

MODUL PERKEMBANGAN PEMBELAJARAN 3 (MPP 3)

TINGKATAN 5
MATEMATIK
Kertas 1
Oktober 2023

1449/1

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

Satu jam tiga puluh minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini adalah dalam dwibahasa.*
2. *Soalan dalam Bahasa Melayu mendahului soalan yang sepadan dalam Bahasa Inggeris.*
3. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

Kertas soalan ini mengandungi 30 halaman bercetak

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

$\text{Amount of required insurance} = \left(\begin{array}{c} \text{Percentage of} \\ \text{co-insurance} \end{array}\right) \times \left(\begin{array}{c} \text{Insurable value} \\ \text{of property} \end{array}\right)$ | |

PERKAITAN DAN ALGEBRA
RELATIONSHIP AND ALGEBRA

- | | |
|--|--|
| 1 Jarak/ <i>Distance</i>
$= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ | 2 Titik tengah / <i>Midpoint</i> ,
$(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$ |
| 3 Laju purata = $\frac{\text{Jumlah jarak}}{\text{Jumlah masa}}$

$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$ | 4 $m = \frac{y_2 - y_1}{x_2 - x_1}$ |
| 5 $A^{-1} = \frac{1}{ad - bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$ | 6 $m = -\frac{\text{pintasan} - y}{\text{pintasan} - x}$
$m = -\frac{y - \text{intercept}}{x - \text{intercept}}$ |

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 = $\pi r^2 h$

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- 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 $P(A') = 1 - P(A)$

Jawab **semua** soalan.
Answer **all** questions.

1 $25\left(\frac{1}{\sqrt[3]{216}}\right)^{-1} =$

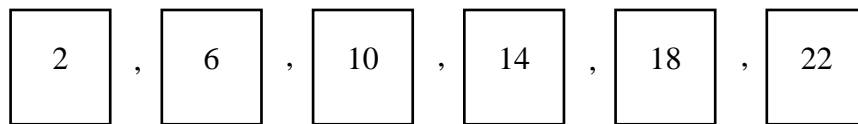
A 150

B 216

C $\frac{5}{6}$

D $\frac{25}{6}$

- 2 Rajah 1 menunjukkan enam keping kad nombor yang disusun mengikut suatu jujukan.
Diagram 1 shows six numbered cards that have been arranged according to a sequence.



Rajah 1
Diagram 1

Antara pola berikut yang manakah memuaskan urutan nombor tersebut?

Which of the following patterns satisfy the number sequence?

- A Mendarab 3 kepada nombor sebelumnya
Multiply 3 to the previous number
- B Membahagi 3 kepada nombor sebelumnya
Divided 3 to the previous number
- C Menolak 4 kepada nombor sebelumnya
Deduct 4 to the previous number
- D Menambah 4 kepada nombor sebelumnya
Add 4 to the previous number

3 Permudahkan / Simplify $\frac{(2pq^{-3})^3 \times (q^3)^{-2}}{p^6 q^{-14}}$.

A $\frac{8q}{p^3}$

B $\frac{2q}{p^3}$

C $\frac{8}{p^3 q}$

D $\frac{2}{p^3 q}$

- 4 Sumayyah telah membeli sebiji kek berbentuk segiempat tepat dengan lebar 15 cm dan panjang 20 cm sempena harijadi ibunya. Dia memotong keseluruhan kek itu sebanyak 24 bahagian berbentuk segiempat sama. $\frac{3}{4}$ daripada bahagian kek yang dipotong telah dimakan. Hitung luas dalam cm^2 bahagian kek yang masih tinggal.

Sumayyah has bought a rectangular cake with a width of 15 cm and a length of 20 cm for her mother's birthday. She cut the entire cake into 24 square-shaped pieces. $\frac{3}{4}$ of the cut portion of the cake was eaten. Calculate the area in cm^2 , the remaining part of the cake.

A 1.25×10

B 2.25×10^2

C 3.54×10^2

D 7.5×10

- 5 Rajah 2 menunjukkan lima orang murid yang diberikan kad nombor dengan asas berlainan dalam satu pertandingan kuiz Matematik. Siapakah yang mendapat nilai terbesar dan nilai terkecil?

Diagram 2 shows five students who were given number cards with different bases in a Mathematic quiz competition. Who got the largest value and the smallest value?

241_5	111100_2	1102_4	68_9	114_8
Rozita	Aishah	Helmy	Osman	Maznah

Rajah 2
Diagram 2

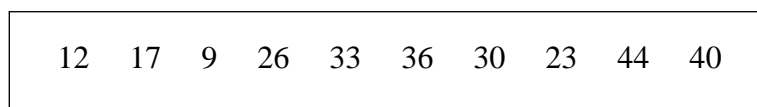
	Nilai terbesar <i>Largest value</i>	Nilai terkecil <i>Smallest value</i>
A	Rozita	Osman
B	Aishah	Maznah
C	Helmy	Aishah
D	Osman	Helmy

- 6 Nilai digit 4 bagi nombor 14321_5 dalam asas sepuluh ialah
The value of digit 4 in the number 14321_5 in base ten is

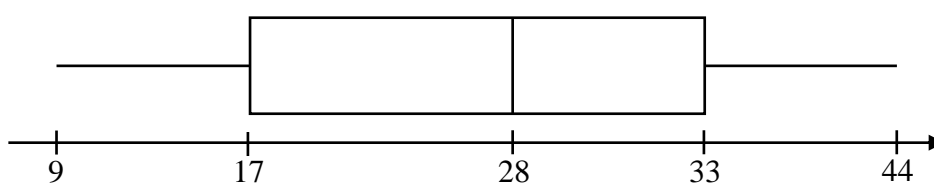
- A** 4
- B** 100
- C** 500
- D** 4000

- 7 Rajah 3(a) menunjukkan data tak terkumpul bagi suatu set data manakala Rajah 3(b) menunjukkan data tersebut telah diwakilkan dalam bentuk plot kotak.

