

TERHAD



KEMENTERIAN PENDIDIKAN MALAYSIA

i-MODUL KECEMERLANGAN SPM SMKA DAN SABK

SIJIL PELAJARAN MALAYSIA 2021 (SET1)

MATEMATIK

1449/1

KERTAS 1

Okt./Nov.

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

Satu jam tiga puluh minit

JANGAN BUKA KERTAS PEPERIKSAAN INI SEHINGGA DIBERITAHU

1. *Kertas ini mengandungi **40** soalan dan dalam dwibahasa.*
2. *Jawab **SEMUA** soalan.*
3. *Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.*
4. *Satu senarai rumus disediakan di halaman 2, 3 dan 4.*
5. *Anda dibenarkan menggunakan kalkulator saintifik.*

Kertas peperiksaan ini mengandungi 30 halaman bercetak

RUMUS MATEMATIK MATHEMATICAL FORMULAE

Rumus-rumus berikut boleh membantu anda untuk 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

- | | |
|---|--|
| <p>1 $a^m \times a^n = a^{m+n}$</p> <p>3 $(a^m)^n = a^{mn}$</p> <p>5 Faedah mudah / <i>Simple interest</i>, $I = Prt$</p> <p>6 Nilai Matang / <i>Maturity Value</i>, $MV = P\left(1 + \frac{r}{n}\right)^{nt}$</p> <p>7 Jumlah bayaran balik / <i>Total repayment</i>, $A = P + Prt$</p> | <p>2 $a^m \div a^n = a^{m-n}$</p> <p>4 $a^{\frac{m}{n}} = (a^{\frac{1}{n}})^m$</p> |
|---|--|

PERKAITAN RELATIONS

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

SUKATAN DAN GEOMETRI
MEASUREMENT AND GEOMETRY

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

$$\frac{\text{Panjang lengkok}}{2\pi r} = \frac{\theta}{360^\circ}$$
- 5
$$\frac{\text{Arc length}}{2\pi r} = \frac{\theta}{360^\circ}$$
- 6
$$\frac{\text{Luas sektor}}{\pi r^2} = \frac{\theta}{360^\circ}$$

$$\frac{\text{Area of sector}}{\pi r^2} = \frac{\theta}{360^\circ}$$
- 7 Luas layang = $\frac{1}{2} \times$ hasil darab panjang dua pepenjuru
Area of kite $= \frac{1}{2} \times \text{product of two diagonals}$
- 8 Luas trapezium = $\frac{1}{2} \times$ hasil tambah dua sisi selari \times tinggi
Area of trapezium $= \frac{1}{2} \times \text{sum of parallel sides} \times \text{height}$
- 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 Isipadu prisma tegak = luas keratan rentas \times tinggi
Volume of right prism $= \text{cross sectional area} \times \text{height}$
- 13 Isipadu silinder $= \pi r^2 h$
Volume of cylinder $= \pi r^2 h$

- 14 Isipadu kon = $\frac{1}{3}\pi r^2 h$
Volume of cone = $\frac{1}{3}\pi r^2 h$
- 15 Isipadu sfera = $\frac{4}{3}\pi r^3$
Volume of sphere = $\frac{4}{3}\pi r^3$
- 16 Isipadu piramid tegak = $\frac{1}{3} \times \text{luas tapak} \times \text{tinggi}$
Volume of right 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, $\bar{x} = \frac{\sum fx}{f}$
- 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 Diberi bahawa P berubah secara langsung dengan kuasa tiga R dan secara songsang dengan punca kuasa dua Q . Nyatakan hubungan antara P , Q dan R .

It is given that P varies directly as the cube of R and inversely as the square root of Q . Find the relation between P , Q and R .

A $P \propto R^3 \sqrt{Q}$

B $P \propto \frac{R^3}{Q^2}$

C $P \propto \frac{\sqrt{Q}}{R^3}$

D $P \propto \frac{R^3}{\sqrt{Q}}$

- 2 Diberi bahawa $P \propto \frac{1}{G^2 H}$ dan $P = 4$ apabila $G = 2$ dan $H = 3$.

Hitungkan nilai H apabila $P = 1$ dan $G = -2$.

Given that $P \propto \frac{1}{G^2 H}$ and $P = 4$ when $G = 2$ and $H = 3$.

Calculate the value of H when $P = 1$ and $G = -2$.

A -12

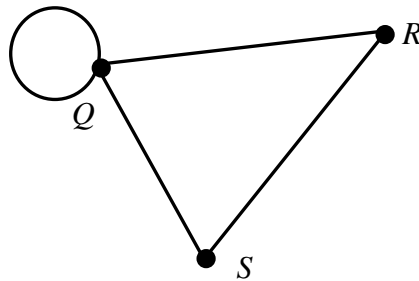
B 6

C 12

D 24

- 3 Rajah 1 menunjukkan suatu graf mudah.

