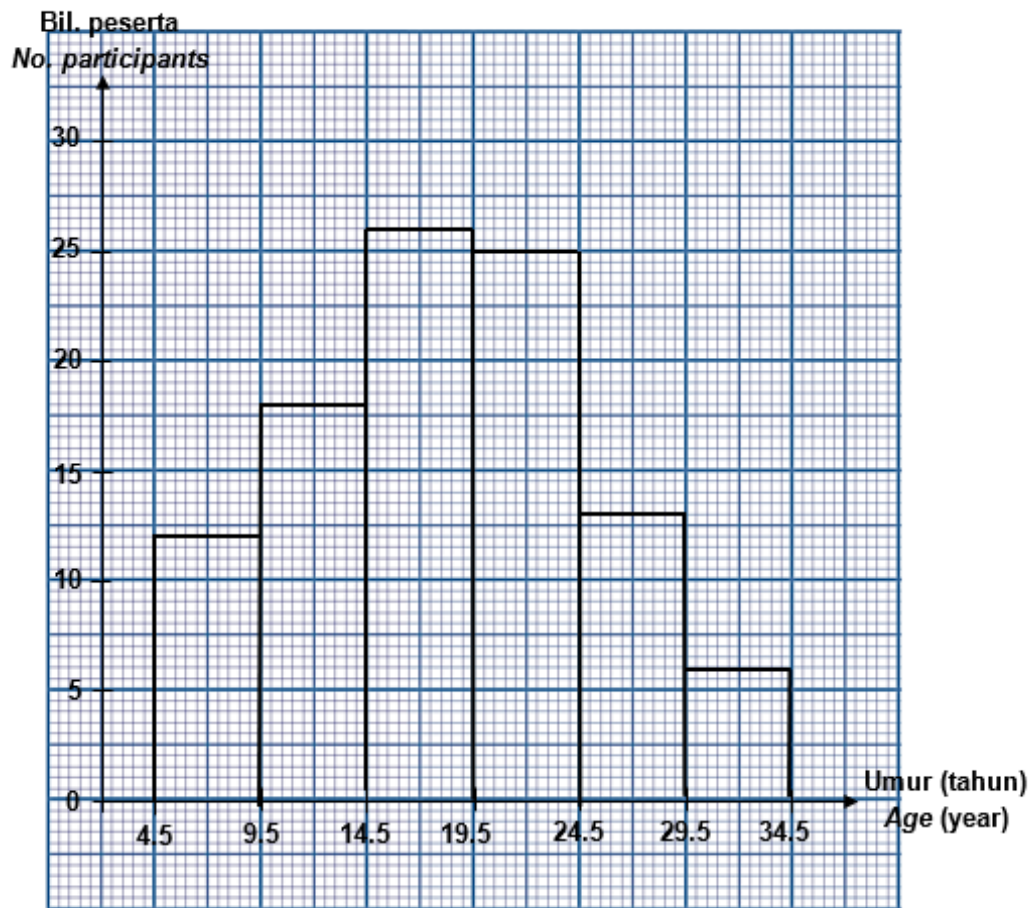
[4 markah / marks]

Jawapan / Answer :

(b) (i)

(ii)

- 14 (a) Rajah 6 ialah sebuah histogram yang menunjukkan umur, dalam tahun, peserta pengakap pada perkhemahan peringkat daerah Alor Gajah.
Diagram 6 is a histogram shows the age, in years, of scout participants at the Alor Gajah district level camp.



Rajah 6 / Diagram 6

- (i) Hitung bilangan peserta yang hadir.
Determine the number of participants present.
- (ii) Seterusnya, lengkapkan Jadual 2 di ruang jawapan.
Hence, complete Table 2 in the answer space.

[2 markah / marks]

[3 markah / marks]

- (b) Berdasarkan Jadual 3, lukis satu ogif dengan menggunakan skala 2 cm kepada 5 tahun pada paksi mengufuk dan 2 cm kepada 10 orang pengakap pada paksi mencancang.
Based on Table 3, draw an ogive using a scale of 2 cm to 5 years on the horizontal axis and 2 cm to 10 scouts on the vertical axis.

[4 markah / marks]

- (c) Daripada ogif di 14(b), cari kuartil ketiga.
From the ogive in 14(b), find the third quartile.