Diagram 3(a) shows ungrouped data for a dataset while Diagram 3(b) shows that data has been represented in the form of a box plot.



Rajah 3(a)
Diagram 3(a)



Rajah 3(b)
Diagram 3(b)

Antara berikut, yang manakah tersalah label?
Which of the following is mislabeled?

- A 9
 - B 17
 - C 28
 - D 33
- 8 En Sufian memiliki sebidang tanah berkeluasan $40 \text{ m} \times 50.5 \text{ m}$. Kadar cukai tanah yang dikenakan ialah RM 0.43 setiap meter persegi. Hitung jumlah cukai tanah yang perlu dibayar oleh En Sufian untuk setahun.

Mr. Sufian owns a plot of land measuring $40 \text{ m} \times 50.5 \text{ m}$. The land tax rate charged is RM 0.43 per square meter. Calculate the amount of land tax to be paid by Mr. Sufian for a year.

- A RM 17.20
- B RM 21.50
- C RM 868.60
- D RM 2020.00

- 9 Jadual 1 menunjukkan kadar cukai jalan kereta milik persendirian di semenanjung Malaysia.

Table 1 shows the road tax rates for privately owned cars in Peninsular Malaysia.

Kapasiti enjin (cc) <i>Engine capacity (cc)</i>	Kadar Cukai Jalan <i>Road Tax Rate</i>	
	Kadar Asas <i>Base Rate</i>	Kadar Progresif <i>Progressive Rate</i>
1401 cc – 1600 cc	RM 90	-
1601 cc – 1800 cc	RM 200	+ RM 0.40 setiap cc melebihi 1600 cc + <i>RM 0.40 per cc over 1600 cc</i>
1801 cc – 2000 cc	RM 280	+ RM 0.50 setiap cc melebihi 1800 cc + <i>RM 0.50 per cc over 1800 cc</i>

Jadual 1
Table 1

Hitung cukai jalan sebuah kereta kegunaan persendirian dengan 1800 cc di Terengganu.
Calculate the road tax of a car for private use 1800 cc in Terengganu.

- A RM200
B RM280
C RM380
D RM800
- 10 Sebuah segi empat tepat mempunyai panjang $3x$ dan lebar $(3x-1)$. Antara berikut, yang manakah merupakan ungkapan kuadratik bagi luas segi empat tepat itu?
A rectangle has length $3x$ and width $(3x-1)$. Which of the following is the quadratic expression for the area of the rectangle?
- A $6x-1$
B $9x-3$
C $6x^2-x$
D $9x^2-3x$

- 11 Rajah 4 menunjukkan harga bagi dua jenis makanan semasa 'Happy Hour Meals'. Seorang pelanggan membayar RM25 untuk 3 set burger dan 4 set nasi ayam.

Diagram 4 shows the prices for two types of food during the 'Happy Hour Meals'. A customer pay RM25 for 3 sets of burgers and 4 sets of chicken rice.



Rajah 4
Diagram 4

Ungkapkan y dalam sebutan x .
Express y in terms of x .

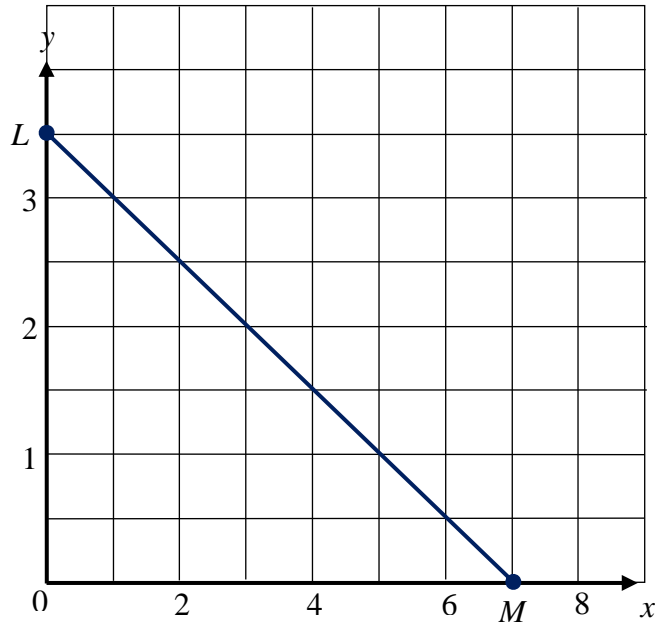
A $y = \frac{4x - 25}{3}$

B $y = \frac{3x - 25}{4}$

C $y = \frac{25 - 4x}{3}$

D $y = \frac{25 - 3x}{4}$

- 12 Rajah 5 menunjukkan garis lurus LM di atas suatu satah Cartes.
Diagram 5 shows the straight line LM on a Cartesian plane



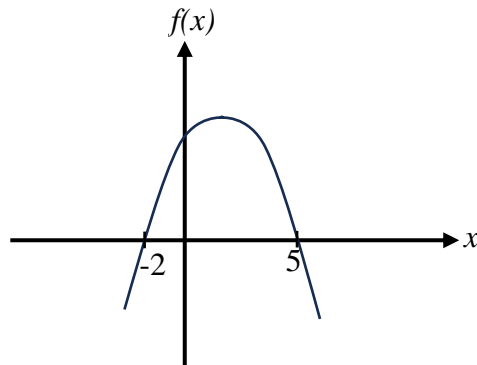
Rajah 5
 Diagram 5

Kecerunan LM ialah.

