



KEMENTERIAN PENDIDIKAN
Jabatan Pendidikan Negeri Terengganu

MODUL PERKEMBANGAN PEMBELAJARAN SPM 2026

MPP 3 MATEMATIK KERTAS 1

Nama :

Kelas :



DISEDIAKAN OLEH PANEL AKRAM NEGERI TERENGGANU

Tidak dibenarkan menyunting atau mencetak mana-mana bahagian dalam
modul ini tanpa kebenaran Pengarah Pendidikan Negeri Terengganu



Jawab semua soalan.
Answer all questions.

- 1 Suatu nombor X , apabila dibundarkan kepada tiga angka bererti akan menjadi 12 000. Nilai yang mungkin bagi X ialah

*A number X , when rounded to three significant figures is 12 000.
The possible values of X is*

- A 11 847
- B 11 954
- C 12 050
- D 12 100

- 2 $11001_2 - N > 15_8$. Hitung nilai N .
 $11001_2 - N > 15_8$. Calculate the value of N .

- A 1011_2
- B 1100_2
- C 1101_2
- D 1110_2

- 3 Ungkapkan $5(5^2 + 4 \times 5 + 2)$ sebagai satu nombor dalam asas lima.
Express $5(5^2 + 4 \times 5 + 2)$ as a number in base five.

- A 142_5
- B 241_5
- C 1042_5
- D 1420_5

- 4 Encik Razali menyimpan RM5 000 di sebuah bank dengan kadar faedah mudah 3 % setahun. Hitung jumlah faedah yang diperolehnya selepas 2 tahun.

Encik Razali deposited RM5 000 in a bank with a simple interest rate of 3 % per annum. Calculate the total interest that he earned after 2 years.

- A RM 150
- B RM 300
- C RM3 000
- D RM5 300

- 5 Encik Kamal merupakan seorang jurutera. Gaji tahunannya pada tahun 2025 ialah RM81 600. Antara berikut yang manakah merupakan pengecualian cukai bagi Encik Kamal?

Encik Kamal is an engineer. His annual salary in 2025 is RM81 600.

Which of the following is a tax exemption for Encik Kamal?

- A Membeli komputer riba
Buying a laptop
- B Membayar kos rawatan perubatan ibu bapa
Pay for the medical expenses of parents
- C Membeli polisi insuran pendidikan untuk anak
Buy education insurance policy for children
- D Menderma kepada pertubuhan kebajikan
Donate to charity organizations

6 Permudahkan

Simplify

$$\frac{(5p^3q^1)^2}{10p^1q^1}$$

A p^4q

B $\frac{1}{2}p^1q$

C $\frac{5}{2}p^4q$

D $\frac{5}{2}p^1q$

7 Jumlah pendapatan individu kurang daripada jumlah perbelanjaannya.

Pernyataan ini merujuk kepada

Individual's total income is less than the total expenses.

This statement refers to

A Lebihan pelaburan
Investment surplus

B Aliran tunai negatif
Negative cash flow

C Bajet seimbang
Balanced budget

D Aliran tunai positif
Positive cash flow

- 8 Rajah 1 menunjukkan satu jujukan nombor.

Diagram 1 shows a number sequence.

$1, 4, 9, 16, \dots$

Rajah 1 / Diagram 1

Antara berikut, yang manakah mewakili ungkapan algebra bagi jujukan nombor itu?

Which of the following represents the algebraic expression for the number sequence?

- A n^2 ; $n=1,2,3,\dots$
- B $2n$; $n=1,2,3,\dots$
- C n^2+1 ; $n=1,2,3,\dots$
- D $n(n+1)$; $n=1,2,3,\dots$
- 9 Farah mempunyai polisi insurans perubatan dengan fasal penyertaan peratusan ko-insurans 75/25 dalam polisinya. Hitung kos yang ditanggung oleh Farah jika kos perubatan yang ialah RM4 200.
- Farah has a medical insurance policy with a 75/25 co-insurance percentage participation clause in her policy. Calculate the cost borne by her if the medical cost is RM4 200.*

- A RM 630
- B RM1 050
- C RM2 100
- D RM3 150

- 10 M berubah secara songsang dengan N dan $N = 2P + 1$. Diberi $M = 0.05$ apabila $P = 2$.
Ungkapkan M dalam sebutan N .

M varies inversely as N and $N = 2P + 1$. Given $M = 0.05$ when $P = 2$.

Express M in terms of N .

A $M = \frac{0.25}{N}$

B $M = \frac{0.10}{N}$

C $N = \frac{0.25}{M}$

D $N = \frac{0.10}{M}$

- 11 Selesaikan ketaksamaan yang berikut :

Solve the inequalities :

$$-\frac{x}{3} < 9$$

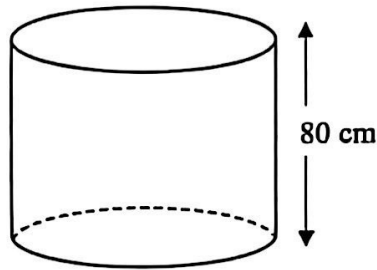
A $x < -3$

B $x > -3$

C $x < -27$

D $x > -27$

- 12 Rajah 2 menunjukkan sebuah tangki air berbentuk silinder.
Diagram 2 shows a cylindrical water tank.