Diagram 1 shows a simple graph.



Rajah 1
Diagram 1

Nyatakan $n(V)$ graf mudah tersebut.

State the $n(V)$ for simple graph shown.

- A 3
 - B 4
 - C 6
 - D 8
- 4 Antara berikut pernyataan manakah yang **benar** ?
- Which of the following is a **true** statement ?*

- A 2 ialah faktor bagi 21
2 is a factor of 21
- B 125 ialah kuasa tiga sempurna
125 is a perfect cube
- C Segi empat sama mempunyai dua paksi simetri
Squares have two symmetrical axes
- D Semua persamaan kuadratik mempunyai dua punca
All quadratic equations have two roots

- 5 Rajah 2 menunjukkan sebahagian daripada proses pengurusan kewangan Amran.

Diagram 2 shows a part of Amran financial management process.

- Menyimpan untuk dana kecemasan
To save for emergency fund
- Membeli sebuah komputer riba
To buy a laptop
- Membeli sebuah rumah dalam masa 10 tahun dengan membayar RM50 000 sebagai bayaran pendahuluan
To buy a house in 10 years by paying RM50 000 as a down payment

Rajah 2
Diagram 2

Apakah langkah proses pengurusan kewangan yang dibuat oleh Amran?

What is the step in the financial management process made by Amran?

- A Menilai kedudukan kewangan
Evaluating financial status
- B Melaksanakan pelan kewangan
Carrying out financial plan
- C Membentuk satu pelan kewangan
Creating a financial plan
- D Menetapkan matlamat kewangan
Setting financial goals

- 6 Azmi layak mendapat NCD sebanyak 55%. Premium asas polisi komprehensif bagi kereta Azmi ialah RM1 379.10. Hitung premium kasar jika dia membeli polisi pihak ketiga, kebakaran dan kecurian.

Azmi is entitled to NCD of 55%. The basic premium of the comprehensive policy for Azmi's car is RM1 379.10. Calculate the gross premium if he purchased the third party, fire and theft policy.

- A RM465.45
- B RM568.88
- C RM620.60
- D RM1 034.33

- 7 Jadual 1 menunjukkan kadar premium tahunan bagi setiap RM1 000 nilai muka dua polisi insurans.

Table 1 shows the annual premium rates per RM1 000 face value of two life insurance policies.

Pelan Plan	20 tahun 20 years old
Tempoh 5 tahun 5-year term	RM4.21
Boleh baharu tahunan Yearly renewable term	RM3.83

Jadual 1

Table 1

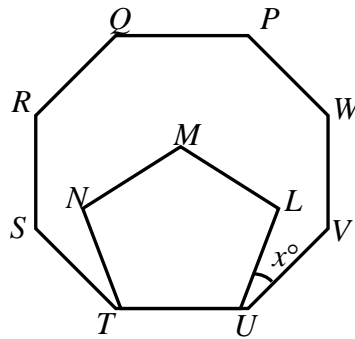
Kedua-dua Ramli dan Syukor berumur 20 tahun. Ramli memilih pelan dengan tempoh 5 tahun manakala Syukor memilih pelan boleh baharu tahunan. Hitung jumlah premium tahunan mereka jika setiap polisi bernilai muka RM50 000.

Both of Ramli and Syukor are 20 years old. Ramli selects the plan worth 5-year term while Syukor selects the plan with yearly renewable term. Calculate their total annual premium if each policy has a face value of RM50 000.

- A RM19.00
- B RM191.50
- C RM210.50
- D RM402.00

- 8 Dalam Rajah 3 di bawah, $PQRSTUVW$ dan $LMNTU$ ialah poligon sekata.

In Diagram 3 below, $PQRSTUVW$ and $LMNTU$ are regular polygons.



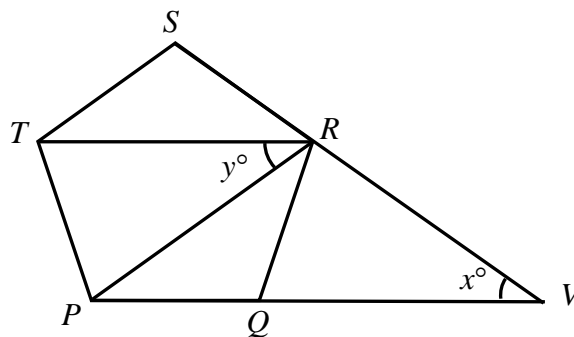
Rajah 3
Diagram 3

Cari nilai x .

Find the value of x .

- A 16
B 18
C 25
D 27
- 9 Dalam Rajah 4, $PQRST$ ialah sebuah pentagon sekata. PQV dan SRV ialah garis lurus.

In Diagram 4, $PQRST$ is a regular pentagon. PQV and SRV are straight lines.