The gradient of the LM is.

- A $-\frac{1}{2}$
- B $\frac{1}{2}$
- C $-\frac{4}{7}$
- D $\frac{4}{7}$

- 13 Rajah 6 menunjukkan graf fungsi kuadratik.
Diagram 6 shows a quadratic functions graph.



Rajah 6
Diagram 6

Antara fungsi kuadratik berikut, yang manakah mewakili graf di atas?
Which of the following quadratic functions represents the above graph?

- A $f(x) = x^2 + 3x + 10$
 B $f(x) = x^2 - 3x - 10$
 C $f(x) = -x^2 - 3x - 10$
 D $f(x) = -x^2 + 3x + 10$
- 14 Adam ingin membeli beberapa buah buku rujukan dan buku latihan sebagai persediaan menghadapi peperiksaan SPM pada tahun ini. Harga sebuah buku rujukan ialah RM23 dan harga sebuah buku latihan RM7. Jumlah maksimum yang boleh dibelanjakan adalah RM100. Wakilkan situasi Adam dalam bentuk ketaksamaan linear yang sesuai.

Adam would like to buy some reference books and practice books in preparation for the SPM exam this year. The price of a reference book is RM23 and the price of an exercise book is RM7. The maximum amount that can be spend is RM100. Represent Adam's situation in the form of a suitable linear inequality.

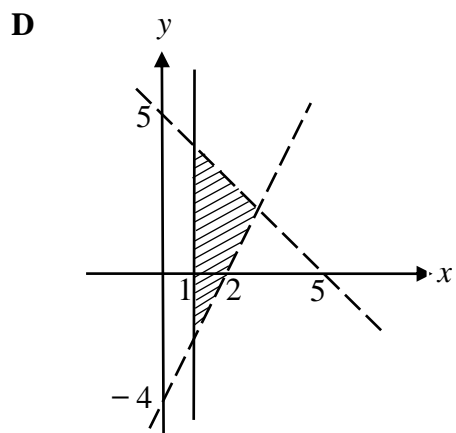
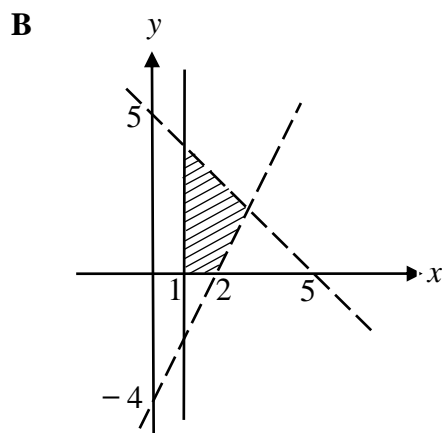
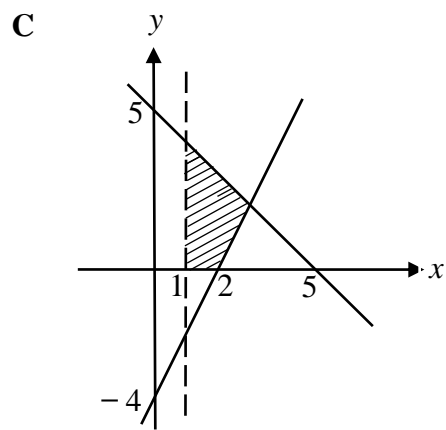
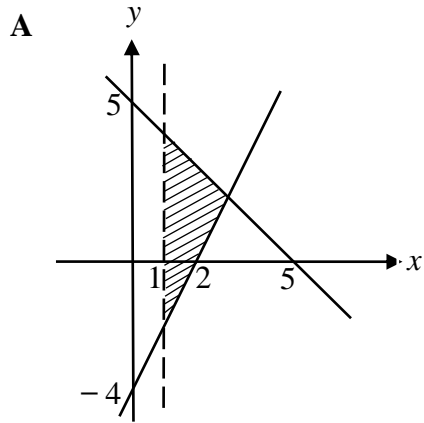
- A $23x + 7y < 100$
 B $23x + 7y \geq 100$
 C $23x > 100 - 7y$
 D $23x \leq 100 - 7y$

15 Diberi $y \leq -x + 5$, $x > 1$, $y \geq 2x - 4$.

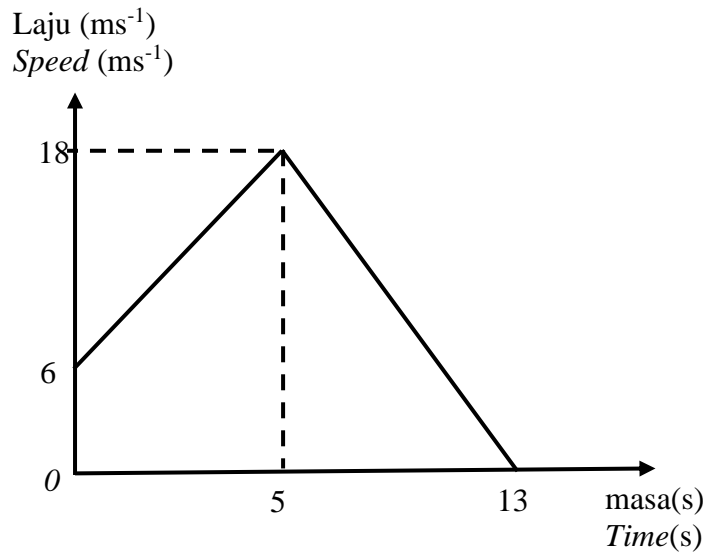
Antara rantau berlorek berikut, yang manakah memenuhi sistem ketaksamaan linear tersebut?