[1 markah / mark]

Jawapan / Answer :

- (a) (i)

- (ii)

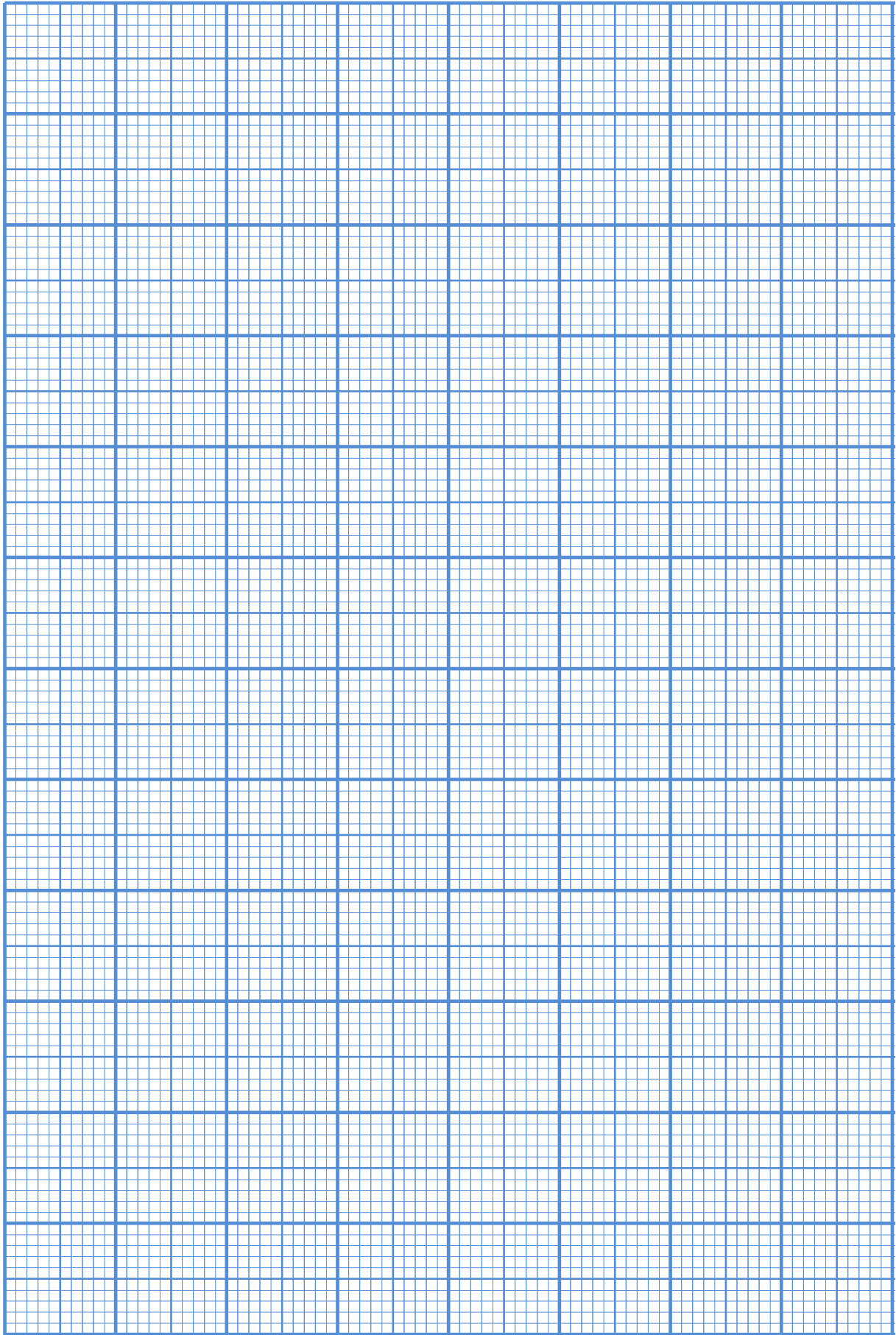
Umur (tahun) Ages (years)	Sempadan atas Upper boundary	Kekerapan longgokan Cumulative frequency
0 - 4		
5 - 9		
10 - 14		
15 - 19		
20 - 24		
25 - 29		
30 - 34		

Jadual 3 / Table 3

- (b) Rujuk graf / Refer graph.