Rajah 4
Diagram 4

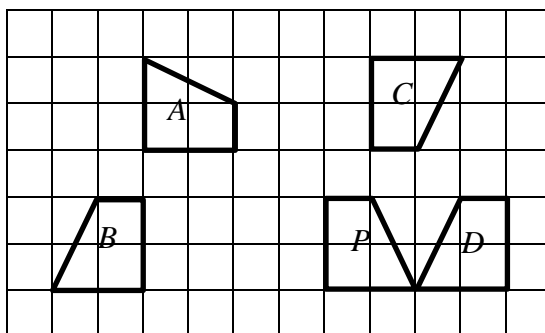
Cari nilai bagi $x + y$.

Find the value of $x + y$.

- A 54
B 72
C 87
D 90

- 10 Rajah 5 menunjukkan lima trapezium yang dilukis pada grid segi empat sama.

Diagram 5 shows five trapeziums drawn on square grids.



Rajah 5
Diagram 5

Antara trapezium A, B, C dan D, yang manakah **bukan** imej bagi trapezium P di bawah satu pantulan pada garis tertentu ?

*Which of the trapeziums, A, B, C or D, is **not** the image of trapezium P under a reflection in a particular line ?*

- 11 Diberi $-3 < 9 - 2p < 4$. Integer terkecil bagi p yang memuaskan ketaksamaan itu ialah

Given $-3 < 9 - 2p < 4$. The smallest integer of p that satisfies the inequality is

- A 1
- B 2
- C 3
- D 4


- 12 Diberi $9(x + 2) = 5x - 18$, cari nilai x .

Given $9(x + 2) = 5x - 18$, find the value of x .

- A -36
- B -18
- C -9
- D 5

- 13 Rajah 6 ialah piktogram yang menunjukkan jualan air mineral dalam bulan Mei. Jualan dalam bulan Jun dan Julai tidak ditunjukkan.

Diagram 6 is a pictogram which shows the sales of mineral water in May. The sales for June and July are not shown.

Mei <i>May</i>	
Jun <i>June</i>	
Julai <i>July</i>	



mewakili 144 botol
represents 144 bottles

Rajah 6
Diagram 6

Jualan air mineral dalam bulan Mei, Jun dan Julai adalah dalam nisbah 2 : 1 : 5.
Cari beza bilangan botol air mineral yang dijual antara bulan Jun dan Julai.

*The sales of mineral water in May, June and July are in the ratio 2 : 1 : 5.
Find the difference in number of bottles of mineral water sold between Jun and July.*

- A 1152
- B 2304
- C 3456
- D 4608

14 Diberi $v(\sqrt{w}-3) = v - 2\sqrt{w}$ maka $w =$

Given $v(\sqrt{w}-3) = v - 2\sqrt{w}$ then $w =$

A $\frac{v^2 - 9}{v^2 - 4}$

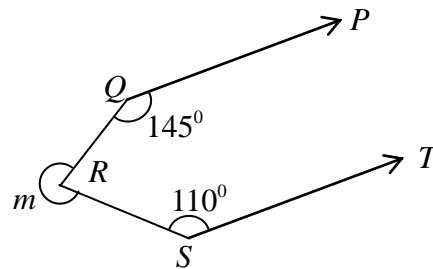
B $\frac{4v}{(v+2)^2}$

C $\left(\frac{v-3}{v-2}\right)^2$

D $\left(\frac{4v}{v+2^2}\right)^2$

15 Rajah 7 menunjukkan PQ adalah selari dengan TS .

Diagram 7 shows that PQ is parallel to TS .



Rajah 7
Diagram 7

Cari nilai m .

Find the value of m .

A 255°

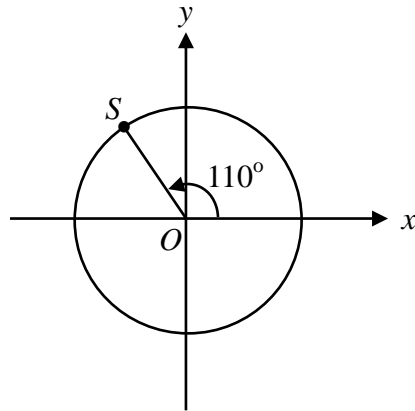
B 252°

C 225°

D 222°

- 16 Rajah 8 menunjukkan satu bulatan unit.

Diagram 8 below shows a unit circle.



Rajah 8
Diagram 8

Cari koordinat titik S .

Find the coordinates of point S .

- A $(-0.64, 0.77)$
 B $(-0.50, 0.87)$
 C $(-0.34, 0.94)$
 D $(-0.17, 0.98)$
- 17 Diberi bahawa $\begin{bmatrix} 5x & 2x \end{bmatrix} \begin{bmatrix} 11 \\ -5 \end{bmatrix} = [9]$, hitung nilai x .

Given that $\begin{bmatrix} 5x & 2x \end{bmatrix} \begin{bmatrix} 11 \\ -5 \end{bmatrix} = [9]$, calculate the value of x .