It is given that $y \leq -x + 5$, $x > 1$, $y \geq 2x - 4$.

Which of the following shaded region satisfies the system of linear inequalities?



- 16 Rajah 7 menunjukkan graf laju-masa bagi pergerakan suatu zarah dalam masa 13 saat.
Diagram 7 shows the speed-time graph for a particle movement in 13 seconds.



Rajah 7
 Diagram 7

Hitungkan kadar perubahan laju bagi 8 saat terakhir.
Calculate the rate of change of speed in the last 8 second.

- A** 2.40
B 2.25
C -2.25
D -2.40

- 17 Jadual 2 menunjukkan maklumat bagi nilai $\sum x$ dan $\sum x^2$ bagi suatu set data.
Table 2 shows information for values $\sum x$ and $\sum x^2$ for a data set.

N	$\sum x$	$\sum x^2$
6	45	373

Jadual 2
 Table 2

Hitung sisihan piawai.
Calculate the standard deviation.

- A 2.43
 B 5.92
 C 7.39
 D 7.88
- 18 Jadual 3 menunjukkan beberapa nilai pembolehubah x dan y .
Table 3 shows some values of the variables x and y .

x	3	m
y	$\frac{1}{2}$	2

Jadual 3
 Table 3

Diberi bahawa y berubah secara songsang dengan kuasa dua x . Hitung nilai m .
It is given that y varies inversely as the square of x . Calculate the value of m .

- A $\frac{3}{4}$
 B $\frac{2}{3}$
 C $\frac{3}{2}$
 D $\frac{9}{2}$

- 19 Diberi bahawa q berubah secara langsung dengan punca kuasa dua x dan secara songsang dengan kuasa tiga y . Jika $q \propto \frac{x^a}{y^b}$, nyatakan nilai a dan nilai b .

It is given that q varies directly as the square root of x and varies inversely as the cube of y .

If $q \propto \frac{x^a}{y^b}$, state the value of a and of b

- A $a = \frac{1}{2}, b = 3$
- B $a = \frac{1}{2}, b = -3$
- C $a = 2, b = 3$
- D $a = 2, b = -3$
- 20 Diberi matriks $M = \begin{pmatrix} 3 & p \\ -2 & 4 \end{pmatrix}$ dengan keadaan M **tidak** mempunyai matriks songsang, cari nilai p .

*Given matrix $M = \begin{pmatrix} 3 & p \\ -2 & 4 \end{pmatrix}$ where M does **not** have inverse matrix, find the value of p .*

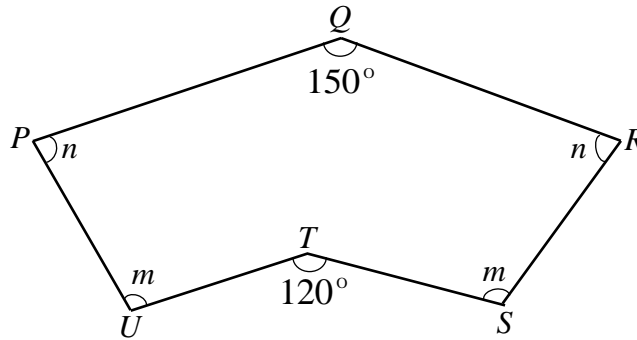
- A -6
- B -4
- C 4
- D 6

21 $3 \begin{pmatrix} 4 & 3 \\ 2 & -1 \end{pmatrix} - \begin{pmatrix} 2 & 0 \\ -2 & 8 \end{pmatrix} =$

- A $\begin{pmatrix} 10 & 9 \\ 4 & 5 \end{pmatrix}$
- B $\begin{pmatrix} 14 & 9 \\ 8 & 8 \end{pmatrix}$
- C $\begin{pmatrix} 10 & 9 \\ 8 & -11 \end{pmatrix}$
- D $\begin{pmatrix} 12 & 9 \\ 4 & 11 \end{pmatrix}$

- 22 Rajah 8 menunjukkan sebuah heksagon $PQRSTU$.

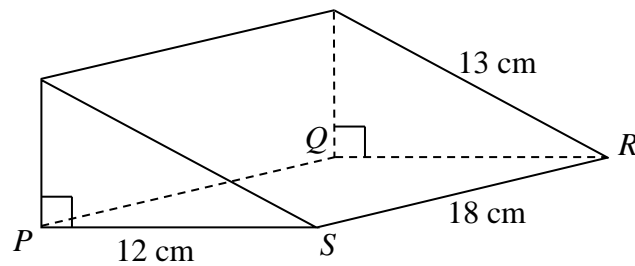
Diagram 8 shows a heksagon $PQRSTU$.



Rajah 8
Diagram 8

Nilai bagi $m+n$ ialah.
The value of $m+n$ is.

- A 135
B 165
C 225
D 330
- 23 Rajah 9 menunjukkan sebuah prisma tegak. Tapak $PQRS$ ialah sebuah segi empat tepat.
Diagram 9 shows a right prism. The base $PQRS$ is a rectangle.



