

# MODUL PINTAS TINGKATAN LIMA

1 JAM 30 MINIT

1449/1

MATEMATIK

Kertas 1

1  
4  
4  
9  
1

JANGAN BUKA KERTAS PEPERIKSAAN INI SEHINGGA DIBERITAHU

1. Kertas peperiksaan ini mengandungi 40 soalan.
2. Jawab semua soalan.
3. Bagi setiap soalan, pilih satu jawapan sahaja. Hitamkan jawapan anda pada kertas jawapan objektif yang disediakan.
4. Kertas peperiksaan ini adalah dalam dwibahasa.
5. Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.
6. Kertas jawapan objektif hendaklah diserahkan kepada pengawas peperiksaan pada akhir peperiksaan.

NAMA : .....

TINGKATAN : .....

Kertas peperiksaan ini mengandungi 35 halaman bercetak dan 1 halaman tidak bercetak.

1449/1

[ Lihat halaman sebelah

**NOMBOR DAN OPERASI  
NUMBERS AND OPERATIONS**

1  $a^n \times a^m = a^{n+m}$

2  $a^n + a^m = a^{n+m}$

3  $(a^n)^m = a^{nm}$

4  $a^{\frac{1}{n}} = \sqrt[n]{a}$

5  $a^{\frac{n}{m}} = (a^n)^{\frac{1}{m}} = \left(a^{\frac{1}{m}}\right)^n$

6  $a^{\frac{n}{m}} = \sqrt[m]{a^n} = (\sqrt[m]{a})^n$

7 Faedah mudah / Simple interest,  
 $I = Prt$

8 Nilai matang / Maturity value,  
 $MV = P \left(1 + \frac{r}{n}\right)^t$

9 Jumlah bayaran balik / Total repayment,  $A = P + Prt$

10 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 / Distance =  $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

2 Titik tengah / Midpoint,

$$(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}\right)$$

3 Laju purata =  $\frac{\text{Jumlah jarak}}{\text{Jumlah masa}}$

4  $m = \frac{y_2 - y_1}{x_2 - x_1}$

$$\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$$

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 =  $\pi d = 2\pi r$   
*Circumference of circle =  $\pi d = 2\pi r$*
- 4 Luas bulatan =  $\pi j^2$   
*Area of circle =  $\pi r^2$*
- 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 lelayang =  $\frac{1}{2} \times$  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 sfера =  $4\pi j^2$   
*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 =  $\pi j^2 l$   
*Volume of cylinder =  $\pi r^2 h$*

14 Isi padu kon =  $\frac{1}{3} \pi j^2 t$

$$\text{Volume of cone} = \frac{1}{3} \pi r^2 h$$

15 Isi padu sfera =  $\frac{4}{3} \pi j^3$

$$\text{Volume of sphere} = \frac{4}{3} \pi r^3$$

16 Isi padu piramid =  $\frac{1}{3} \times \text{luas tapak} \times \text{tinggi}$

$$\text{Volume of pyramid} = \frac{1}{3} \times \text{base area} \times \text{height}$$

17 Faktor skala,  $k = \frac{PA'}{PA}$

$$\text{Scale factor, } k = \frac{PA'}{PA}$$

18 Luas imej =  $k^2 \times \text{luas objek}$

$$\text{Area of image} = k^2 \times \text{area of object}$$

### 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 Antara berikut, yang manakah merupakan ungkapan kuadratik dalam satu pemboleh ubah?  
*Which of the following is the quadratic expression in one variable?*

- A  $r^2 + r^{-1} - 6$
- B  $\frac{1}{x^2} + x + 7$
- C  $3t^2 - 6t = 7$
- D  $2n^2 + 4n^2 - 3$

- 2 Tukarkan  $110_7$ , kepada satu nombor dalam asas dua.  
*Convert  $110_7$ , to a number in base two.*

- A  $101000_2$
- B  $111000_2$
- C  $100100_2$
- D  $111100_2$

- 3 Antara berikut, yang manakah merupakan pernyataan?  
*Which of the following is a statement?*

- A  $m^2 = 16$
- B  $7^2 = 14$
- C  $2x^2 + 3x - 5$
- D  $\frac{a}{b} = 3$

- 4 Jadual 1 menunjukkan markah Irfan bagi empat subjek.  
*Table 1 shows Irfan's marks for four subjects.*

Subjek <i>Subject</i>	Markah <i>Marks</i>
Matematik <i>Mathematics</i>	37 <sub>8</sub>
Sains <i>Science</i>	85 <sub>10</sub>
Sejarah <i>History</i>	68 <sub>9</sub>
Bahasa Inggeris <i>English</i>	59 <sub>10</sub>

Jadual 1  
*Table 1*

Hitung purata markah bagi empat subjek itu dalam asas sepuluh.