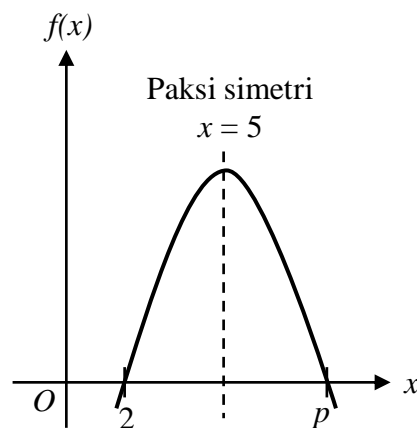
- A $\frac{1}{3}$
 B $\frac{1}{4}$
 C $\frac{1}{5}$
 D $\frac{1}{6}$

- 18 Diberi matriks $\begin{bmatrix} 4 & -16 \\ -x & 8 \end{bmatrix}$ tidak mempunyai songsangan, hitung nilai x .

Given matrix $\begin{bmatrix} 4 & -16 \\ -x & 8 \end{bmatrix}$ has no inverse, calculate the value of x .

- A 2
- B 5
- C -2
- D -5

- 19 Rajah 9 menunjukkan graf suatu fungsi kuadratik.
Diagram 9 shows a graph of a quadratic function.



Rajah 9
Diagram 9

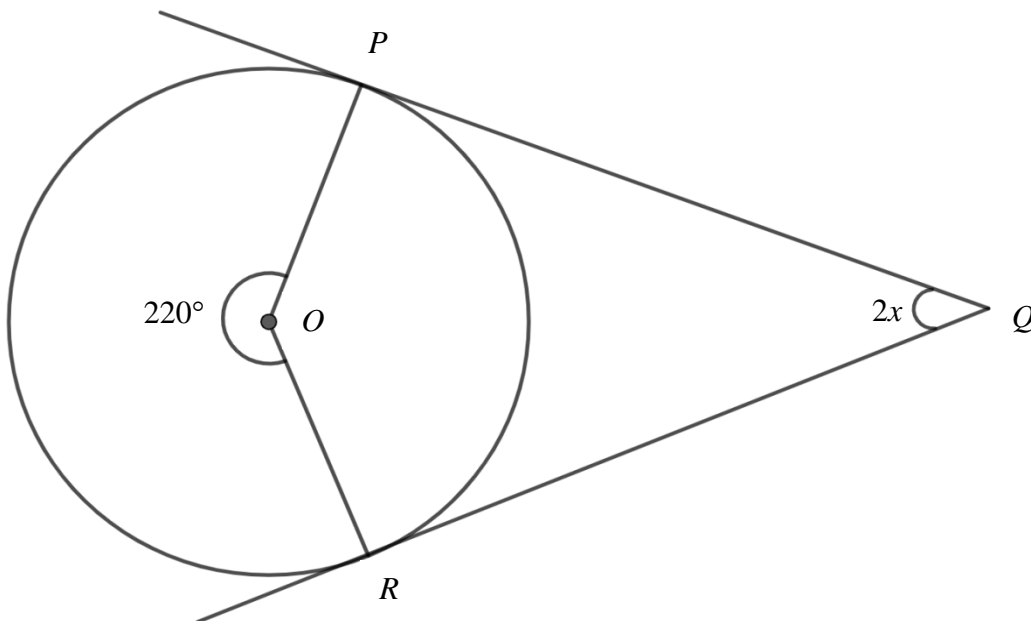
Tentukan nilai p .

Determine the value of p .

- A 3
- B 4
- C 6
- D 8

- 20** Rajah 10 menunjukkan sebuah bulatan yang berpusat di O . PQ dan RQ ialah tangen kepada bulatan.

Diagram 10 shows a circle with centre O . PQ and RQ are tangents to the circle.



Rajah 10
Diagram 10

Cari nilai x .

Find the value of x .

- A** 20°
- B** 40°
- C** 110°
- D** 140°

21 Permudahkan $\left(27p^{\frac{1}{3}} \times p^{\frac{2}{3}}\right)^{\frac{1}{3}}$

Simplify $\left(27p^{\frac{1}{3}} \times p^{\frac{2}{3}}\right)^{\frac{1}{3}}$

A $3p$

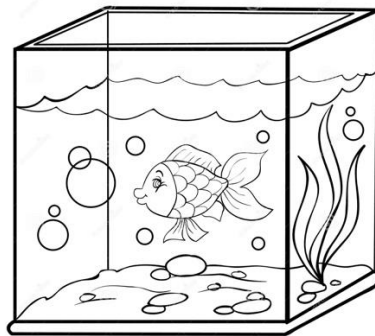
B $3p^{\frac{1}{3}}$

C $3p^3$

D $9p^{-\frac{1}{3}}$

- 22 Rajah 11 menunjukkan sebuah akuarium berbentuk kuboid.