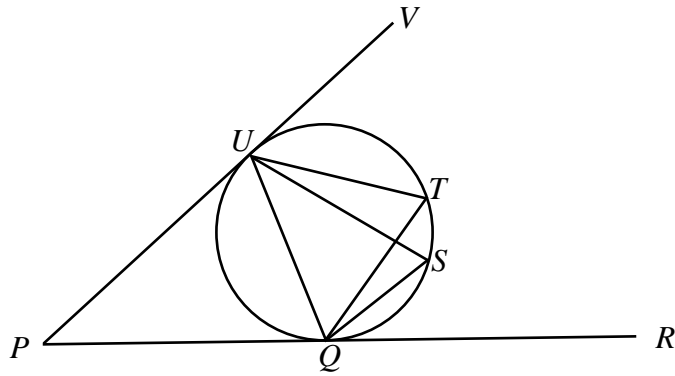
Rajah 9
Diagram 9

Hitung isipadu dalam cm^3 , prisma itu.
Calculate the volume in cm^3 , of the prism.

- A 90
B 234
C 540
D 1080

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- 24 Rajah 10 menunjukkan PUV dan PQR ialah tangen kepada bulatan $QSTU$.
 Diagram 10 shows PUV and PQR are tangents to the circle $QSTU$.

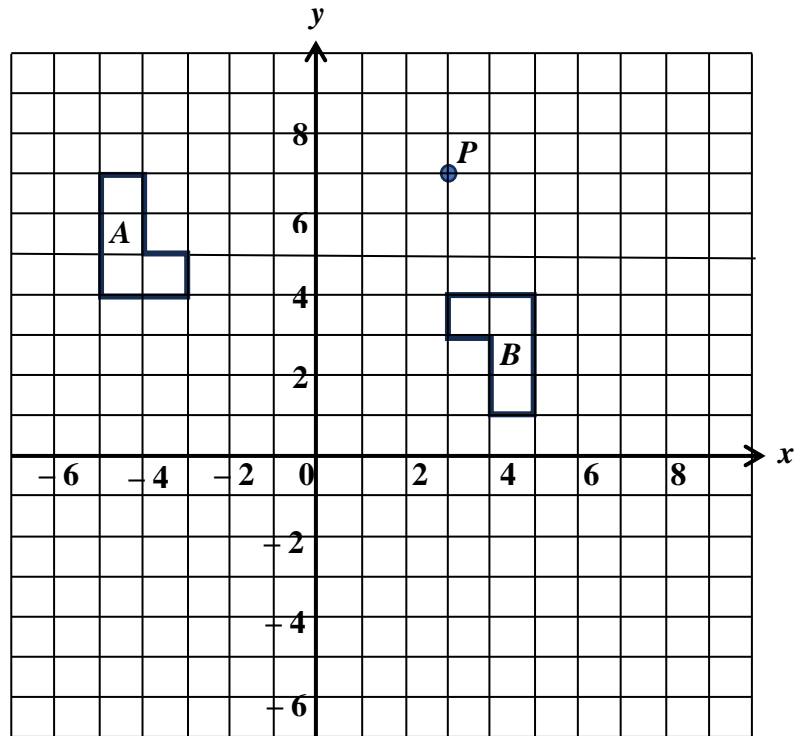


Rajah 10
 Diagram 10

$\angle SQR$ sama dengan
 $\angle SQR$ is equal to

- A $\angle PQU$
 B $\angle QUS$
 C $\angle SQU$
 D $\angle UTQ$

- 25 Rajah 11 menunjukkan dua poligon, A dan B dilukis pada suatu satah Cartes.
Diagram 11 shows two polygons, A and B drawn on a Cartesian plane.



Rajah 11
 Diagram 11

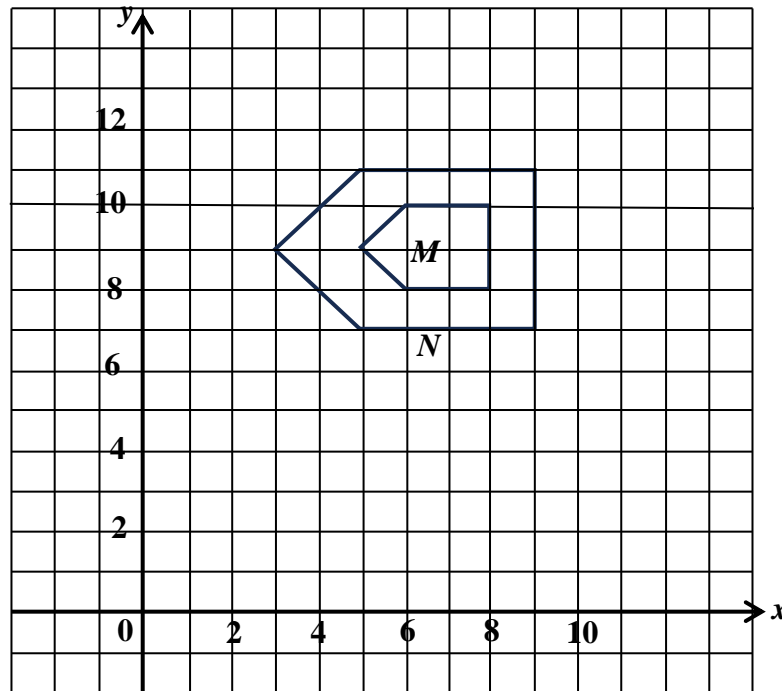
A ialah imej bagi B di bawah suatu transformasi. Cari koordinat bagi imej titik P di bawah transformasi yang sama.