- (c)

Graf untuk Soalan 14
Graph for Question 14



- 15 (a) Encik Murugan dan isterinya menerima pendapatan tahunan sebanyak RM78 000 dan RM50 500 masing-masing pada tahun 2023. Mereka telah menderma sebanyak RM1000 masing-masing kepada satu badan kebajikan yang layak untuk pengecualian cukai pada tahun tersebut. Encik Murugan dan isterinya telah memilih taksiran cukai bersama. Jadual 4 menunjukkan pelepasan cukai yang hendak dituntut oleh mereka. *Encik Murugan and his wife received annual salaries of RM78 000 and RM50 500 respectively in 2023. They each donated RM1 000 to a government-approved welfare organisation in that year which allowed them for tax exemption. Encik Murugan and his wife have chosen joint tax assessment. Table 4 shows the tax reliefs claimed by them.*

Pelepasan cukai Tax relief	Encik Murugan	Isteri Wife
Individu / <i>Individual</i>	9 000	9 000
Gaya hidup (Had 2 500) <i>Lifestyle (Limited to 2 500)</i>	2 800	2 400
Insurans hayat dan KWSP (Had 7 000) <i>Life insurance and EPF (Limited to 7 000)</i>	3 500	3 200
Insurans perubatan (Had 3 000) <i>Medical insurance (Limited to 3 000)</i>	2 900	3 100

Jadual 4 / Table 4

Banjaran Pendapatan Bercukai Chargeable Income (RM)	Pengiraan Calculations (RM)	Kadar Rate (%)	Cukai Tax (RM)
70 001 – 100 000	70 000 pertama <i>On the first 70 000</i>	21	4 600
	30 000 seterusnya <i>Next 30 000</i>		6 300
100 001 – 250 000	100 000 pertama <i>On the first 100 000</i>	24	10 900
	150 000 seterusnya <i>Next 150 000</i>		36 000

Jadual 5 / Table 5

- (i) Hitung jumlah pelepasan cukai yang dituntut oleh mereka.
Calculate the total tax relief claimed by them.

[2 markah / marks]

- (ii) Dengan menggunakan Jadual 5, hitung cukai pendapatan yang perlu dibayar.
By using Table 5, calculate the income tax payable.

[4 markah / marks]

Jawapan / Answer :

(a) (i)

(ii)

- 15** (b) Kira jumlah harga asal tanpa cukai bagi sepotong kek dan secawan kopi jika harga termasuk 8% cukai perkhidmatan bagi sepotong kek dan secawan kopi ialah RM12.96 dan RM17.28 masing-masing.
Calculate the total price of a piece of cake and a cup of coffee excluded tax if the prices including 8% of service tax are RM12.96 and RM17.28 respectively.

[2 markah / marks]

Jawapan / Answer :

(b)

Bahagian C

[15 markah]

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

- 16** Keluarga Encik Farid balik ke kampung pada cuti perayaan Hari Raya Aidilfitri di Johor dengan menaiki sebuah kereta.

Encik Farid's family returned to the village during the Hari Raya Aidilfitri holiday in Johor by car.

- (a) Jadual 6 menunjukkan sebahagian maklumat perjalanan Encik Farid. Jarak di antara bandar Melaka dan bandar Batu Pahat ialah 90 km.

Table 6 shows an information of Encik Farid's journey. The distance between Malacca city and Batu Pahat city is 90 km.

Masa Time	Huraian Description
8.10 a.m.	Bertolak dari Bandar Melaka <i>Depart from Malacca city</i>
8.55 a.m.	Berhenti di bandar Muar selepas memandu sejauh 45 km. <i>Stop at Muar city after driving for 45 km</i>
9.10 a.m.	Bergerak dari bandar Muar ke bandar Batu Pahat <i>Moves from Muar city to Batu Pahat city</i>
10.05 a.m.	Tiba di bandar Batu Pahat <i>Arrive at Batu Pahat city</i>

Jadual 6 / Table 6

- (i) Isi petak kosong pada Rajah 7 di ruang jawapan bagi menggambarkan keseluruhan perjalanan.

Fill in the blanks in Diagram 7 in the answer space to represent the whole journey.