Diagram 11 shows an aquarium in the shape of cuboid.



Rajah 11
Diagram 11

Diberi panjang dan lebar akuarium masing-masing ialah 120 cm dan 60 cm. Cari tinggi paras air dalam akuarium jika isipadu maksimum air yang diisi ialah $1.23 \times 10^6 \text{ cm}^3$.

Given the length and width of the aquarium are 120 cm and 60 cm respectively. Find the height of water level in the aquarium if the maximum volume of water filled is $1.23 \times 10^6 \text{ cm}^3$.

A 7.2×10^3

B 1.71×10^2

C 1.17×10^5

D 8.86×10^9

[Lihat halaman sebelah

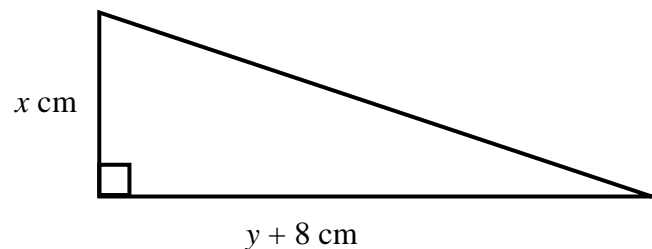
- 23 Antara berikut yang manakah **palsu** selepas dibundarkan betul kepada tiga angka bererti?

*Which of the following is **false** after rounding correct to three significant figures?*

	Nombor <i>Number</i>	Dibundarkan kepada tiga angka bererti <i>Rounded off correct to three significant figures</i>
A	213 000	213 000
B	9.235	9.24
C	0.07412	0.074
D	4981	4980

- 24 Rajah 12 menunjukkan sebuah segi tiga bersudut tegak.

Diagram 12 shows a right-angle triangle.



Rajah 12
Diagram 12

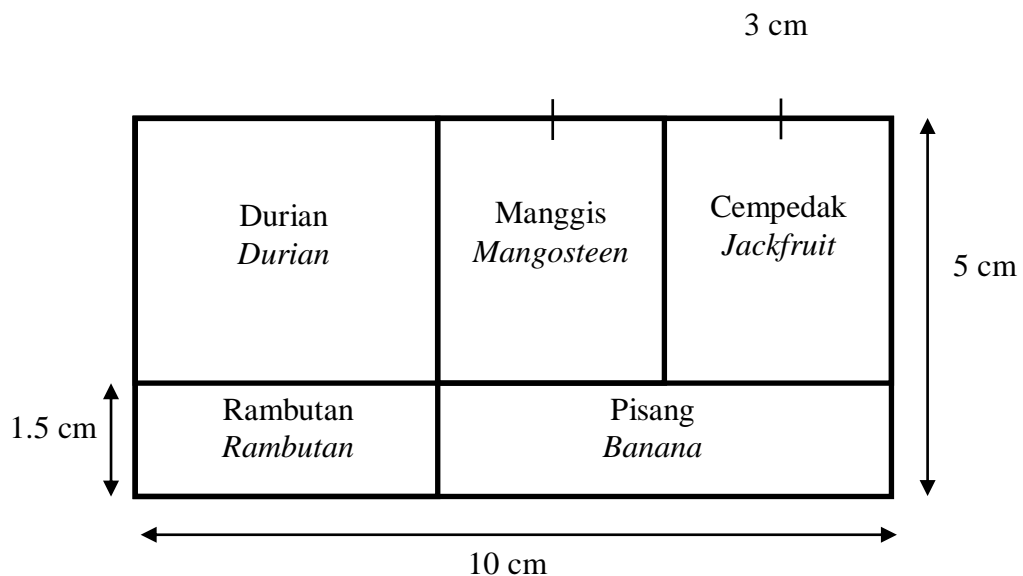
Jika luas segi tiga itu ialah 65 cm^2 , ungkapkan x dalam sebutan y .

If the area of the triangle is 65 cm^2 , express x in terms of y .

- A $x = \frac{130}{y + 8}$
- B $x = \frac{65}{y + 8}$
- C $x = \frac{y + 8}{130}$
- D $x = \frac{y + 8}{65}$

- 25 Rajah 13 menunjukkan lukisan berskala sebuah kebun buah-buahan milik Pak Aziz yang berukuran $100\text{ m} \times 200\text{ m}$. Kebun itu dibahagikan kepada lima bahagian untuk lima jenis tanaman iaitu durian, manggis, cempedak, rambutan dan pisang.

Diagram 13 shows scale drawing of an orchard belonging to Pak Aziz measuring $100\text{ m} \times 200\text{ m}$. The orchard is divided into five sections for five types of crops namely durian, mangosteen, jackfruit, rambutan and banana.



Rajah 13
Diagram 13

Jika lukisan berskala ini dilukis dengan skala 1 : 2 000, hitung beza luas sebenar, dalam m^2 , kawasan tanaman durian dan tanaman pisang.

