

Jawab **semua** soalan.

Answer **all** questions.

- Sebutan ke 7, T_7 bagi $-1, 2, -4, 8, \dots$ ialah
The 7th term, T_7 for $-1, 2, -4, 8, \dots$ is
 A. -78 C. -47
 B. -64 D. -32
- Permudahkan $\frac{7}{16} : \frac{3}{4}$ kepada sebutan terendah.
Simplify $\frac{7}{16} : \frac{3}{4}$ to the lowest terms.
 A. 7:12 C. 10:17
 B. 8:13 D. 21:64
- Tulis satu ketaksamaan linear berdasarkan situasi berikut:
Write a linear inequality based on the following situation:

Dina menulis sebuah ringkasan karangan tidak melebihi 100 patah perkataan.

Dina wrote a summary of an essay not exceeding 100 words.

 A. $x > 100$ C. $x \geq 100$
 B. $x < 100$ D. $x \leq 100$
- Sebuah kereta bergerak dengan kelajuan 110 km/j. Hitung jarak, dalam km, yang dilalui oleh kereta itu dalam masa 1 jam 24 minit.
A car moves at a speed of 110 km/h. Calculate the distance, in km, travelled by the car in 1 hour 24 minutes.
 A. 135 C. 160
 B. 154 D. 178
- Isipadu sebiji bola logam berubah secara langsung dengan kuasa tiga jejaringnya. Diberi bahawa isipadu bola besi tersebut ialah 320 cm^3 apabila jejaringnya ialah 4 cm. Hitung diameter bola besi tersebut, dalam m, apabila isipadunya ialah 5000 cm^3 .
The volume of a metal ball varies directly as the cube of its radius. Given that the volume of the metal ball is 320 cm^3 when the radius is 4 cm. Calculate the diameter of the metal ball, in m, when the volume is 5000 cm^3 .
 A. 0.1 m C. 0.3 m
 B. 0.2 m D. 0.4 m
- Diberi bahawa $530_4 = (4^2)m + 12$. Nilai m ialah
Given that $530_4 = (4^2)m + 12$. The value of m is
 A. 2 C. 4
 B. 3 D. 5
- Min skor bagi suatu set data dengan skor 3, 4, 2, 4, x , 8, 6, 4, 3 ialah 6. Tentukan nilai bagi x .
The mean score for a set data with scores 3, 4, 2, 4, x , 8, 6, 4, 3 is 6. Determine the value of x .
 A. 6 C. 20
 B. 14 D. 34
- Antara pernyataan berikut, yang manakah benar?
Which of the following statements is true?
 A. $6 \times 2 = 6^2$ C. $100_2 = 4_{10}$
 B. $5^0 = 0$ D. $-5 > -4$

9. Rashid menerima RM250 sebagai faedah selepas menyimpan sejumlah wang di dalam sebuah bank selama 2 tahun. Bank itu menawarkan kadar faedah sebanyak 2.5% setahun. Berapakah jumlah permulaan wang simpanannya?

Rashid received RM250 as interest after he deposited an amount of money in bank for 2 years. The bank offers an interest rate of 2.5% per annum. How much are his initial savings?

- A. RM500 C. RM5 000
B. RM2 500 D. RM10 000

10. Diberi set $M = \{2, 4, 6\}$ dan $N = \{4, 6, 8, 10\}$, Nyatakan $n(M \cup N)$

Given set $M = \{2, 4, 6\}$ and $N = \{4, 6, 8, 10\}$, State $n(M \cup N)$

- A. 4 C. 6
B. 5 D. 7

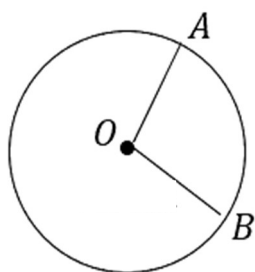
11. Nyatakan saiz selang kelas antara 67 dan 88.

State the size of class interval in between 67 and 88.

- A. 21 C. 77.5
B. 22 D. 80.5

12. Rajah 1 menunjukkan bulatan dengan pusat O .

Diagram 1 shows a circle with centre O .