Rajah 2 / Diagram 2

Diberi jejari silinder ialah $(3x - 2)$ cm. Ungkapkan isipadu, dalam cm^3 , silinder itu.

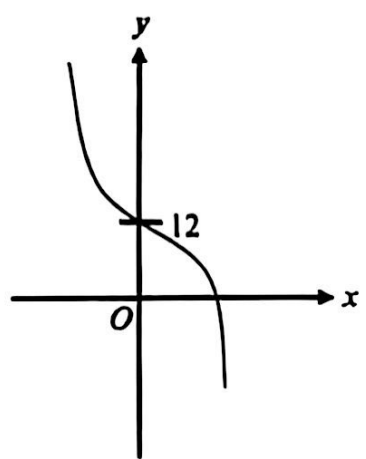
Given that the radius of a cylinder is $(3x - 2)$ cm. Express the volume in cm^3 , of the cylinder.

- A $(480x^2 + 320)\pi$
B $(480x^2 + 960x + 320)\pi$
C $(720x^2 - 960x + 320)\pi$
D $(720x^2 + 960x - 320)\pi$

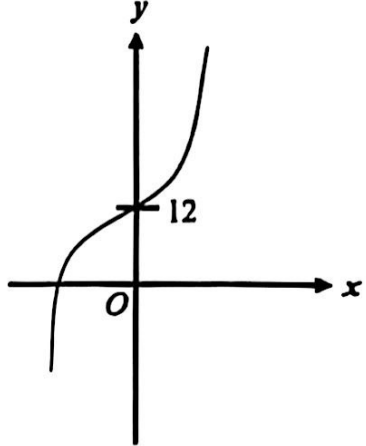
13 Antara berikut graf manakah yang mewakili $f(x) = 12 - x^3$?

Which of the following graphs represents the $f(x) = 12 - x^3$?

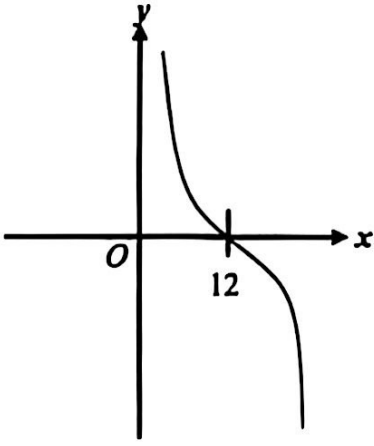
A



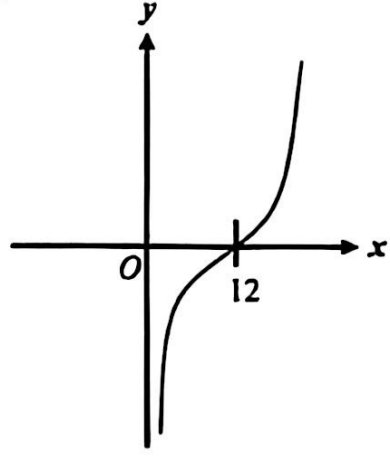
B



C



D



- 14 Cari punca-punca bagi persamaan kuadratik, $x(x-7)=3\left(\frac{2}{3}-\frac{7x}{2}\right)$.

Find the roots of the quadratic equation, $x(x-7)=3\left(\frac{2}{3}-\frac{7x}{2}\right)$.

A $x=-4, x=-\frac{1}{2}$

B $x=-4, x=\frac{1}{2}$

C $x=4, x=-\frac{1}{2}$

D $x=4, x=\frac{1}{2}$

- 15 Diberi matriks $P = \begin{bmatrix} -3 & 6 \\ 0 & 4 \\ 1 & 8 \end{bmatrix}$

Tentukan unsur p_{32} .

Given that matrix $P = \begin{bmatrix} -3 & 6 \\ 0 & 4 \\ 1 & 8 \end{bmatrix}$

Determine the elements p_{32}

A 8

B 6

C 1

D -3

16 $\frac{1}{2}\begin{bmatrix} -2 & -6 \\ 4 & -4 \end{bmatrix} + 3\begin{bmatrix} -1 & 4 \\ 3 & -1 \end{bmatrix} - \begin{bmatrix} 3 & -4 \\ 2 & -1 \end{bmatrix} =$

A $\begin{bmatrix} -7 & 5 \\ 13 & 12 \end{bmatrix}$

B $\begin{bmatrix} -7 & 13 \\ 9 & -4 \end{bmatrix}$

C $\begin{bmatrix} -7 & 13 \\ 7 & -4 \end{bmatrix}$

D $\begin{bmatrix} -7 & -4 \\ 13 & -10 \end{bmatrix}$

17 Jadual 2 menunjukkan beberapa nilai bagi pembolehubah x dan y , dengan keadaan y berubah secara songsang dengan punca kuasa tiga x .

Table 2 shows several values for the variables x and y , such that y varies inversely with the cube root of x .

x	1	m
y	2	4

Jadual 2 / Table 2

Hitung nilai m .
Calculate the value of m .