If the scale drawing is drawn at a scale of 1 : 2 000, calculate the different actual area, in m^2 , of the durian crop and banana crop.

- A 9200
- B 5600
- C 3600
- D 2000

- 26 Rajah 14 menunjukkan satu set data.

Diagram 14 shows a set of data.

15	10	8	8	25	9	25	27	18	24	15	11
----	----	---	---	----	---	----	----	----	----	----	----

Rajah 14
Diagram 14

Diberi median bagi data tersebut ialah 15. Jika salah satu nilai 15 daripada set data itu digantikan dengan 16, hitung median yang baharu.

Given the median of the data is 15. If one of the value of 15 in the data set is replaced with 16, calculate the new median.

- A 14
- B 14.5
- C 15
- D 15.5

- 27 Rajah 15 menunjukkan plot batang-dan-daun.

Diagram 15 shows a stem-and-leaf plot.

Batang <i>Stem</i>	Daun <i>Leaf</i>
1	2 3 3
2	4 5 5
3	2 6 8
4	3

Kekunci: 1|2 bermaksud 12

Key: 1|2 means 12

Rajah 15

Diagram 15

Tentukan julat antara kuartil bagi data itu.

Determine the interquartile range of the data.

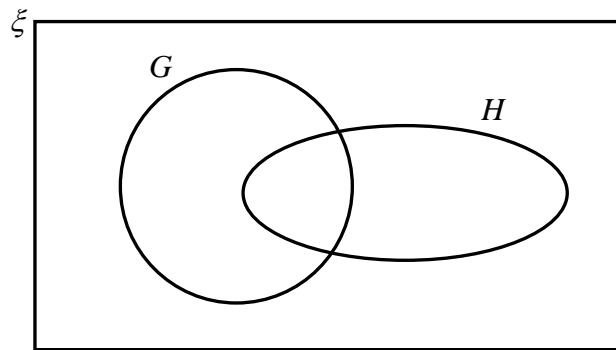
- A 15
B 18
C 23
D 24
- 28 Diberi $Q = \{x : x \text{ ialah } x^2 \text{ dan } 3 \leq x \leq 9\}$. Antara berikut, yang manakah **tidak** benar?

*Given that $Q = \{x : x \text{ ialah } x^2 \text{ dan } 3 \leq x \leq 9\}$. Which of the following is **not** true?*

- A $9 \in Q$
B $25 \in Q$
C $81 \in Q$
D $100 \in Q$

- 29 Rajah 16 menunjukkan sebuah gambar rajah Venn dengan set semesta, $\xi = \{\text{Murid tingkatan 5}\}$, set $G = \{\text{Murid yang suka makan nasi lemak}\}$ dan set $H = \{\text{Murid yang suka makan nasi kandar}\}$.

Diagram 16 shows a Venn diagram with the universal set, $\xi = \{\text{Form five students}\}$, set $G = \{\text{Students who likes to eat nasi lemak}\}$ and set $H = \{\text{Students who likes to eat nasi kandar}\}$.



Rajah 16
Diagram 16

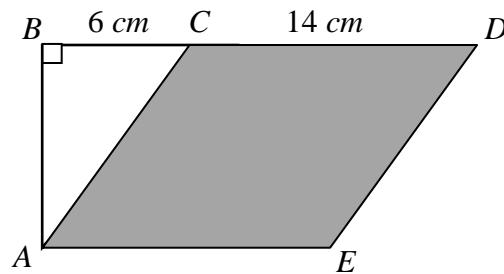
Diberi bahawa $n(\xi) = 50$, $n(G) = 23$, $n(H) = 9$ dan $n(G \cap H) = 6$, hitung bilangan murid yang tidak suka makan kedua-dua makanan tersebut.

Given $n(\xi) = 50$, $n(G) = 23$, $n(H) = 9$ and $n(G \cap H) = 6$, find the number of students who do not like to both foods.

- A 44
- B 30
- C 24
- D 18

- 30 Rajah 17 menunjukkan sebuah trapezium $ABDE$. Diberi luas segi tiga bersudut tegak ABC ialah 24 cm^2 dan $AE = CD$.

Diagram 17 shows a trapezium $ABDE$. Given the area of right-angled triangle ABC is 24 cm^2 and $AE = CD$.



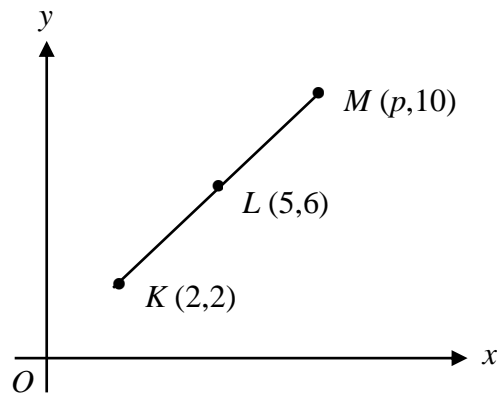
Rajah 17
Diagram 17

Cari luas dalam cm^2 , bagi kawasan berlorek.