Rajah 1 / Diagram 1

Diberi luas bulatan tersebut ialah 1386 cm^2 . Nisbah panjang lengkok minor AB kepada panjang lengkok major AB ialah 1:3.

Given the area of the circle is 1386 cm^2 . The ratio of minor arc AB to major arc AB is 1:3. Hitung panjang, dalam cm, lengkok minor itu. Calculate the length, in cm, of the minor arc.

[Guna / use $\pi = \frac{22}{7}$]

- A. 21 C. 99
B. 33 D. 132

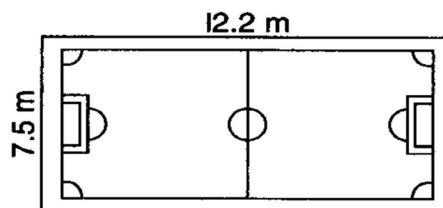
13. Diberi $\tan \theta = -0.8390$ dan $180^\circ \leq \theta \leq 360^\circ$, hitung sudut θ .

Given $\tan \theta = -0.8390$ and $180^\circ \leq \theta \leq 360^\circ$, calculate the angle θ .

- A. 220° C. 300°
B. 260° D. 320°

14. Rajah 3 menunjukkan sebuah padang berbentuk segi empat tepat.

Diagram 3 shows a rectangular shaped field.



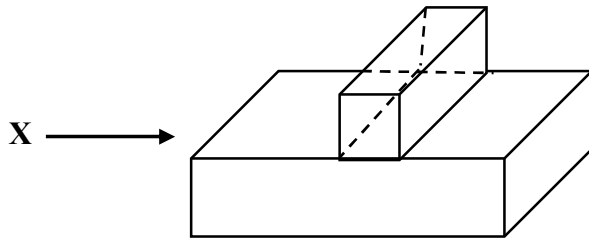
Rajah 3 / Diagram 3

Hitung perimeter, dalam cm, bagi lukisan berskala padang tersebut yang dilukis dengan skala 1:25.

Calculate the perimeter, in cm, for the scale drawing of the field drawn with scale of 1:25.

- A. 39.4 cm C. 191.5 cm
B. 93.4 cm D. 157.6 cm

15. Rajah 2 menunjukkan sebuah pepejal.
Diagram 2 shows a solid.

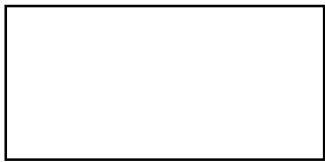


Rajah 2 / Diagram 2

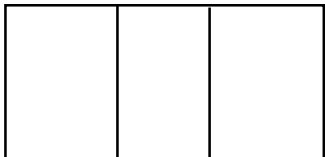
Antara berikut, yang manakah menunjukkan dongakan bagi objek tersebut, sebagaimana dilihat dari X ?

Which of the following shows the elevation of the object, as seen from X ?

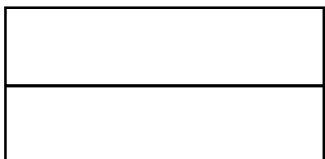
A



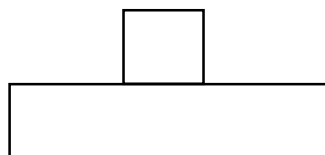
B



C

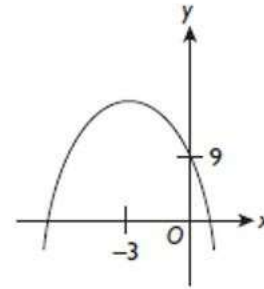


D

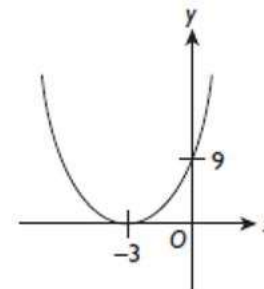


16. Antara graf berikut, yang manakah mewakili $f(x) = 9 - 6x + x^2$?
Which of the following graphs represent $f(x) = 9 - 6x + x^2$?