A is the image of B under a transformation. Find the coordinate of the image of point P under the same transformation.

- A** $(-3, 1)$
B $(-3, 7)$
C $(1, -3)$
D $(7, -3)$

- 26 Rajah 12 menunjukkan dua pentagon, M dan N , dilukis pada suatu satah Cartes. M ialah imej bagi N di bawah suatu pembesaran.

Diagram 12 shows two pentagons, M and N , drawn on a Cartesian plane. M is the image of N under an enlargement.



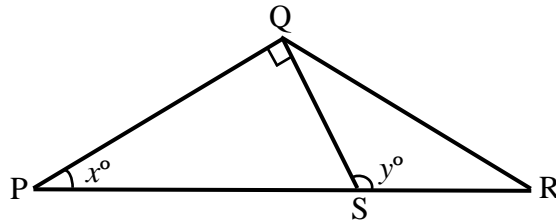
Rajah 12
Diagram 12

Cari faktor skala dan pusat pembesaran itu.
Find the scale factor and the centre of the enlargement.

	Faktor skala <i>Scale factor</i>	Pusat pembesaran <i>Centre of enlargement</i>
A	2	(7,9)
B	$\frac{1}{2}$	(7,9)
C	2	(9,7)
D	$\frac{1}{2}$	(9,7)

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- 27 Rajah 13 menunjukkan dua segi tiga, PQS dan QRS .
Diagram 13 shows two triangles, PQS and QRS .

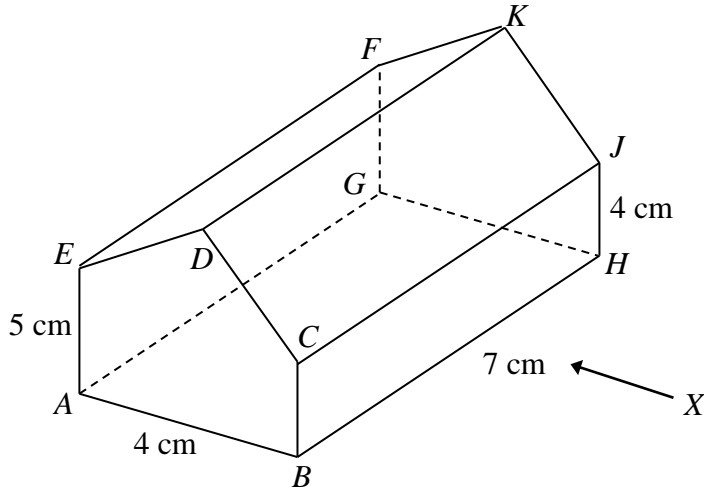


Rajah 13
 Diagram 13

Diberi $SR = 8$ cm, $PQ = 16$ cm dan $5SR = 2PS$. Cari nilai $\cos x^\circ + \tan y^\circ$.
Given $SR = 8$ cm, $PQ = 16$ cm and $5SR = 2PS$. Find the value of $\cos x^\circ + \tan y^\circ$.

- A $-\frac{32}{15}$
 B $-\frac{8}{15}$
 C $\frac{8}{15}$
 D $\frac{32}{15}$

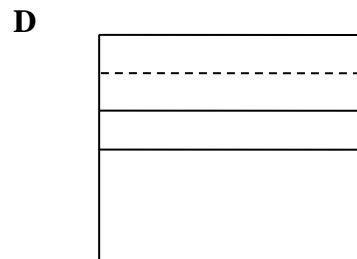
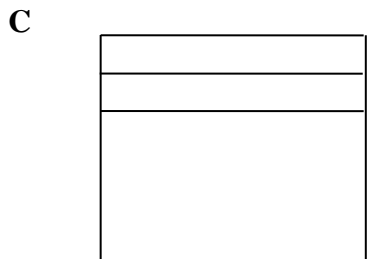
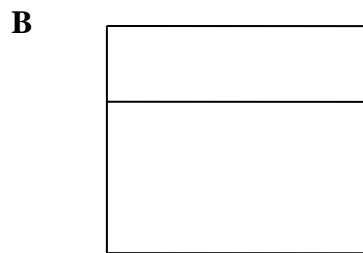
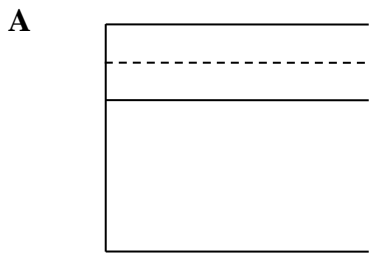
- 28 Rajah 14 menunjukkan sebuah pepejal di atas permukaan mengufuk. Garis DK berada 6 cm tegak di atas tapak $ABHG$.
 Diagram 14 shows a solid lies on a horizontal plane. The line DK lies 6 cm vertically above the base $ABHG$.



Rajah 14
 Diagram 14

Antara berikut, yang manakah menunjukkan unjuran ortogon pepejal itu pada satah mencancang yang selari dengan BH sebagaimana dilihat dari X ?

Which of the following is the orthogonal projection of the solid on the vertical plane parallel to BH as viewed from X ?



29 Antara yang berikut, yang manakah pernyataan majmuk yang palsu?
Which of the following is a false compound statements?