*Calculate the average mark for the four subjects in the base ten.*

- A 54.25
- B 59.25
- C 238.00
- D 249.00

- 5 Puan Mary menyimpan wang sebanyak RM3 000 dalam akaun simpanannya dengan kadar faedah 4% setahun dan dikompaun setiap suku tahun.

Berapakah jumlah wang dalam akaun simpanan Puan Mary pada akhir tahun kedua?

*Puan Mary deposited RM3 000 in her savings account with an interest rate of 4% per annum and compounded quarterly.*

*How much money is in Puan Mary's savings account at the end of the second year?*

- A RM3 240.00
- B RM3 244.88
- C RM3 280.40
- D RM3 248.57

- 6 Rajah 1 menunjukkan suatu hujah yang tidak lengkap.

*Diagram 1 shows an incomplete argument.*

Premis 1	: Jika $S = \{a, b, c\}$ , maka bilangan subset bagi $S$ ialah 8.
Premise 1	: If $S = \{a, b, c\}$ , then the number of subsets of $S$ is 8.
Premis 2	: .....
Premise 2	: .....
Kesimpulan	: .....
Conclusion	: .....

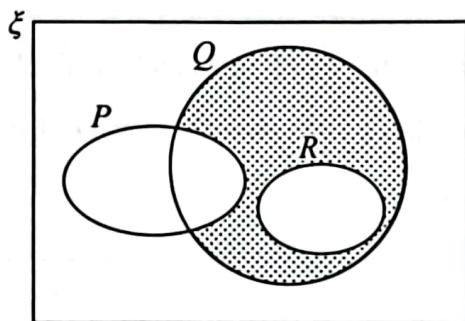
Rajah 1  
Diagram 1

Antara berikut, yang manakah susunan yang betul untuk membentuk hujah deduktif yang sah dan munasabah?

*Which of the following arrangement is correct to form deductive argument which is valid and sound?*

- A Premis 2 : Bilangan subset bagi  $S$  ialah 8.  
*Premise 2 : The number of subsets of  $S$  is 8.*  
Kesimpulan :  $S \neq \{a, b, c\}$   
*Conclusion :  $S \neq \{a, b, c\}$*
- B Premis 2 : Bilangan subset bagi  $S$  ialah 8.  
*Premise 2 : The number of subsets of  $S$  is 8.*  
Kesimpulan :  $S = \{a, b, c\}$   
*Conclusion :  $S = \{a, b, c\}$*
- C Premis 2 : Bilangan subset bagi  $S$  bukan 8.  
*Premise 2 : The number of subsets of  $S$  is not 8.*  
Kesimpulan :  $S \neq \{a, b, c\}$   
*Conclusion :  $S \neq \{a, b, c\}$*
- D Premis 2 :  $S \neq \{a, b, c\}$   
*Premise 2 :  $S \neq \{a, b, c\}$*   
Kesimpulan : Bilangan subset bagi  $S$  bukan 8.  
*Conclusion : The number of subsets of  $S$  is not 8.*

- 7 Rajah 2 menunjukkan gambar rajah Venn bagi set semesta,  $\xi$ , set  $P$ , set  $Q$  dan set  $R$ .  
*Diagram 2 shows the Venn diagram for universal sets  $\xi$ , set  $P$ , set  $Q$  and set  $R$ .*



Rajah 2  
*Diagram 2*

Antara berikut, hubungan set yang manakah mewakili kawasan berlorek di atas?  
*Which of the following relationship of sets represent the shaded region above?*

- A  $P \cup Q \cap R'$
  - B  $P' \cap Q \cap R'$
  - C  $P \cap Q \cap R'$
  - D  $P' \cup Q \cap R'$
- 8 Diberi varians bagi suatu set data ialah 2.8. Jika setiap cerapan dalam set tersebut ditolak dengan 2 dan kemudian dibahagi dengan 3, tentukan nilai varians yang baharu.  
*Given the variance of a set of data is 2.8. If each the value of the data is deducted by 2 and then divided by 3, determine the value of new variance.*
- A 0.089
  - B 0.267
  - C 0.311
  - D 0.933

9 Jadual 2 menunjukkan jenis permainan yang disertai oleh 40 orang murid. Setiap murid menyertai sekurang-kurangnya satu permainan, iaitu catur, karom dan sahibba.