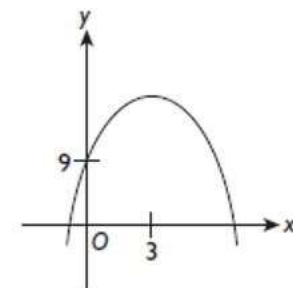
A



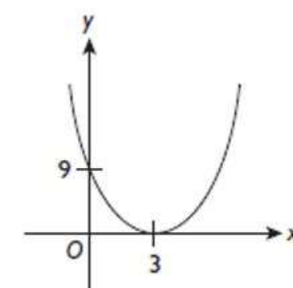
B



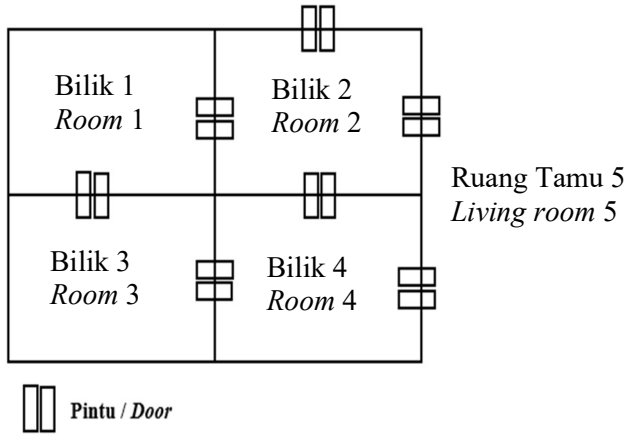
C



D



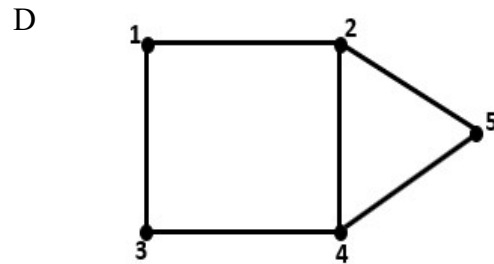
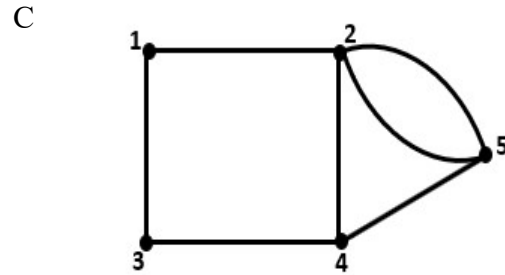
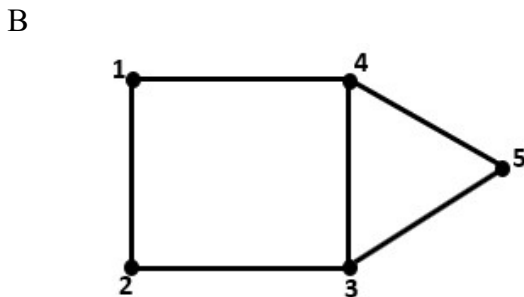
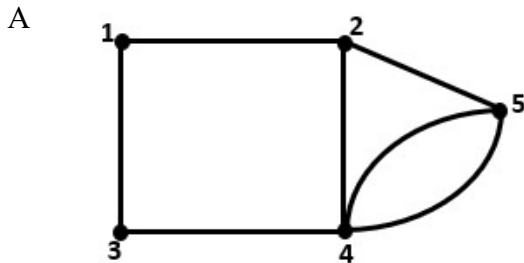
17. Rajah 4 menunjukkan pelan sebuah rumah yang menunjukkan bilik-bilik dan ruang tamu.
Diagram 4 shows a plan of a house that shows rooms and living room.



Rajah 4 / Diagram 4

Antara rangkaian berikut, yang manakah menunjukkan sambungan antara bilik dengan ruang tamu?

Which of the following networks shows the connection between rooms and living room?