- A** $2^3 = 6$ atau $(-3)^2 = 9$
 $2^3 = 6$ or $(-3)^2 = 9$
- B** $\{5\} \subset \{2, 5, 7\}$ atau $12 \notin \{\text{Gandaan bagi } 3\}$
 $\{5\} \subset \{2, 5, 7\}$ or $12 \notin \{\text{Multiple of } 3\}$
- C** $3x + 7x = 10x$ dan 4 ialah faktor bagi 114
 $3x + 7x = 10x$ and 4 is a factor of 114
- D** 216 ialah nombor kuasa tiga sempurna dan $(x - y)(x + y) = x^2 - y^2$
216 is a perfect cube number and $(x - y)(x + y) = x^2 - y^2$

30 Rajah 15 menunjukkan suatu implikasi.
Diagram 15 shows an implication.

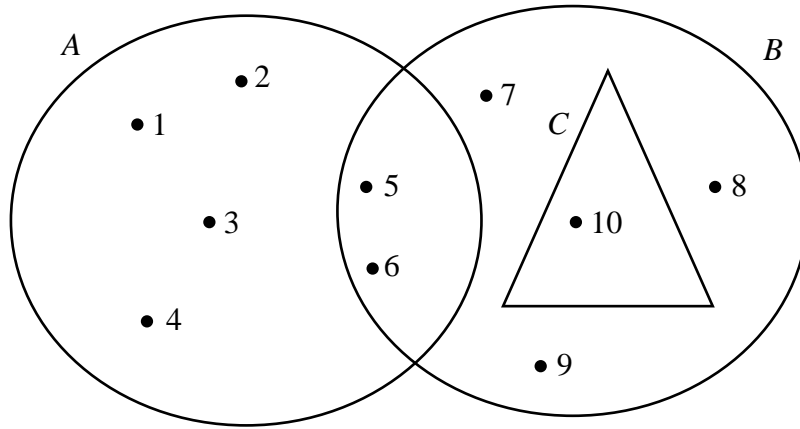
Jika p ialah nombor genap, maka p boleh dibahagi tepat dengan 2.
If p is an even number, then p is divisible by 2.

Rajah 15
Diagram 15

Antara berikut yang manakah songsangan bagi implikasi tersebut?
Which of the following is the inverse of the implication?

- A** Jika p boleh dibahagi tepat dengan 2, maka p ialah nombor genap.
If p is divisible by 2, then p is an even number.
- B** Jika p bukan nombor genap, maka p boleh dibahagi tepat dengan 2.
If p is not an even number, then p is divisible by 2.
- C** Jika p bukan nombor genap, maka p tidak boleh dibahagi tepat dengan 2.
If p is not an even number, then p is not divisible by 2.
- D** Jika p tidak boleh dibahagi tepat dengan 2, maka p bukan nombor genap.
If p is not divisible by 2, then p is not an even number.

- 31 Rajah 16 ialah gambar rajah Venn dengan set semesta, $\xi = A \cup B \cup C$.
 Diagram 16 is a Venn diagram with the universal set, $\xi = A \cup B \cup C$.

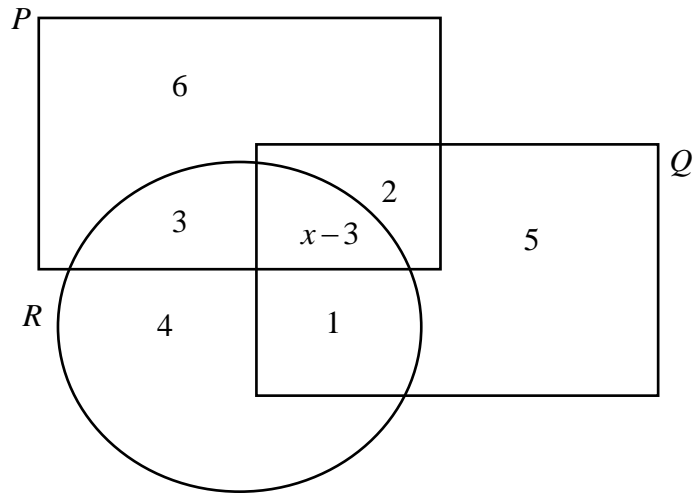


Rajah 16
 Diagram 16

Senaraikan semua unsur bagi set $B \cap C'$.
 List all the elements of the set $B \cap C'$.

- A** { 5, 6, 10 }
B { 5, 6, 7, 8, 9 }
C { 1, 2, 3, 4, 5, 6 }
D { 1, 2, 3, 4, 7, 8, 9 }

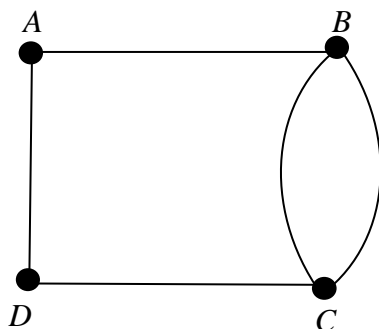
- 32 Gambar rajah Venn menunjukkan bilangan unsur bagi set P , set Q dan set R .
The Venn diagram shows the number of the elements of set P , set Q and set R .



Diberi bahawa set semesta $\xi = P \cup Q \cup R$ dan $n(P') = n(R \cap Q)$. Cari nilai x .
It is given that the universal set, $\xi = P \cup Q \cup R$ and $n(P') = n(R \cap Q)$. Find the value of x .

- A 8
 B 11
 C 12
 D 14

- 33 Rajah 17 menunjukkan suatu graf.
Diagram 17 shows a graph.