[2 markah / marks]

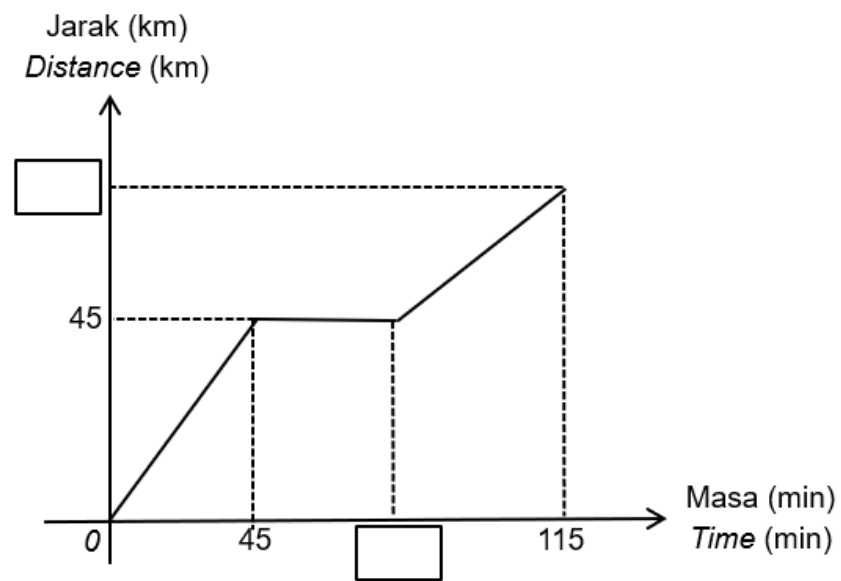
- (ii) Hitung laju purata, dalam kmj^{-1} , keseluruhan perjalanan.

Calculate the average speed, in kmh^{-1} , of the whole journey.

[2 markah / marks]

Jawapan / Answer :

(a) (i)



Rajah 7 / Diagram 7

(ii)

- (b) Jadual 7 menunjukkan hasil kajian anak Encik Farid berkenaan dengan pelbagai jenis makanan yang digemari oleh saudara mara mereka.

Table 7 shows the results of Encik Farid's child's research regarding the various types of food chosen by their relatives.

Makanan Food	Nama Penggemar Fan of Name
Lemang (L)	Ben, Didi, Nazreen
Rendang Daging (R)	Nazreen, Lin, Adam
Ketupat (K)	Lin, Shikin
Ayam Goreng (A)	Ben, Ain, Adam, Shikin
Sayur Lodeh (S)	Didi, Ain

Jadual 7 / Table 7

Berdasarkan Jadual 7, lukis satu graf mudah.

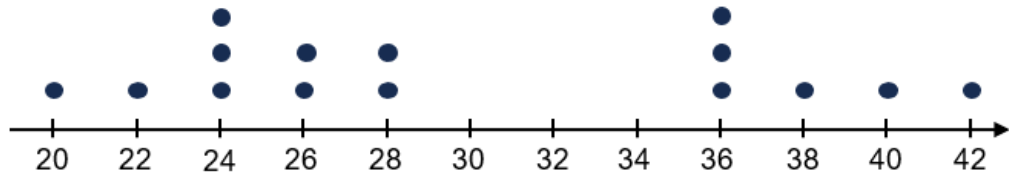
Based on Table 7, draw a simple graph.

[3 markah / marks]

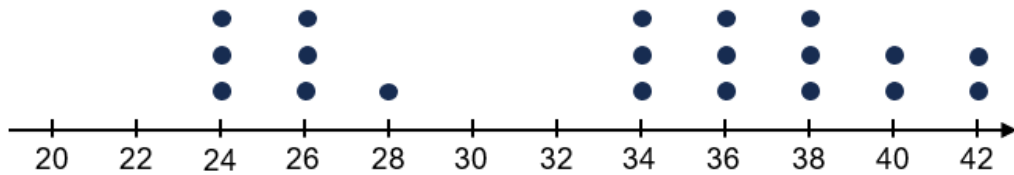
Jawapan / Answer :

(b)

- (c) Plot titik di bawah menunjukkan saiz kasut bagi ahli keluarga Encik Farid dan ahli keluarga isterinya mengikut ukuran Eropah.
The dot plots below show the shoe sizes for Encik Farid's family members and his wife's family members according to European measurements.