18. Puan Salmah mempunyai polisi insurans perubatan dengan peruntukan deduktibel sebanyak RM2 000 dan penyertaan peratusan ko-insurans 80/20 dalam polisinya. Baru-baru ini, dia menjalani pembedahan jantung dan bil perubatannya ialah RM120 000. Berapakah kos bayaran yang di tanggung oleh syarikat insurans?
Madam Salmah has a medical insurance policy with a deductible allocation of RM 2000 and a 80/20 co-insurance percentage participation in his policy. Recently, she underwent heart surgery, and her medical bill was RM120 000. What is the cost of payment borne by the insurance company?

- A. RM23 600 C. RM94 400
B. RM94 000 D. RM96 000

19. $6.01 \times 10^5 - 4.35 \times 10^3 =$

- A. 1.66×10^4
B. 6.0565×10^4
C. 5.575×10^5
D. 5.9665×10^5

20. Puan Azura menerima jumlah pendapatan RM10 580 pada bulan April. Jika perbelanjaan tidak tetap pada bulan itu ialah RM2 240, maka terdapat aliran tunai negatif sebanyak RM750. Hitung perbelanjaan tetap bulanan Puan Azura. *Puan Azura received total income of RM10 580 in April. If the monthly variable expenses for that month is RM2 240, then there will be a negative cash flow of RM750. Calculate Puan Azura's monthly fixed expenses.*

A. RM9 830 C. RM8 340
B. RM9 090 D. RM7 590

21. Permudahkan $\frac{8}{k-4} \div \frac{5h}{6k-24}$.

Simplify $\frac{8}{k-4} \div \frac{5h}{6k-24}$.

A. $\frac{48}{5h}$ C. $\frac{5h}{48}$

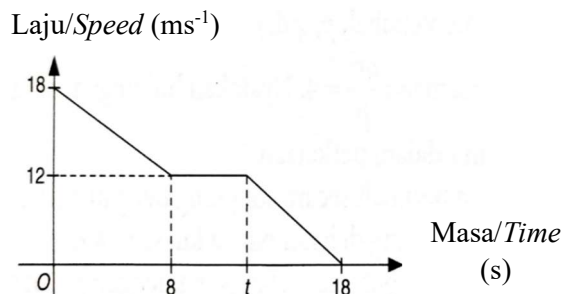
B. $\frac{40h}{k-4}$ D. $\frac{40h}{k+4}$

22. M ialah satu translasi $\begin{pmatrix} -1 \\ 3 \end{pmatrix}$ dan N ialah putaran 90° ikut arah jam pada asalan. Nyatakan koordinat imej bagi titik (3, 4) di bawah gabungan penjelmaan MN.

M is a translation $\begin{pmatrix} -1 \\ 3 \end{pmatrix}$ and N is a clockwise rotation of 90° about the origin. State the coordinates of the image under the combined transformation MN.

A. (0, -3) C. (5, -3)
B. (3, 0) D. (0, 0)

23. Rajah 5 menunjukkan graf laju-masa untuk pergerakan suatu zarah dalam tempoh 18 saat. *Diagram 5 shows the speed – time graph of a particle for a period of 18 seconds.*



Rajah 5 / Diagram 5

Tentukan laju seragam zarah itu.

Determine the uniform speed of the particle.

A. 12 ms^{-1} C. 16 ms^{-1}
B. 14 ms^{-1} D. 18 ms^{-1}

24. Hitung nilai yang berikut :

Calculate the value of the following:

$$27^{\frac{2}{3}}$$

A. 3 C. 18
B. 9 D. 27

25. Sebuah kereta api P bertolak dari bandar Q menuju bandar R. Perjalanan mengambil masa selama t jam. Berdasarkan pernyataan di atas, yang manakah merupakan pemboleh ubah.

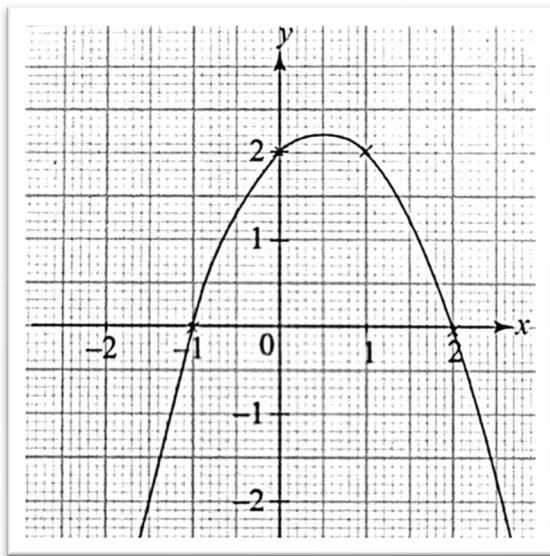
A train A departs from city B to city C. The journey takes t hours. Based on the statement above, which is the variable?