*Table 2 shows types of games participated by 40 pupils. Each pupil participated in at least one games which are chess, carrom or scrabble.*

Permainan <i>Games</i>	Bilangan murid <i>Number of pupils</i>
Catur <i>Chess</i>	18
Sahibba <i>Scrabble</i>	20
Karom <i>Carrom</i>	27
Catur dan sahibba <i>Chess and scrabble</i>	7
Sahibba dan karom <i>Scrabble and carrom</i>	12
Catur, karom dan sahibba <i>Chess, carrom and scrabble</i>	4

Jadual 2  
*Table 2*

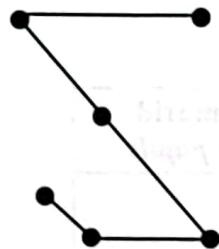
Hitung bilangan murid yang menyertai catur dan karom sahaja.

*Calculate the number of pupils who participated in chess and carrom only.*

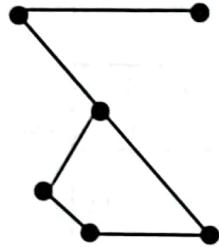
- A 6
- B 10
- C 14
- D 20

- 10 Antara berikut, graf manakah yang merupakan sebuah pokok?  
*Which of the following graphs is a tree?*

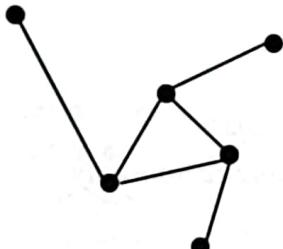
A



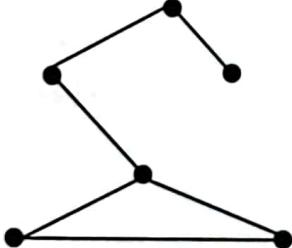
B



C

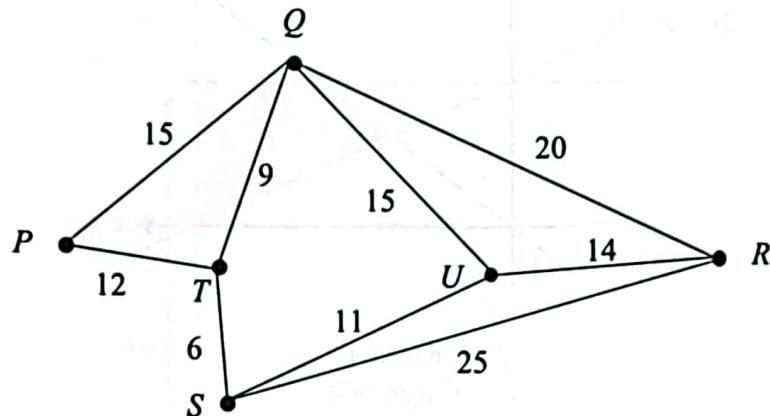


D



- 11 Rajah 3 menunjukkan graf tak terarah dan berpemberat bagi kedudukan enam perhentian bas di sebuah bandar. Pemberat yang ditunjukkan ialah jarak dalam km.

*Diagram 3 shows an undirected and weighted graph for the location of six bus stops in a city. The weights shown are distances in km.*



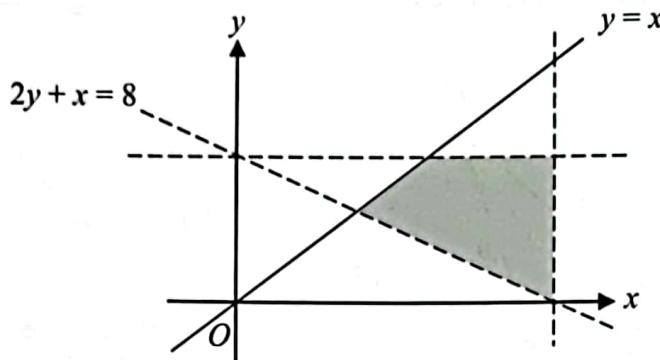
Rajah 3  
Diagram 3

Jika sebuah bas mula bergerak dari  $P$  dan berhenti di  $U$ , cari jarak terpendek yang dilalui oleh bas jika bas melalui setiap perhentian bas sekali sahaja.