Ahli keluarga Encik Farid
Encik Farid's family members



Ahli keluarga isteri Encik Farid
Family members of Encik Farid's wife

- (i) Manakah data yang menunjukkan serakan yang lebih kecil? Berikan justifikasi anda.
Which data show smaller dispersion? Give your justification. [2 markah / marks]
- (ii) Hitung min bagi ukuran saiz kasut ahli keluarga isteri Encik Farid.
Calculate the mean for the shoe size measurements of family members of Encik Farid's wife. [3 markah / marks]

Jawapan / Answer :

(i)

(ii)

- (d) Encik Farid merancang untuk membeli sebuah kereta baharu. Kereta tersebut berharga RM80 000 dan beliau bercadang untuk membayar wang pendahuluan sebanyak 10% secara tunai. Beliau ingin menyimpan wang untuk membayar wang pendahuluan kereta dalam tempoh 10 bulan. Baki pendapatan beliau adalah sebanyak RM500 sebulan.
Encik Farid plans to buy a new car. The car costs RM80 000 and he plans to pay 10% down payment in cash. He wants to save money for the down payment within 10 months. His remaining income is as much as RM500 per month.

Adakah kedudukan kewangan semasa Encik Farid membolehkannya mencapai matlamatnya? Berikan justifikasi anda.

Does Encik Farid's current financial position allow him to achieve his goals? Give your justification.

[3 markah / marks]

Jawapan / Answer :

(d)

- 17 (a) Adib mengalami kecederaan di kaki akibat terjatuh ketika menunggang basikal. Bapanya telah memandu kereta menuju ke farmasi berdekatan untuk membeli ubat dengan laju awal keretanya ialah 40 kmj^{-1} . Keretanya memecut dengan pecutan 120 kmj^{-2} dalam masa 10 minit. Kemudian, kereta itu bergerak dengan laju seragam selama 20 minit. Akhirnya kereta bapa Adib mengalami nyahpecutan dan berhenti dalam tempoh 5 minit. *Adib suffered a leg injury due to a falling while riding a bicycle. His father drove to a nearby pharmacy to buy medicine at an early speed of 40 kmh^{-1} . The car accelerates with an acceleration of 120 kmh^{-2} in 10 minutes. Then, the car moved at a uniform speed for 20 minutes. Finally, Adib's father's car decelerated and stopped within 5 minutes.*

- (i) Lengkapkan graf laju-masa dalam Rajah 8 di ruang jawapan untuk menggambarkan pergerakan kereta bapa Adib bagi keseluruhan perjalanannya. *Complete the speed-time graph in Diagram 8 in the answer space to describe the movement of Adib's father's car for the whole journey.*

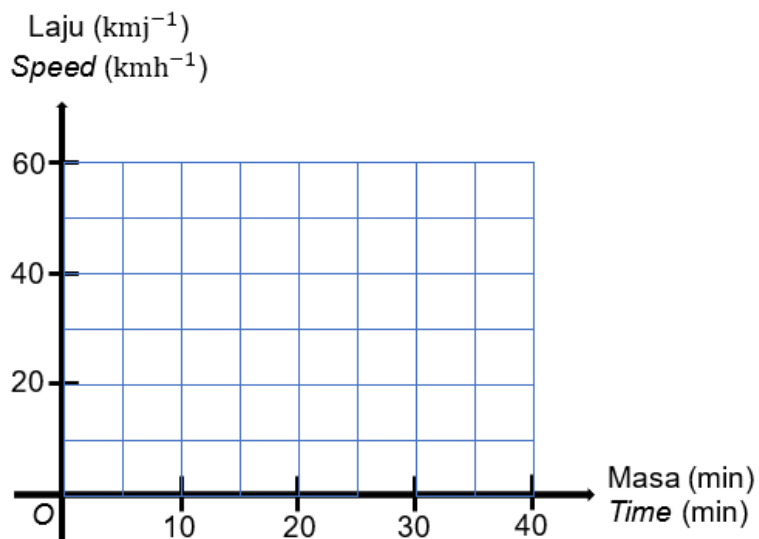
[3 markah / marks]

- (ii) Hitung jarak yang dilalui bagi 10 minit yang pertama. *Calculate the distance traveled for the first 10 minutes.*

[2 markah / marks]

Jawapan / Answer :

(i)



Rajah 8 / Diagram 8

(ii)

- (b) Jadual 8 menunjukkan pelan kewangan bulanan bapa Adib.
Table 8 shows Adib's father's monthly financial plan.