A $\frac{1}{64}$

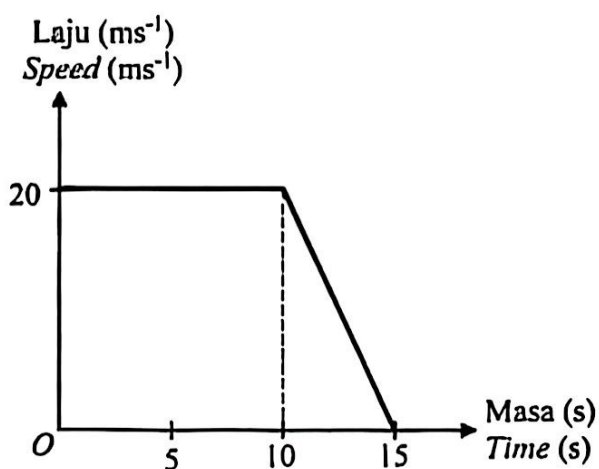
B $\frac{1}{8}$

C 8

D 64

- 18 Rajah 3 menunjukkan graf laju-masa bagi pergerakan sebuah zarah dalam tempoh 15 saat.

Diagram 3 shows the speed-time graph for the movement of a particle for a period of 15 seconds.



Rajah 3 / Diagram 3

Hitung nyah pecutan, dalam ms^{-1} , zarah itu dalam 5 saat terakhir.

Calculate the deceleration in ms^{-1} of the particle for the last 5 seconds.

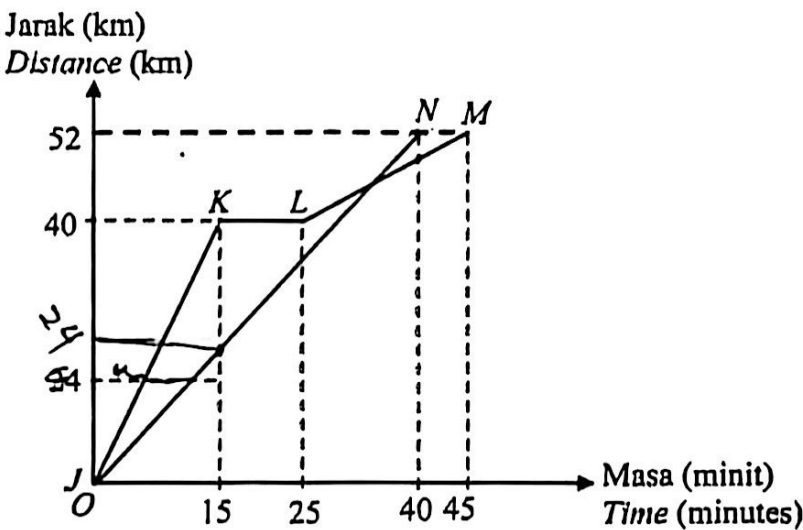
- A 0.25
- B 1.33
- C 4.00
- D 5.00

- 19 Senaraikan semua integer x yang memuaskan kedua-dua ketaksamaan linear serentak $\frac{1}{2}(x-4) \leq x-1$ dan $4x-2 < 10$.

List all the integers of x that satisfy the linear inequalities $\frac{1}{2}(x-4) \leq x-1$ and $4x-2 < 10$

- A -2,-1,0,1,2,3
- B -2,-1,0,1,2
- C -1,0,1,2,3
- D -1,0,1,2
- 20 Rajah 4 menunjukkan graf jarak-masa perjalanan sebuah bas JN dan sebuah kereta $JKLM$ untuk tempoh 45 minit menuju ke destinasi yang sama.

Diagram 4 shows the distance-time graph of a bus, JN and a car, $JKLM$ travelling for a period of 45 minutes to the same destination.



Rajah 4 / Diagram 4

Hitung beza laju bas dan kereta, dalam kmj^{-1} , untuk 15 minit yang pertama.

Calculate the difference in speed between the bus and the car, in kmj^{-1} , for the first 15 minutes.

- A 1.07
- B 2.67
- C 64.0
- D 96.0

21 $\begin{bmatrix} 5 & -2 \\ 2 & 1 \end{bmatrix} \begin{bmatrix} 4 \\ -3 \end{bmatrix} =$

A $\begin{bmatrix} 20 & -8 \\ -6 & -3 \end{bmatrix}$

B $\begin{bmatrix} 20 & 6 \\ 8 & -3 \end{bmatrix}$

C $\begin{bmatrix} 14 \\ 5 \end{bmatrix}$

D $\begin{bmatrix} 26 \\ 5 \end{bmatrix}$

22 $S(4,9)$ ialah imej bagi $T(-2,3)$ di bawah satu translasi $\begin{bmatrix} x \\ y \end{bmatrix}$.

$S(4,9)$ is an image of $T(-2,3)$ under a translation $\begin{bmatrix} x \\ y \end{bmatrix}$.

Nyatakan translasi $\begin{bmatrix} x \\ y \end{bmatrix}$.

State the translation of $\begin{bmatrix} x \\ y \end{bmatrix}$.

A $\begin{bmatrix} 2 \\ -6 \end{bmatrix}$

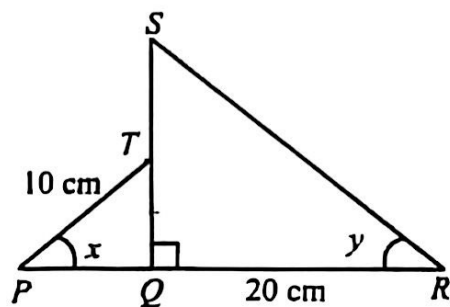
B $\begin{bmatrix} 2 \\ 6 \end{bmatrix}$

C $\begin{bmatrix} 6 \\ 6 \end{bmatrix}$

D $\begin{bmatrix} -6 \\ 6 \end{bmatrix}$



- 23 Rajah 5 menunjukkan dua segi tiga bersudut tegak. T ialah titik tengah SQ dan $ST = 8$ cm.
Diagram 5 shows two right-angled triangles. T is the midpoint of SQ and $ST = 8$ cm.