Find the area, in cm^2 , of the shaded region.

- A 28
- B 56
- C 112
- D 140

- 31 Dalam Rajah 18, L ialah titik tengah bagi garis lurus KM .
In Diagram 18, L is the midpoint of the straight line KM .



Rajah 18
Diagram 18

Cari nilai p .
Find the value of p .

- A 6
B 7
C 8
D 9
- 32 Sebiji dadu dilambung sebanyak sekali. Hitung kebarangkalian mendapat nombor genap.
A fair dice is thrown once. Calculate the probability of getting an even number.

- A $\frac{1}{2}$
B $\frac{1}{3}$
C $\frac{1}{4}$
D $\frac{1}{6}$

- 33** Terdapat enam biji mangga dan sembilan biji oren di dalam sebuah bakul. Dzakiah makan dua biji buah yang terdapat di dalam bakul tersebut. Hitung kebarangkalian Dzakiah makan dua biji buah yang sama jenis.

There are six mangoes and nine oranges in a basket. Dzakiah eats two fruits from that basket. Calculate the probability that she eats two fruits of the same type.

- A** $\frac{13}{35}$
B $\frac{17}{35}$
C $\frac{18}{35}$
D $\frac{22}{35}$

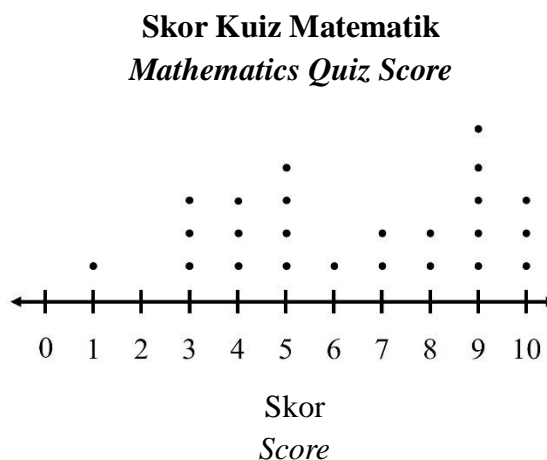
- 34** Fateh menerima wang saku sebanyak $\text{RM}(k^2 - 25)$ untuk $(k + 5)$ hari. Nukman pula menerima wang saku sebanyak $\text{RM}(k + 5)^2$ untuk $(k^2 - 5^2)$ hari. Hitung hasil darab wang saku harian Fateh dan Nukman.

Fateh received pocket money of $\text{RM}(k^2 - 25)$ for $(k + 5)$ days. Nukman received pocket money of $\text{RM}(k + 5)^2$ for $(k^2 - 5^2)$ days. Calculate the product of Fateh and Nukman's daily pocket money.

- A** $\text{RM}(k + 5)$
B $\text{RM}(k - 5)$
C $\text{RM}(k^2 - 5)$
D $\text{RM}(k^2 - 25)$

- 35 Seramai 24 orang murid dari pelbagai sekolah menyertai Kuiz Matematik Peringkat Daerah. Data yang diperoleh diwakilkan dengan plot titik seperti yang ditunjukkan dalam Rajah 19.

A total of 24 pupils from various schools participated in the District Level Mathematics Quiz. The data obtained are represented by point plots as shown in the Diagram 19.



Rajah 19
Diagram 19

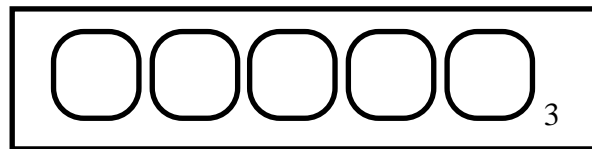
Pihak penganjur menetapkan bahawa peserta yang mempunyai skor kurang daripada 7 disingkirkan untuk ke peringkat seterusnya. Pernyataan manakah antara berikut adalah **palsu**?

*The organizers stipulate that participants with a score of less than 7 are eliminated for the next stage. Which of the following statements is **false**?*

- A** 41.67% daripada peserta mendapat skor sekurang-kurangnya 8.
41.67% of the participants got a score of at least 8.
- B** Separuh daripada bilangan peserta tersingkir untuk ke peringkat seterusnya.
Half of the number of participants was eliminated for the next level.
- C** Lima orang peserta mendapat skor tertinggi.
Five participants got the highest marks.
- D** 12 orang peserta akan bersaing ke peringkat seterusnya.
12 participants will compete in the next stage.

- 36** Anis menyimpan barang kemasnya dalam sebuah kotak yang mempunyai kod rahsia. Diberi kod bagi peti rahsia itu lebih besar daripada 340_5 tetapi lebih kecil daripada 241_6 . Rajah 20 menunjukkan kod tersebut ditulis dalam asas tiga. Nyatakan kod tersebut.