A. P C. R
B. Q D. t

26. Diberi set S ialah satu set nombor ganjil. Antara yang berikut, yang manakah merupakan set S ?
Given that set S is odd numbers set. Which of the following sets is set S ?

- A. $S = \{2, 4, 9, 12, 24\}$
 B. $S = \{-2, 2, 12, 22, 27\}$
 C. $S = \{1, 3, 5, 7, 9\}$
 D. $S = \{4, 14, 24, 34, 44\}$

27. Rajah 6 menunjukkan graf suatu fungsi.
Diagram 6 shows a graph of a function.



Rajah 6 / Diagram 6

Daripada graf, cari nilai-nilai x apabila $y = 2$.

From the graph, find the values of x when

$y = 2$.

- A. $x = 0, x = 1$
 B. $x = 1.5, x = 2.5$
 C. $x = -1, x = 2$
 D. $x = -2, x = 3$

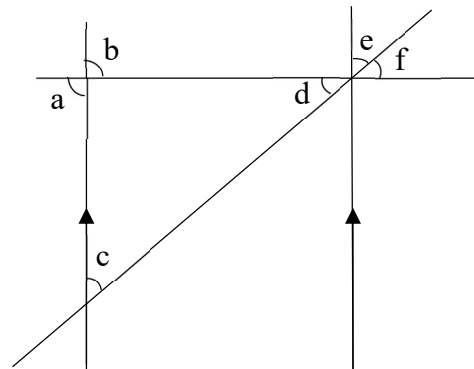
28. Bentukkan persamaan linear dalam satu pemboleh ubah bagi pernyataan berikut:
Construct a linear equation in one variable for the following statement:

Siti membeli 5 batang pen dengan harga y sen sebatang dan sebuah buku berharga RM5. Jumlah wang yang dibayarnya adalah RM8.

Siti bought 5 pens for y cent each and a book for RM5. The amount she paid was RM8.

- A. $5y + 500 = 800$
 B. $5y + 5 = 8$
 C. $5y + 800 = 500$
 D. $5y - 8 = 5$

29. Berdasarkan Rajah 7, antara pasangan berikut, yang manakah ialah sudut pelengkap?
Based on Diagram 7, which of the following pairs are complementary angles?



Rajah 7 / Diagram 7

- A. $\angle a$ dan / and $\angle b$
 B. $\angle a$ dan / and $\angle c$
 C. $\angle e$ dan / and $\angle f$
 D. $\angle d$ dan / and $\angle f$

30. Diberi $G(\sqrt{H} - 3) = G - 2\sqrt{H}$, maka $H =$
 Given $G(\sqrt{H} - 3) = G - 2\sqrt{H}$, then $H =$

- A. $\frac{4G}{(G+2)^2}$
 B. $\frac{G^2 - 9}{G^2 - 4}$
 C. $\left(\frac{G-3}{G-2}\right)^2$
 D. $\left(\frac{4G}{(G+2)}\right)^2$

31. Rajah 8 ialah plot batang-dan-daun yang menunjukkan skor dalam satu ujian.

Diagram 8 is a stem-and-leaf plot showing the score of participants in a competition.