Pendapatan <i>Income</i>	Amaun (RM) <i>Amount (RM)</i>
Pendapatan aktif <i>Active income</i>	3 400
Pendapatan pasif <i>Passive income</i>	500
Perbelanjaan tetap bulanan <i>Monthly fixed expenses</i>	Amaun (RM) <i>Amount (RM)</i>
Ansuran pinjaman rumah <i>Housing loan instalment</i>	800
Insurans <i>Insurance</i>	250
Ansuran pinjaman kereta <i>Car loan instalment</i>	500
Perbelanjaan tidak tetap bulanan <i>Monthly variable expenses</i>	Amaun (RM) <i>Amount (RM)</i>
Bil-bil utiliti <i>Utility bills</i>	150
Makanan dan minuman <i>Food and drinks</i>	500
Belanja petrol <i>Petrol expenses</i>	300

Jadual 8 / Table 8

Bapa Adib mempunyai matlamat untuk menyimpan wang sebanyak RM8 000 bagi menampung kos rawatan isterinya yang akan bersalin dalam tempoh 6 bulan akan datang. Adakah dia dapat mencapai matlamat kewangannya? Berikan justifikasi anda.

Adib's father has a goal of saving RM8 000 to cover the cost of treatment for his wife who will give birth in the next 6 months. Will he be able to achieve his financial goals? Give your justification.

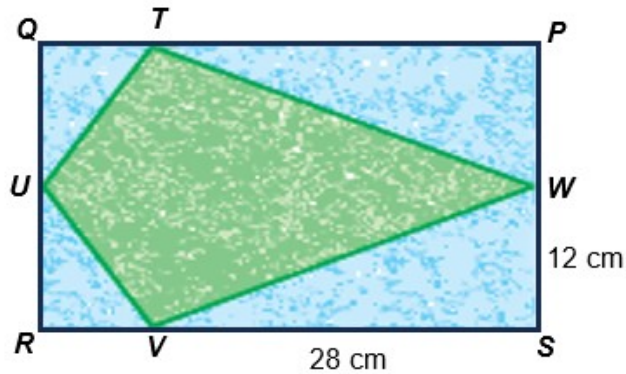
[3 markah / marks]

Jawapan / Answer :

(b)

- (c) Sementara menunggu Adib mendapatkan rawatan, bapanya telah terpancang sekeping bingkai gambar di dinding klinik tersebut. Rajah 9 menunjukkan bingkai gambar tersebut yang berbentuk segi empat tepat $PQRS$.

While waiting for Adib to get treatment, his father had noticed a picture frame on the wall of the clinic. Diagram 9 shows the picture frame which is in the shape of a rectangle $PQRS$.



Rajah 9 / Diagram 9

$TUVW$ ialah sebuah layang yang terterap di dalam segi empat tepat $PQRS$. Diberi perimeter $PQRS$ ialah 120 cm, cari luas $TUVW$, dalam cm^2 .

$TUVW$ is a kite embedded within the rectangle $PQRS$. Given the perimeter of $PQRS$ is 120 cm, find the area of $TUVW$, in cm^2 .

[3 markah / marks]

Jawapan / Answer :

(c)

- (d) Selepas mendapatkan rawatan, bapa Adib telah ke kaunter farmasi bagi mendapatkan ubat. Dia dimaklumkan bahawa jumlah kos rawatan dan konsultasi yang dikenakan masing-masing sebanyak RM 125₆ dan RM 132₄. Apabila hendak membuat pembayaran, dia mendapati hanya mempunyai wang sebanyak RM 1012₃ di dalam dompetnya.
After getting treatment, Adib's father went to the pharmacy counter to get medicine. He was informed that the total cost of treatment and consultancy charged was RM 125₆ and RM 132₄ respectively. When he wanted to pay, he found that he only had RM1012₃ in his wallet.
- (i) Hitung jumlah kos rawatan dan konsultasi yang dikenakan dalam asas 10.
Calculate the total cost of treatment and consultation in base 10.
 [2 markah / marks]
- (ii) Hitung baki wang, dalam asas 9, yang perlu dibayar oleh bapa Adib.
Calculate the remaining money, in base 9, to be paid by Adib's father.
 [2 markah / marks]

Jawapan / Answer :

(i)

(ii)