Rajah 17
Diagram 17

Nyatakan bilangan darjah bagi graf tersebut.
State the number of degrees for the graph.

- A 7
B 8
C 9
D 10
- 34 Jadual 4 menunjukkan wang saku yang dibelanjakan oleh sekumpulan murid di sekolah.
Table 4 show the pocket money spend by a group of students at school.

Wang saku <i>Pocket money</i>	Kekerapan <i>Frequency</i>
RM 3	13
RM 5	15
RM 7	10
RM 10	3

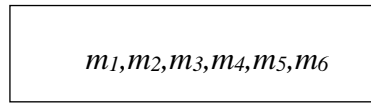
Jadual 4
Table 4

Apakah mod bagi data itu?
What is the mode of the data?

- A RM 10
B RM 5
C 15
D 13

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- 35 Rajah 18 menunjukkan satu set data.
Diagram 18 shows a set of data.

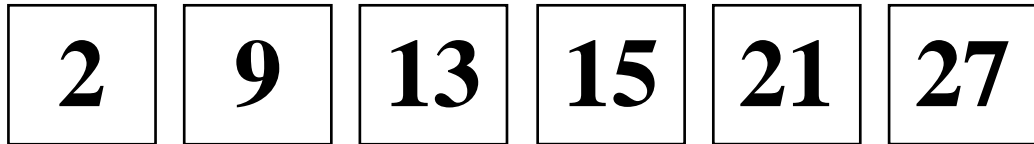


Rajah 18
Diagram 18

Diberi min bagi set data itu ialah 12.4. Jika nilai setiap data dibahagi dengan dua, hitung nilai min baharu bagi data tersebut.

Given that the min for the dataset is 12.4, If the value of each data is divided by two, calculate a new min value for that data.

- A 6.2
B 10.4
C 14.4
D 24.4
- 36 Rajah 19 menunjukkan beberapa keping kad nombor.
Diagram 19 shows several pieces of number cards.



Rajah 19
Diagram 19

Sekeping kad dipilih secara rawak. Nyatakan kebarangkalian bahawa kad yang dipilih ialah kad nombor perdana.

A card is chosen at random. State the probability that the selected card is a prime number card.

- A $\frac{1}{6}$
B $\frac{1}{3}$
C $\frac{1}{2}$
D $\frac{5}{6}$

- 37 Sebanyak 15% biji buah jambu daripada empat kotak jambu didapati telah busuk. A ialah peristiwa memperolehi buah jambu tidak busuk. Jika sebuah kotak jambu mengandungi 25 biji buah jambu, hitung kebarangkalian mengambil satu biji jambu yang tidak busuk secara rawak ?

A total of 15% of guava seeds from four boxes of guava were found to be rotten. A is the event of obtaining unrotten guava fruit. If a box of guavas contains 25 guavas, calculate the probability of picking one unrotten guava at random ?

A $\frac{2}{5}$

B $\frac{3}{5}$

C $\frac{3}{20}$

D $\frac{17}{20}$

- 38 Puan Dalina mempunyai rumah di Taman Anggerik. Anggaran sewa rumahnya ialah RM850 sebulan. Diberi kadar cukai pintu ialah 3%. Hitung cukai pintu yang perlu dibayar olehnya untuk setiap setengah tahun.

Puan Dalina has a house in Taman Anggerik. The estimation of rental of her house is RM850 per month. Given the property assessment tax rate is 3%. Calculate the property assessment tax payable by her for each half-year.

A RM 12.75

B RM 25.50

C RM 153.00

D RM 306.00

- 39 Jadual 4 menunjukkan pencapaian bagi empat kelas dalam satu ujian Matematik.
Table 4 shows the achievement of four classes in a Mathematics test.

Kelas <i>Class</i>	Min markah <i>Mean mark</i>	Sisihan piawai <i>Standard deviation</i>
5M	92	5
5N	86	2
5R	88	4
5T	75	3

Jadual 4
Table 4

Berdasarkan data di atas, kelas manakah yang menunjukkan pencapaian paling konsisten dalam ujian itu?

Based on the above data, which class shows the most consistent achievement in the test?

- A 5M
 B 5N
 C 5R
 D 5T
- 40 Diberi bahawa satu set 60 data mempunyai $\sum fx^2 = 120100$ dan min 36, hitung sisihan piawai bagi data tersebut.
Given that a set of 60 data has $\sum fx^2 = 120100$ and a mean 36, calculate the standard deviation for the set of data.
- A 2001.67
 B 1965.67
 C 705.67
 D 26.56

KERTAS SOALAN TAMAT

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MAKLUMAT UNTUK CALON
INFORMATION FOR CANDIDATES

1. Kertas peperiksaan ini mengandungi **40** soalan.
*This question paper consists of **40** questions.*
2. Jawab **semua** soalan.
*Answer **all** questions.*
3. Jawab semua soalan dengan menghitamkan ruangan yang betul pada kertas jawapan objektif.
Answer each question by blackening the correct space on the objective answer sheet.
4. Hitamkan **satu** ruangan sahaja bagi setiap soalan.
*Blacken only **one** space for each question.*
5. Sekiranya anda hendak menukar jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baharu.
*If you wish to change your answer, erase the blackened mark that you have done.
Then blacken the space for the new answer.*
6. Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.
The diagrams in the questions provided are not drawn to scale unless stated.
7. Satu senarai rumus disediakan di halaman 2 hingga 4.
A list of formulae is provided on pages 2 to 4.
8. Anda dibenarkan menggunakan kalkulator saintifik.
You may use a scientific calculator.