*If a bus departed from  $P$  and stopped at  $U$ , find the shortest distance travelled by the bus if the bus passes each bus stop only once.*

- A 65
- B 69
- C 77
- D 78

- 12 Rajah 4 menunjukkan satu rantau berlorek yang memuaskan empat ketaksamaan.  
*Diagram 4 shows a shaded region that satisfies four inequalities.*



Rajah 4  
*Diagram 4*

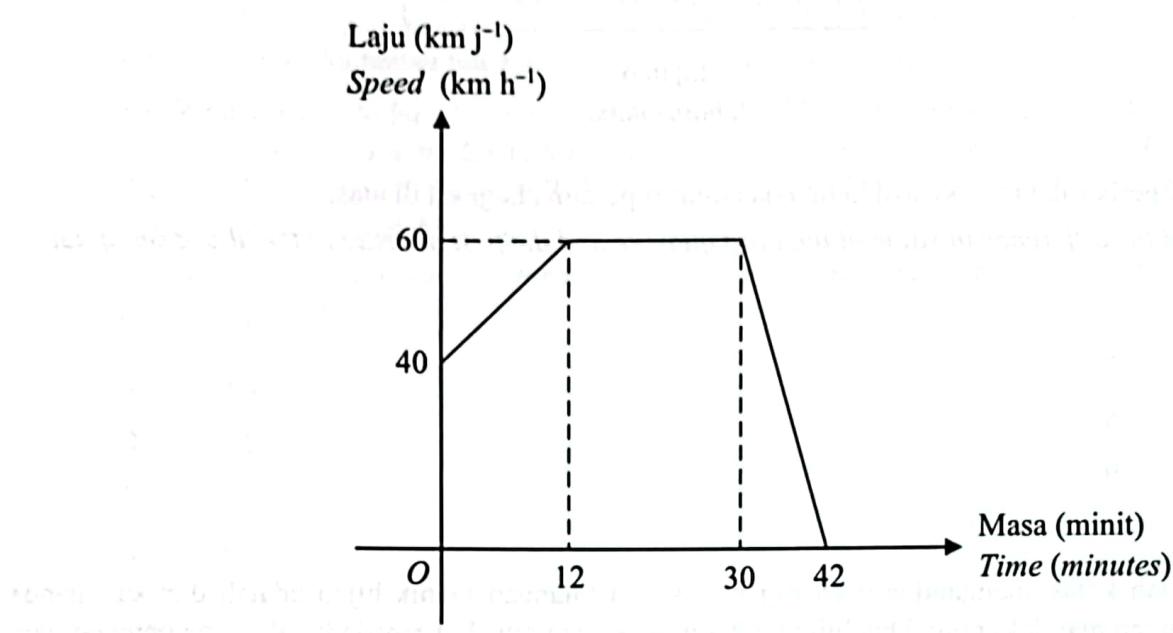
Antara titik-titik koordinat yang berikut, yang manakah terletak dalam rantau berlorek?

*Which of the following coordinates are in the shaded region?*

- A (2 , 4)
- B (3 , 2)
- C (4 , 3)
- D (8 , 4)

- 13 Rajah 5 menunjukkan graf laju-masa bagi gerakan kereta Danial untuk tempoh masa 42 minit selepas mengambil ibunya dari tempat kerja.

*Diagram 5 shows the speed-time graph of Danial's car movement for a period of 42 minutes after picking up his mother from her work place.*



Rajah 5  
Diagram 5

Hitung jumlah jarak, dalam km, yang dilalui oleh Danial dari kelajuan seragam hingga Danial tiba ke destinasi.

*Calculate the total distance, in km, travelled by Danial from uniform speed until he reaches his destination.*

- A 24.0
- B 18.0
- C 14.4
- D 6.0

- 14 Rajah 6 menunjukkan satu set data.

*Diagram 6 shows a set of data.*

6 , 7 , 9 , 5 , 10 , 11 , 12 , 3 , 6 , 10 , 5

Rajah 6  
Diagram 6

Cari perbezaan nilai kuartil ketiga dan kuartil pertama bagi set di atas.

*Find the difference in value of the third quartile and the first quartile of the above set of data.*

- A 6
- B 7
- C 5
- D 9

- 15 Sebuah kotak mengandungi 18 biji manik dan bilangan manik hijau adalah dua kali ganda bilangan manik kuning. Dua biji manik dipilih secara rawak daripada kotak tanpa penggantian. Hitung kebarangkalian mendapat selebih-lebihnya satu manik kuning.

*A box contains 18 beads and the number of green beads is twice the number of yellow beads. Two beads are selected at random from the box without replacement.*

*Calculate the probability of getting at most a yellow bead.*

- A  $\frac{4}{17}$
- B  $\frac{8}{17}$
- C  $\frac{29}{51}$
- D  $\frac{46}{51}$

- 16 Encik Ravi ingin membeli sebidang tanah yang bernilai RM720 000. Beliau bercadang menyimpan 10% daripada harga tanah itu sebagai wang pendahuluan. Pendapatan bulanan Encik Ravi pada tahun 2023 ialah RM7 500. Pada setiap Januari, gajinya akan meningkat sebanyak RM200. Beliau memperuntukkan 15% daripada gaji bulanannya untuk membayar wang pendahuluan pembelian tanah tersebut.