Anis keeps her jewelery in a box that has a secret code. Given that the code for the secret box is greater than 340_5 but less than 241_6 . Diagram 20 shows the code is written in base three. State the code.



Rajah 20
Diagram 20

- A** 12120
B 21010
C 10120
D 10012
- 37** Nyatakan nilai bagi digit 4, dalam asas sepuluh, dalam nombor 514320_7 .
State the value of digit 4, in base ten, in the number 514320_7 .

- A** 9604
B 2401
C 1372
D 343

- 38** Pada Tahun 2017, Juliana telah menyimpan RM9 000 dalam akaun simpanan Bank Wow dengan kadar 4% setahun dan pengkompaunan setiap 6 bulan. Manakala Syuhadah pula menyimpan amaun yang sama di Bank Bravo dengan kadar faedah 3% setahun.

Hitung beza simpanan mereka pada akhir tahun ketiga.

In 2017, Juliana had deposited RM9 000 in her saving account in Bank Wow with an interest rate of 4% per annum and compounded every 6 month.

Meanwhile Syuhadah had deposited the same amount in Bank Bravo with an interest rate of 3% per annum.

Calculate the difference of their total savings at the end of the third year.

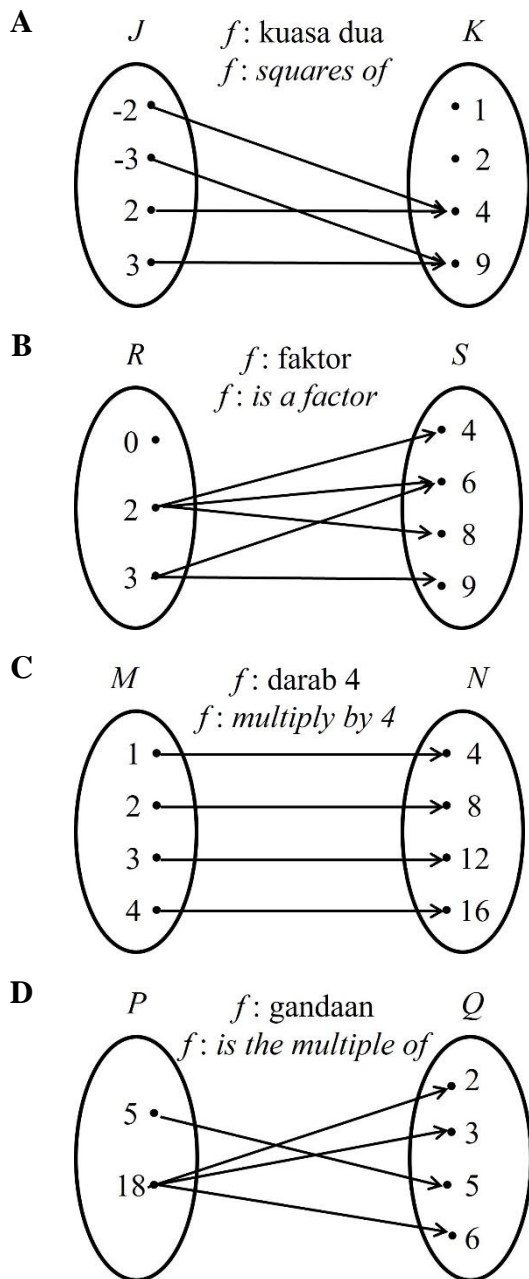
- A RM111.25
 - B RM126.73
 - C RM325.46
 - D RM443.94
- 39** Asila memiliki sebuah rumah di Klang. Dia perlu membayar cukai pintu sebanyak RM180 untuk setiap setengah tahun kepada Majlis Perbandaran Klang. Diberi bahawa nilai tahunan ialah RM x dan kadar cukai pintu ialah 5%. Cari nilai x .

Asila owns a house in Klang. She has to pay the property assessment tax RM180 for each half-year to Klang Municipal Council. It is given that the annual value is RM x and the property assessment tax rate is 5%. Find the value of x .

- A RM600
- B RM1 800
- C RM3 600
- D RM7 200

40 Manakah antara berikut merupakan fungsi banyak kepada satu?

Which of the following is a function of many-to-one?



KERTAS SOALAN TAMAT
END OF QUESTION PAPER

**MAKLUMAT UNTUK CALON
INFORMATION FOR CANDIDATES**

1. Kertas soalan ini mengandungi **40** soalan.
*This question paper consists of **40** questions.*
2. Jawab **semua** soalan.
*Answer **all** questions.*
3. Jawab setiap 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 baru.
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 provided in the questions are not drawn to scale unless stated.
7. Satu senarai rumus ada disediakan.
A list of formulae is provided.
8. Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogram.
You may use a non-programmable scientific calculator.