Rajah 5 / Diagram 5

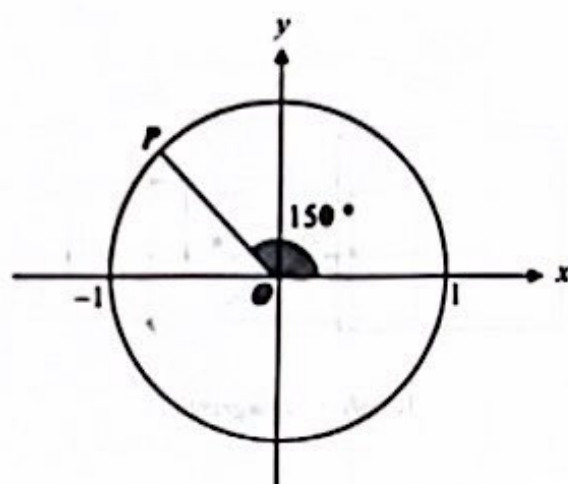
Tentukan nilai bagi $x + y$

Determine the value of $x + y$

- A $14^{\circ}28'$
- B $38^{\circ}39'$
- C $53^{\circ}7'$
- D $91^{\circ}47'$



- 24 Rajah 6 menunjukkan satu bulatan unit.
Diagram 6 shows a circle of units.



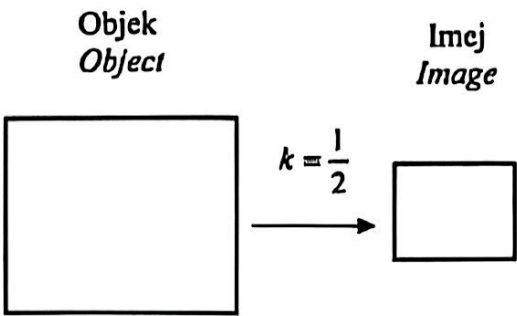
Rajah 6 / Diagram 6

Cari koordinat titik P .

Find the coordinate of point P .

- A $(-0.87, 0.50)$
- B $(0.87, 0.50)$
- C $(0.50, -0.87)$
- D $(-0.50, 0.87)$

- 25 Rajah 7 menunjukkan dua sisi empat P dan Q .
Diagram 7 shows two quadrilaterals, P and Q .



Rajah 7 / Diagram 7

Sisi empat Q ialah imej bagi sisi empat P di bawah satu pembesaran. Faktor skala bagi pembesaran itu ialah $\frac{1}{2}$.

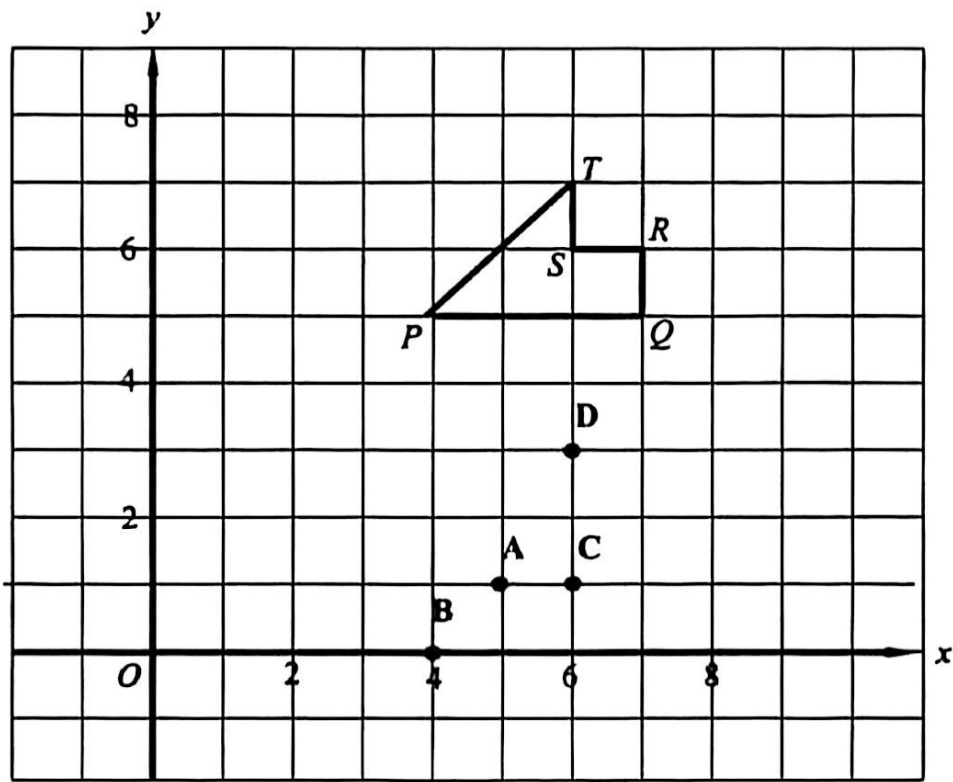
Antara berikut, pernyataan manakah yang benar tentang saiz imej dan saiz objek?