Berapakah bilangan bulan yang diperlukan oleh Encik Ravi dalam mencapai matlamat kewangannya jika beliau mula menyimpan pada bulan Januari 2023?

*Encik Ravi wants to buy a piece of land worth RM720 000. He plans to save 10% of the land price as a down payment. Encik Ravi's monthly income in the year 2023 is RM7 500. In every January, his salary will increase RM200. He allocates 15% from his monthly income to pay for the down payment for the land.*

*How many months will it take for Encik Ravi to reach his financial goal if he starts his saving in January 2023?*

- A 60
- B 61
- C 62
- D 63

17 Antara pernyataan berikut, yang manakah menguraikan persamaan di bawah:

*Which of the following statement describe the equation below:*

$$\frac{5}{y} = 10 \sqrt[3]{x}$$

A  $\frac{1}{y}$  berubah secara langsung dengan  $\sqrt[3]{x}$ .

*$\frac{1}{y}$  varies directly as  $\sqrt[3]{x}$ .*

B  $\sqrt[3]{y}$  berubah secara langsung dengan  $\sqrt[3]{x}$ .

*$\sqrt[3]{y}$  varies directly as  $\sqrt[3]{x}$ .*

C  $\sqrt{y}$  berubah secara langsung dengan  $\sqrt[3]{x}$ .

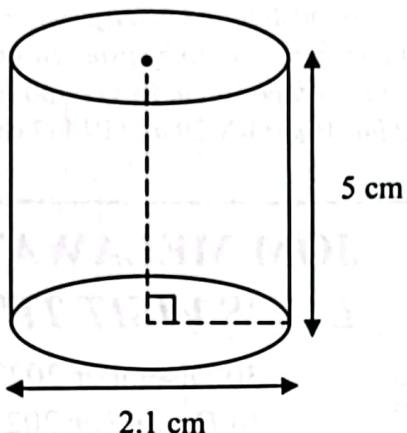
*$\sqrt{y}$  varies directly as  $\sqrt[3]{x}$ .*

D  $y$  berubah secara langsung dengan  $\sqrt[3]{x}$ .

*$y$  varies directly as  $\sqrt[3]{x}$ .*

- 18 Rajah 7 menunjukkan sebuah silinder. Luas permukaan melengkung,  $L \text{ cm}^2$ , silinder itu berubah secara langsung dengan diameter tapaknya,  $d \text{ cm}$ , dan tinggi,  $t \text{ cm}$ .

*Diagram 7 shows a cylinder. The area of the curved surface,  $L \text{ cm}^2$ , of a cylinder varies directly as the diameter of its base,  $d \text{ cm}$ , and its height,  $t \text{ cm}$*



Rajah 7  
Diagram 7

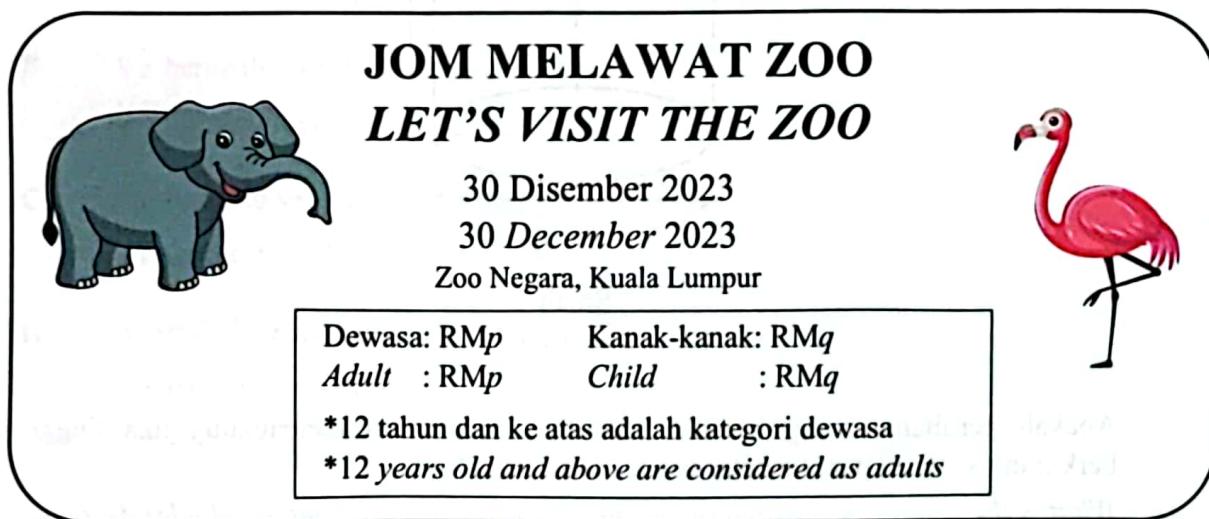
Apakah perubahan yang berlaku pada luas permukaan melengkung jika tinggi silinder berkurang separuh dan diameter tapak adalah tetap?