Batang Stem	Daun Leaf
6	1 2 5 6
7	0 1 1 2 4 7 8 9
8	3 3 3 3 5
9	0 0 1 2 2 4

Rajah 8 / Diagram 8

Kekunci/key : 6|1 bermakna/means 61

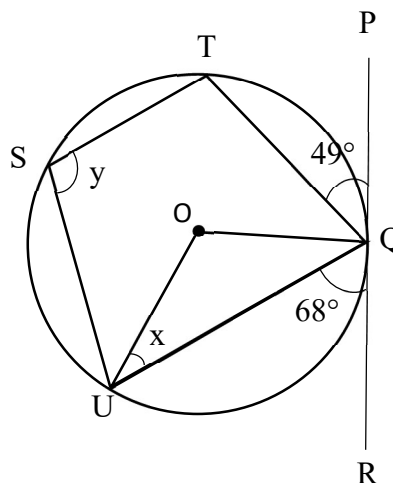
Nyatakan julat skor dengan kekerapan tertinggi.

State the range of score with the highest frequency.

- A. 61 hingga / to 66
 B. 70 hingga / to 79
 C. 83 hingga / to 85
 D. 90 hingga / to 94

32. Rajah 9 menunjukkan sebuah bulatan berpusat O . PQR ialah tangen kepada bulatan pada titik Q .

Diagram 9 shows a circle with centre O . PQR is a tangent to the circle at point Q .



Rajah 9 / Diagram 9

Cari nilai bagi $y - x$.

Find the value of $y - x$.

- A. 80° C. 90°
 B. 85° D. 95°

33. Antara titik berikut, yang manakah tidak memuaskan ketaksamaan yang diberi?

Which of the following points does not satisfy the given inequality?

Titik Point	Ketaksamaan Inequalities
A. $(-1, -4)$	$y < 2x + 3$
B. $(3, 12)$	$y > 2x + 3$
C. $(-2, 10)$	$y < 8 - 4x$
D. $(-3, 2)$	$y > 8 - 4x$

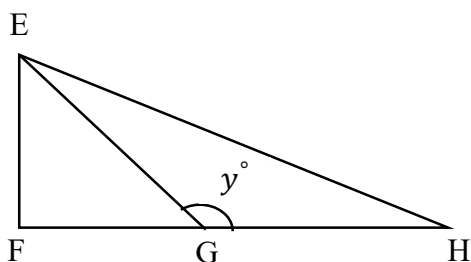
34. Tukarkan persamaan garis lurus di bawah kepada bentuk $y = mx + c$.
Change the equation of straight line below to the form of $y = mx + c$.

$$\frac{2x}{3} + \frac{y}{2} = 1$$

- A. $y = -\frac{4}{3}x + 2$
 B. $y = \frac{4}{3}x + 2$
 C. $y = 4x + 3$
 D. $y = 4x + 2$

35. Dalam Rajah 10, $GH = 6$ cm, $EH = 10$ cm dan $EG = \frac{1}{2}EH$.

In Diagram 10, $GH = 6$ cm, $EH = 10$ cm and $EG = \frac{1}{2}EH$.



Rajah 10 / Diagram 10

Diberi nisbah panjang FG kepada panjang FH ialah 2 : 5, cari $\sin y^\circ$.

Given that the ratio of the length FG to the length of FH is 2 : 5. Find the $\sin y^\circ$.

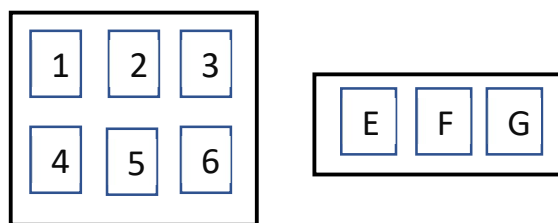
- A. $\frac{3}{5}$ C. $-\frac{2}{5}$
 B. $\frac{2}{5}$ D. $-\frac{3}{5}$

36. $\begin{pmatrix} 3 & \frac{1}{4} \end{pmatrix} \begin{pmatrix} 0 & -5 \\ 20 & 8 \end{pmatrix} =$

- A. $\begin{pmatrix} 5 & -13 \end{pmatrix}$ C. $\begin{pmatrix} 60 & \frac{7}{4} \end{pmatrix}$
 B. $\begin{pmatrix} 5 \\ -13 \end{pmatrix}$ D. $\begin{pmatrix} 60 \\ \frac{7}{4} \end{pmatrix}$

37. Rajah 11 menunjukkan kad-kad di dalam kotak K dan L.

Diagram 11 shows the cards in box K and box L.