Quadrilateral Q is the image of quadrilateral P under an enlargement. The scale factor for the enlargement is $\frac{1}{2}$.

Which of the following statements is true about the size of the image and the size of the object?

- A Saiz imej lebih besar daripada saiz objek
The size of the image is larger than the size of the object
- B Saiz imej sama dengan saiz objek
The size of the image is equal to the size of the object
- C Saiz imej lebih kecil daripada saiz objek
The size of the image is smaller than the size of the object
- D Kedudukan imej bertentangan dengan objek
The position of the image is opposite to the object

- 26 Rajah 8 menunjukkan pentagon tak sekata $PQRST$ dilukis pada satu satah Cartes.
Diagram 8 shows an Irregular pentagon $PQRST$ drawn on a Cartesian plane.



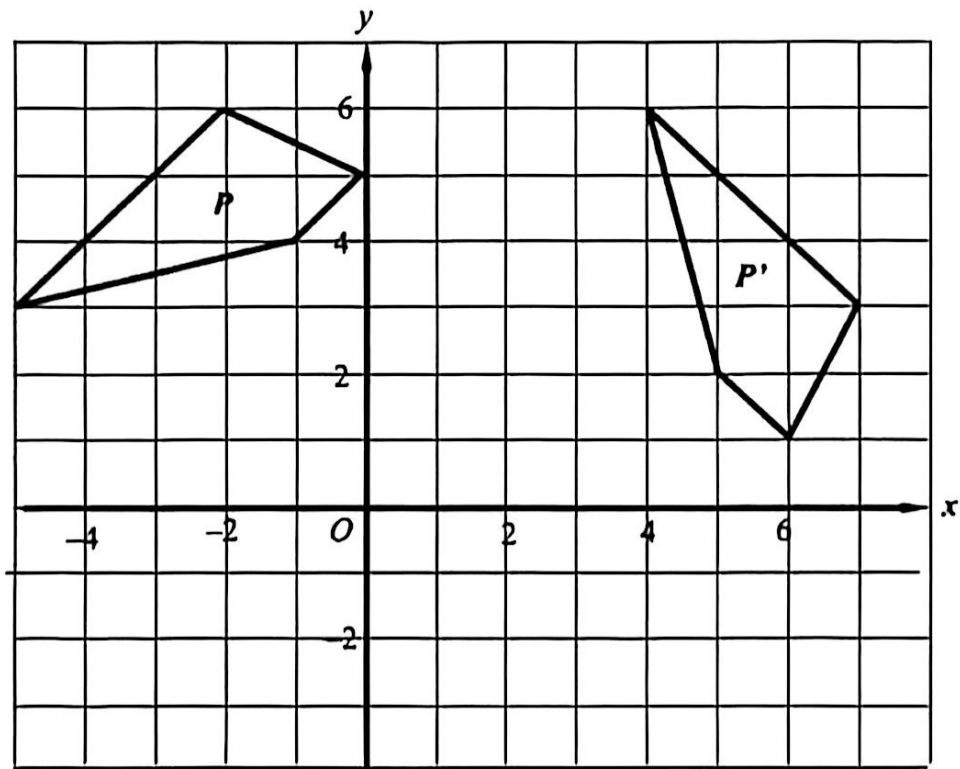
Rajah 8 / Diagram 8

Antara titik-titik A, B, C dan D, yang manakah imej bagi bucu S di bawah putaran 90° ikut arah jam pada pusat $(3, 4)$?

Which of the points A, B, C and D is the image of vertex S under a rotation of 90° clockwise at centre $(3, 4)$?

- 27 Rajah 9 menunjukkan dua buah sisi empat yang dilukis pada grid segi empat sama. P' ialah imej bagi P di bawah suatu putaran.

Diagram 9 shows two quadrilaterals drawn on a grid of equal squares. P' is the image of the P under a rotation.



Rajah 9 / Diagram 9

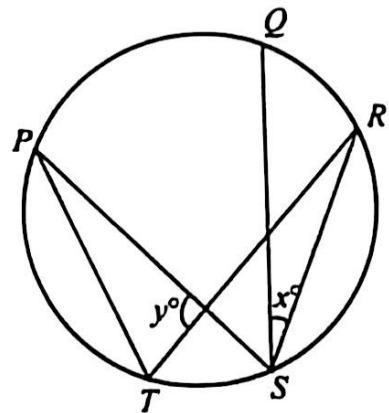
Perihalkan putaran itu.

Describe the rotation.

	Pusat / Centre	Arah / Direction	Sudut / Angle
A	(0,1)	Ikut Arah Jam Clockwise	90°
B	(1,0)	Ikut Arah Jam Clockwise	90°
C	(1,0)	Lawan Arah Jam Anti-Clockwise	90°
D	(1,1)	Lawan Arah Jam Anti-Clockwise	90°

- 28 Rajah 10 menunjukkan sebuah bulatan $PQRST$. Diberi bahawa panjang lengkok $PQ = 2ST$ dan $\angle TPS = 25^\circ$.

Diagram 10 shows a circle $PQRST$. Given that the length of arc $PQ = 2ST$ and $\angle TPS = 25^\circ$.