*What is the change in the area of the curved surface if the height of cylinder decreases by half and the base diameter is fixed?*

- A Tiada perubahan pada luas permukaan melengkung.  
*No changes in the area of curved surface.*
- B Luas permukaan melengkung akan berkurang.  
*The area of curved surface will decrease.*
- C Luas permukaan melengkung akan bertambah.  
*The area of curved surface will increase.*
- D Luas permukaan melengkung akan berkurang separuh.  
*The area of the curved surface will decrease by half.*

- 19 Rajah 8 menunjukkan iklan bagi lawatan sebuah tadika. Hanif dan Hazrena merupakan guru tadika tersebut. Mereka membawa murid tadika ke zoo dengan menggunakan dua buah bas mini. Bas A dinaiki oleh Hanif bersama 12 orang murid manakala bas B dinaiki oleh Hazrena bersama 16 orang murid. Jumlah harga tiket yang dibayar oleh penumpang bas A dan bas B masing-masing ialah RM29 dan RM37.

*Diagram 8 shows an advertisement for a kindergarten trip. Hanif and Hazrena are kindergarten teachers. They brought their pupils to zoo by using two mini buses. Hanif and 12 pupils get into bus A, while Hazrena with another 16 pupils get into bus B. The total ticket price paid by the passengers in bus A and bus B are RM29 and RM37 respectively.*



Rajah 8  
Diagram 8

Antara berikut, yang manakah bentuk matriks yang betul untuk menghitung harga bagi sekeping tiket dewasa dan sekeping tiket kanak-kanak?

*Which of the following is the correct form of matrix to calculate the price of a ticket for an adult and a child?*

- A  $\begin{bmatrix} 1 & 12 \\ 1 & 16 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix} = \begin{bmatrix} 29 \\ 37 \end{bmatrix}$
- B  $\begin{bmatrix} 1 & 1 \\ 12 & 16 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix} = \begin{bmatrix} 29 \\ 37 \end{bmatrix}$
- C  $\begin{bmatrix} 2 & 12 \\ 2 & 16 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix} = \begin{bmatrix} 29 \\ 37 \end{bmatrix}$
- D  $\begin{bmatrix} 2 & 2 \\ 12 & 16 \end{bmatrix} \begin{bmatrix} p \\ q \end{bmatrix} = \begin{bmatrix} 29 \\ 37 \end{bmatrix}$

- 20 Rajah 9 menunjukkan stok susu yang terdapat di Kedai Mini Johan.  
*Diagram 9 shows the available stock of milk at Kedai Mini Johan.*

Perisa susu <i>Flavour of milk</i>	Coklat <i>Chocolate</i>	Strawberi <i>Strawberry</i>
<b>Stok baharu <i>New stock</i></b>		
<b>Stok lama <i>Old stock</i></b>		



Mewakili 200 botol susu  
*Represents 200 bottles of milk*

Rajah 9  
*Diagram 9*

Musa mendapati 36 botol susu berperisa coklat sudah tamat tempoh. Bilangan botol susu berperisa strawberi yang sudah tamat tempoh adalah 2 kali bilangan botol susu berperisa coklat yang sudah tamat tempoh.

Hitung bilangan botol susu untuk kedua-dua perisa yang belum tamat tempoh dalam bentuk matriks baris.

*Musa noticed that 36 bottles of chocolate milk have expired. The number of bottles of strawberry milk that have expired is twice the number of bottles of chocolate milk that have expired.*

*Calculate the number of bottles for both flavoured milk that are not expired in the form of row matrix.*

A  $\begin{bmatrix} 2164 \\ 2128 \end{bmatrix}$

B  $\begin{bmatrix} 2236 \\ 2272 \end{bmatrix}$

C  $[2164 \ 2128]$

D  $[2236 \ 2272]$

- 21 Jadual 3 menunjukkan kadar cukai pendapatan individu untuk pendapatan bercukai antara RM20 001 hingga RM50 000.