Rajah 11 / Diagram 11

Sekeping kad dipilih secara rawak dari setiap kotak itu. Hitung kebarangkalian mendapat satu nombor genap dan satu huruf vokal.

A card is chosen at random from each box. Calculate the probability of getting an even number and a vowel.

- A. $\frac{1}{2}$ C. $\frac{1}{6}$
 B. $\frac{1}{3}$ D. $\frac{1}{9}$

38. Cukai jualan dan perkhidmatan akan dibayar kepada:

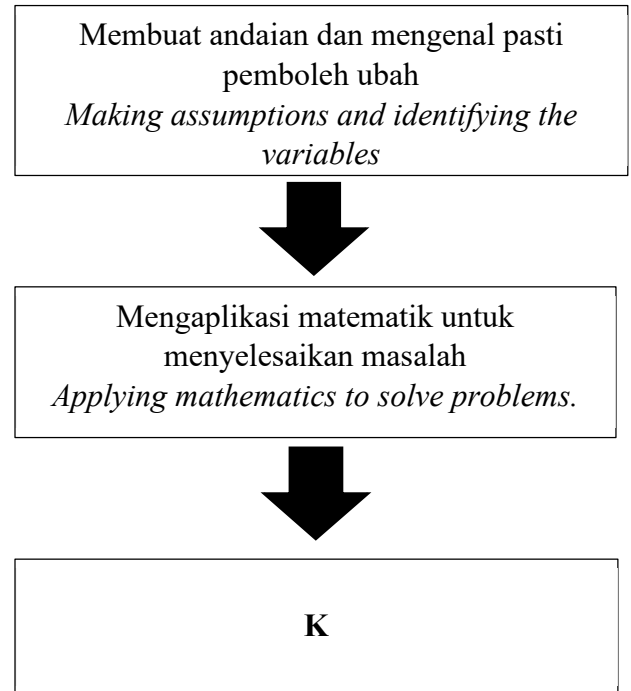
The sales and service tax will be paid to:

- A. Jabatan Pengangkutan Jalan
Road Transport Department
 B. Pejabat Tanah Negeri
State Land Office
 C. Lembaga Hasil Dalam Negeri
Inland Revenue Board
 D. Jabatan Kastam Diraja Malaysia
Royal Malaysian Customs Department

39. Lokasi empat buah pekan pada satah Cartes masing-masing ialah $T(50, -150)$, $U(-50, 50)$, $V(100, 100)$ dan W . Seorang juruukur tanah mendapati bahawa jarak di antara pekan T dengan U sama dengan jarak di antara pekan V dengan W manakala jarak di antara pekan U dengan V sama dengan jarak di antara pekan T dengan W . Kampung M berada di tengah-tengah jarak di antara pekan T dengan V . Cari koordinat pekan W .
The locations of four towns in a Cartesian plane are $T(50, -150)$, $U(-50, 50)$, $V(100, 100)$ and W respectively. A land surveyor found that the distance between towns T and U is equal to the distance between towns V and W while the distance between towns U and V is equal to the distance between towns T and W . Village M is located in the middle of the distance between towns T and V . Calculate the coordinates of town W .

- A. $(200, -100)$ C. $(200, 0)$
 B. $(75, -25)$ D. $(100, -100)$

40. Rajah 12 menunjukkan sebahagian proses pemodelan matematik yang tidak lengkap. *Diagram 12 shows part of the incomplete mathematical modelling process.*



Rajah 12 / Diagram 12

Nyatakan komponen bagi K.

State the components of K.

- A. Mengenal pasti dan medefinisikan masalah
Identifying and defining the problems
 B. Menentusahkan dan mentafsir penyelesaian dalam konteks masalah berkenaan
Identifying and interpreting solutions in the context of the problem
 C. Membentuk persamaan matematik dalam konteks dunia sebenar
Forming mathematical equations in real-world contexts
 D. Memurnikan model matematik
Refining the mathematical model

KERTAS PEPERIKSAAN TAMAT
END OF QUESTION PAPER