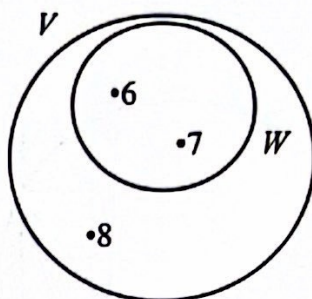
Rajah 10 / Diagram 10

Hitung nilai $x + y$.
Find the value of $x + y$.

- A 125
- B 115
- C 105
- D 95

- 29 Rajah 11 menunjukkan gambar rajah Venn dengan set semesta $\xi = V \cup W$.

Diagram 11 shows a Venn diagram with the universe set $\xi = V \cup W$.



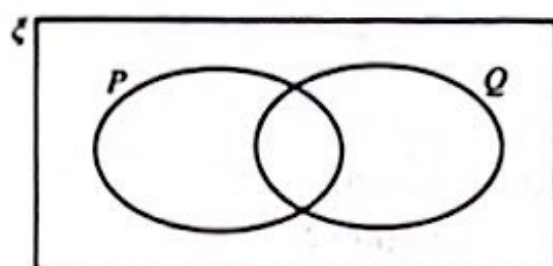
Rajah 11 / Diagram 11

Senaraikan semua subset bagi set V .

List all the subsets of set V .

- A $\{\}, \{6\}, \{7\}, \{8\}$
- B $\{\}, \{6\}, \{7\}, \{6, 7\}$
- C $\{\}, \{6\}, \{7\}, \{8\}, \{6, 7\}, \{6, 8\}, \{6, 7, 8\}$
- D $\{\}, \{6\}, \{7\}, \{8\}, \{6, 7\}, \{6, 8\}, \{7, 8\}, \{6, 7, 8\}$

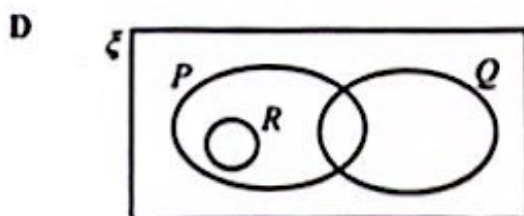
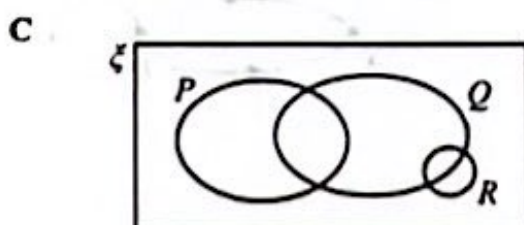
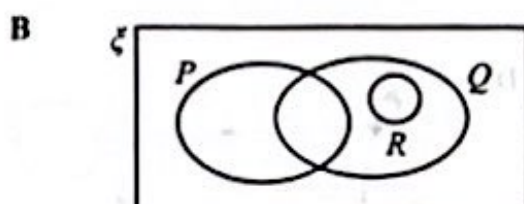
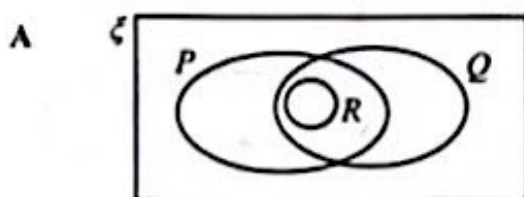
- 30 Rajah 12 menunjukkan gambar rajah Venn dengan set semesta ζ , set P dan set Q .
Diagram 12 shows a Venn diagram with the universal set ζ , set P and set Q .



Rajah 12 / Diagram 12

Diberi set R ialah satu set dengan keadaan $R \cap P = \emptyset$ dan $R \subset Q$. Antara gambar rajah Venn berikut, yang manakah menunjukkan hubungan antara set P , set Q dan set R .

Given a set R is a set with the conditions $R \cap P = \emptyset$ and $R \subset Q$. Which of the following Venn diagrams shows the relationship between set P , set Q and set R ?



- 31 Diberi maklumat darjah bagi satu graf terarah dengan empat bucu, $V = \{P, Q, R, S\}$ adalah seperti berikut :

Given the degree information for a directed graph with four vertices, $V = \{P, Q, R, S\}$ is as follows :

$$d_{in}(P) = 1, d_{out}(P) = 1$$

$$d_{in}(Q) = 2, d_{out}(Q) = 2$$

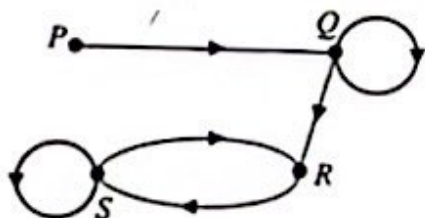
$$d_{in}(R) = 3, d_{out}(R) = 2$$

$$d_{in}(S) = 1, d_{out}(S) = 2$$

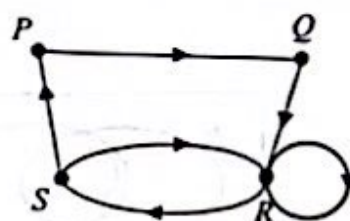
Antara rajah berikut, manakah yang mewakili graf tersebut?

Which of the following diagrams represents the graph?