*Table 3 shows the individual income tax rate for taxable income between RM20 001 to RM50 000.*

Banjaran Pendapatan Bercukai (RM) <i>Chargeable Income (RM)</i>	Pengiraan (RM) <i>Calculations (RM)</i>	Kadar (%) <i>Rate (%)</i>	Cukai (RM) <i>Tax (RM)</i>
20 001 – 35 000	20 000 pertama <i>On the first 20 000</i> 15 000 berikutnya <i>Next 15 000</i>	3	150 450
35 001 – 50 000	35 000 pertama <i>On the first 35 000</i> 15 000 berikutnya <i>Next 15 000</i>	8	600 1 200

Jadual 3

Table 3

Encik Adam bekerja di sebuah syarikat tempatan mempunyai pendapatan tahunan yang berjumlah RM49 000. Beliau telah membuat tuntutan pelepasan cukai sebanyak RM13 700 dan memberi derma kepada pusat kebajikan yang diluluskan berjumlah RM350 pada tahun berkenaan.

Hitung jumlah cukai pendapatan yang perlu dibayar oleh Encik Adam pada tahun tersebut.

*Encik Adam works in a local company with an annual income of RM49 000. He has claimed tax relief of RM13 700 and has donated RM350 to an approved welfare centre in that year.*

*Calculate the amount of income tax to be paid by Encik Adam in that year.*

- A RM598.50
- B RM274.00
- C RM248.50
- D RM198.50

- 22 Jamie yang berumur 27 tahun merancang membeli satu polisi insurans hayat RM200 000. Kadar premium ialah RM12.45 bagi setiap RM1 000 nilai muka insurans tersebut. Dia bercadang membayar premiumnya secara ansuran bulanan. Bagi pembayaran bulanan, premium tersebut akan ditambah sebanyak 2%.

Hitung premium bulanannya.

*Jamie aged 27 years plans to buy life insurance worth RM200 000. The premium rate is RM12.45 per RM1 000 face value of the insurance. He is going to pay the premium through monthly instalment. For monthly payment, the premium is increased by 2%.*

*Calculate his monthly premium.*

- A RM166.67
- B RM200.40
- C RM207.50
- D RM211.65

- 23 Ringkaskan:

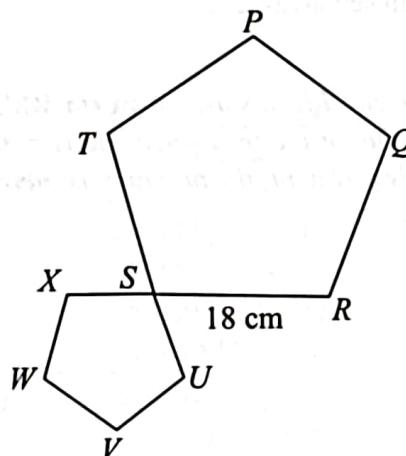
*Simplify:*

$$(2pq^2)^{-4} \times 5p(q^6)^{\frac{1}{2}}$$

- A  $\frac{5}{16p^3q^5}$
- B  $\frac{5}{2p^3q^5}$
- C  $\frac{10p^2}{q^5}$
- D  $\frac{10}{p^3q^5}$

**24** Dalam Rajah 10,  $VWXSU$  ialah imej bagi  $PQRST$  di bawah satu pembesaran.

In Diagram 10,  $VWXSU$  is the image of  $PQRST$  under enlargement.



Rajah 10  
Diagram 10

Diberi  $SR = 3SX$  dan luas  $SUVWX$  ialah  $24 \text{ cm}^2$ .

Hitung luas, dalam  $\text{cm}^2$ , seluruh rajah itu.

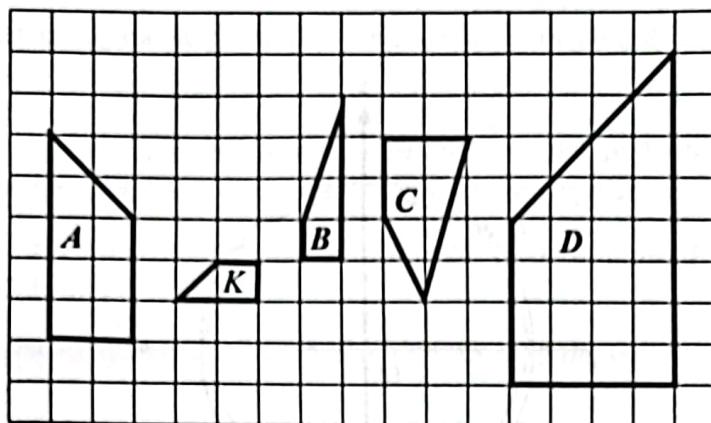
Given  $SR = 3SX$  and the area of  $SUVWX$  is  $24 \text{ cm}^2$ .

Calculate the area, in  $\text{cm}^2$ , of the whole diagram.