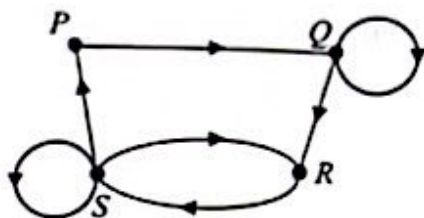
A



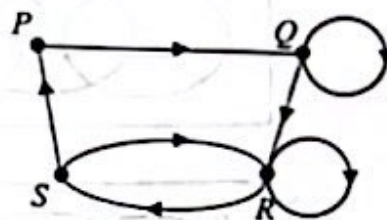
B



C

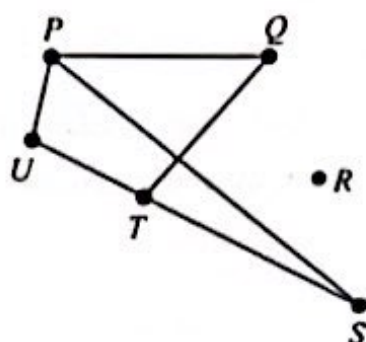


D



32 Rajah 32 menunjukkan satu graf mudah.

Diagram 32 shows a simple graph.



Rajah 32 / Diagram 32

Antara berikut, yang manakah merupakan senarai bucu bagi graf yang diberikan ?

Which of the following is the list of vertices for the given graph ?

- A {P, Q, R, S}
- B {P, Q, R, S, T}
- C {P, Q, S, T, U}
- D {P, Q, R, S, T, U}

33 Rajah 13 menunjukkan satu hujah deduktif.
Diagram 13 shows a deductive argument.

Premis 1	: Jika $m + 1 = 5$, maka m adalah nombor positif
Premise 1	: <i>If $m + 1 = 5$, then m is a positive number .</i>
Premis 2	:
Premise 2	:
Kesimpulan	: $m + 1 \neq 5$
Conclusion	: $m + 1 \neq 5$

Rajah 13 / Diagram 13

Antara premis 2 berikut, yang manakah menjadikan hujah di atas sah dan munasabah?
Which of the following 2 premises makes the above argument valid and sound?

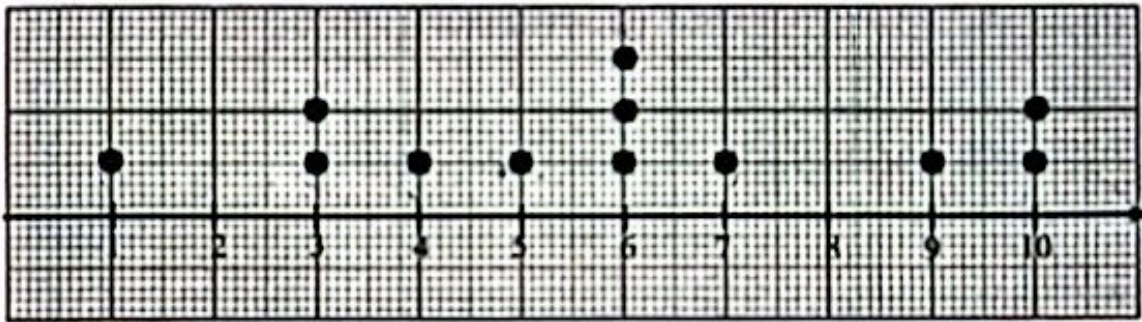
- A m adalah nombor negatif
 m is a negative number
- B m bukan nombor positif
 m is not a positive number
- C 5 adalah nombor positif
5 is a positive number
- D 5 bukan nombor positif
5 is not a positive number

- 34 Min bagi lapan nombor ialah 55. Jika satu nombor, q , ditambah ke dalam set data tersebut, min baharu ialah 53. Apakah nilai q ?

The mean of eight numbers is 55. If a number, q , is added into the set of data, the new mean is 53. What is the value of q ?

- A 25
- B 32
- C 37
- D 43

- 35 Rajah 13 menunjukkan plot titik bagi suatu data
Diagram 13 shows a dot plot of a set of data.



Rajah 13 / Diagram 13

Antara berikut, manakah menunjukkan data yang betul bagi plot titik itu?
Which of the following show the correct data for the dot plot?

	Min <i>Mean</i>	Median	Julat antara kuartil <i>Interquartile range</i>
A	5.83	6	4.5
B	5.83	5	4.5
C	6	5	9
D	6	6	9

- 36 Satu set data mengandungi lima nombor. Median dan mod bagi set data ini ialah masing-masing 10 dan 12. Antara set berikut, yang manakah mewakili data tersebut?

A set of data contains five numbers. The median and the mode of the set of data is 10 and 12. Which of the following sets represent the data respectively?

- A {8, 9, 10, 11, 12}
- B {7, 10, 10, 12, 12}
- C {5, 8, 10, 12, 12}
- D {10, 12, 12, 14, 15}

- 37 Kelas tambahan hujung minggu dihadiri 40 orang murid. Terdapat 18 orang murid perempuan dan beberapa orang murid lelaki.

Hitung kebarangkalian murid lelaki dalam kelas itu.

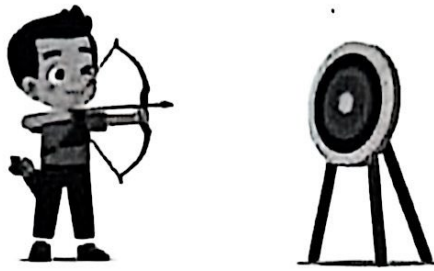
A weekend extra class has 40 students. There are 18 girls and some boys.

Calculate the probability to choose of a boy in that class.

- A $\frac{2}{11}$
- B $\frac{9}{20}$
- C $\frac{11}{20}$
- D $\frac{9}{11}$

- 38 Rajah 14 menunjukkan sebuah papan sasaran yang digunakan oleh Aiman dalam latihan memanah.

Diagram 14 shows a target board used by Aiman during archery practice.



Rajah 14 / Diagram 14

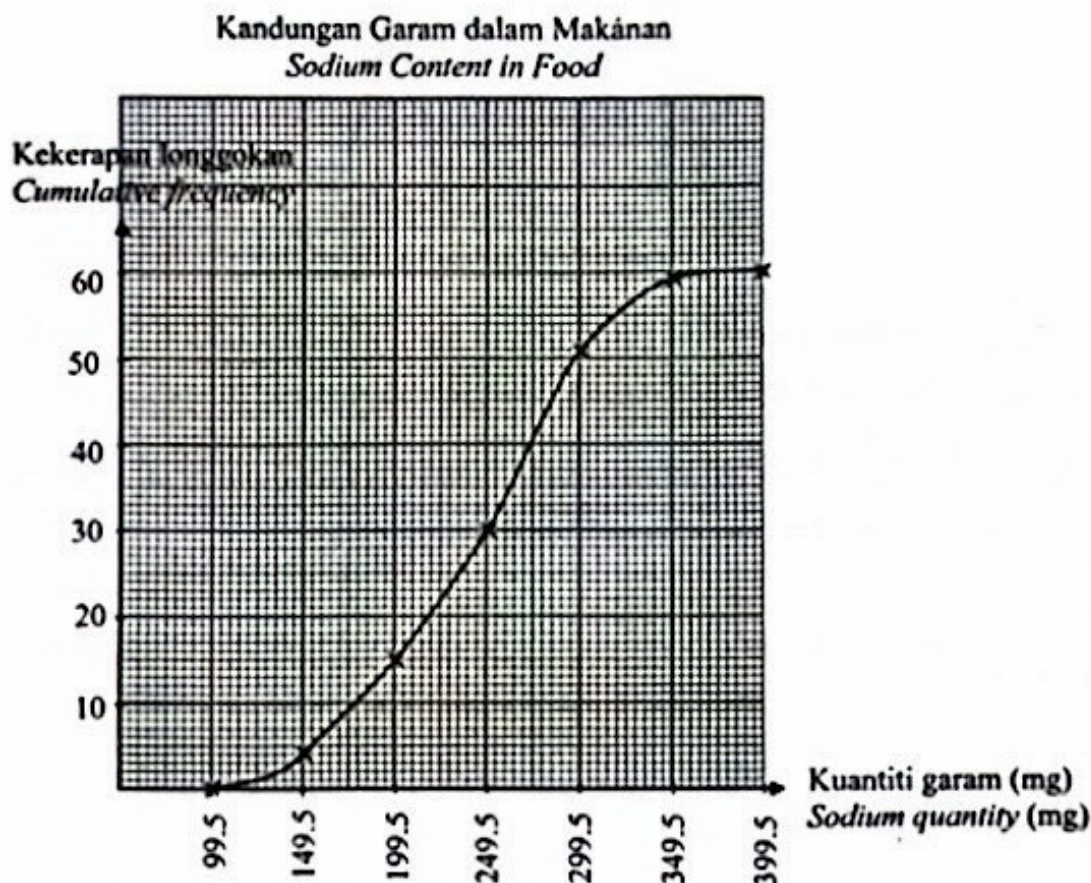
Kebarangkalian Aiman membidik panah dengan tepat ke sasaran ialah 0.85. Jika Aiman melepaskan 60 bidikan, hitung bilangan bidikan yang dijangka tidak tepat.

The probability that Aiman will hit the target accurately is 0.85. If Aiman shoots 60 arrows, calculate the expected number of inaccurate shots.

- A 9
- B 15
- C 45
- D 51
- 39 Seorang pengurus sumber manusia merekodkan umur, dalam tahun bagi 8 orang pekerja di sebuah syarikat ialah 25, 27, 27, x , 32, 33, 50 dan 52. Diberi bahawa min umur pekerja tersebut ialah 34.5.
Hitung sisihan piawai bagi data tersebut.
- A human resources manager records the ages, in years, of 8 employees in a company as 25, 27, 27, x , 32, 33, 50 and 52. Given that the mean age of the employees is 34.5. Calculate the standard deviation of the data.*
- A 7.86
- B 8.86
- C 9.86
- D 10.86

- 40 Rajah 15 ialah sebuah ogif yang menunjukkan maklumat kandungan garam dalam mg yang terdapat dalam 60 jenis makanan.

Diagram 15 is an ogive shows information on the sodium content in mg found in 60 types of food.



Rajah 15 / Diagram 15

Berdasarkan ogif hitung julat antara kuartil.

Based on the ogive, calculate the interquartile range.

- A 84 mg
- B 85 mg
- C 86 mg
- D 87 mg

KERTAS PEPERIKSAAN TAMAT
END OF QUESTIONS PAPER