- A** 72
- B** 96
- C** 216
- D** 240

- 25 Rajah 11 menunjukkan lima sisi empat, K, A, B, C dan D, yang dilukis pada grid segi empat sama.

*Diagram 11 shows five quadrilaterals, K, A, B, C and D, drawn on square grids.*



Rajah 11  
Diagram 11

Antara sisi empat A, B, C dan D, yang manakah imej bagi sisi empat K di bawah gabungan transformasi putaran dan pembesaran?

*Which of the quadrilaterals, A, B, C or D, is the image of quadrilateral K under the combined transformation of rotation and enlargement?*

- 26 Rajah 12 menunjukkan susunan nombor mengikut suatu jujukan.

*Diagram 12 shows an arrangement of numbers according to a sequence.*

$$\boxed{-11, -6, -1, 4, 9, \dots}$$

Rajah 12  
Diagram 12

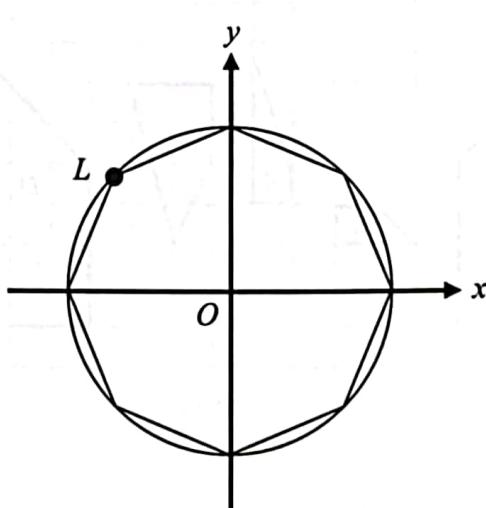
Daripada jujukan nombor di atas, tentukan sebutan ke-17.

*From the sequence number above, determine the 17<sup>th</sup> term.*

- A 69
- B 74
- C - 69
- D - 74

- 27 Rajah 13 menunjukkan sebuah oktagon sekata dilukis dalam bulatan unit.  $O$  adalah titik asalan dan  $L$  adalah satu titik yang berada pada oktagon itu.

Diagram 13 shows a regular octagon drawn in the unit circle.  $O$  is an origin and  $L$  is a point on the octagon.



Rajah 13  
Diagram 13

Cari koordinat titik  $L$ .

Find the coordinate of point  $L$ .

- A  $(-0.707, 0.707)$
- B  $(-1, 0.707)$
- C  $(-1, 1)$
- D  $(-0.707, 1)$

- 28 Kelas 5 Mawar mencatatkan prestasi markah Matematik yang amat rendah dalam Peperiksaan Pertengahan Tahun 2023. Ketua Panitia Matematik mengeluarkan kenyataan berikut:

“Ya, betul. Bentuk taburan data jelas menunjukkan kemerosotan markah kelas 5 Mawar.”

Antara bentuk taburan data yang berikut, yang manakah menunjukkan kesahihan kenyataan di atas?

*Class 5 Mawar obtained a very low results in Mathematics in Mid-Year Examination 2023. The Head of Mathematics Panel came out with the following statement:*

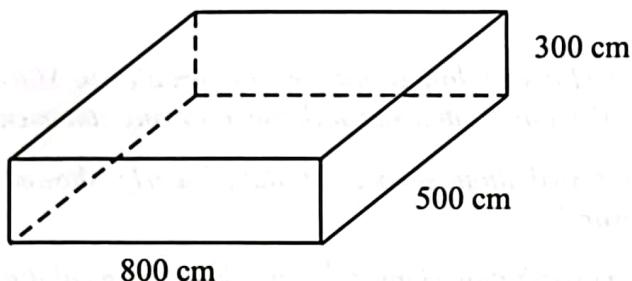
*“Yes, it's true. The distribution shaped of data clearly showed the drastic decline in achievement of 5 Mawar.”*

*Which of the following distribution shaped of data showed the validity of above statement?*

- A Bentuk loceng  
*Bell-shaped*
- B Bentuk seragam  
*Uniform-shaped*
- C Bentuk-J songsang  
*Reverse J-shaped*
- D Bentuk Bimod  
*Bimodal*

- 29 Rajah 14 menunjukkan sebuah tangki kosong berbentuk kuboid berukuran 800 cm panjang, 500 cm lebar dan 300 cm tinggi.

Diagram 14 shows an empty cuboid shaped tank with length of 800 cm, width of 500 cm and height of 300 cm.



Rajah 14  
Diagram 14

Seorang pekerja memasukkan air ke dalam tangki itu sehingga 80% penuh.

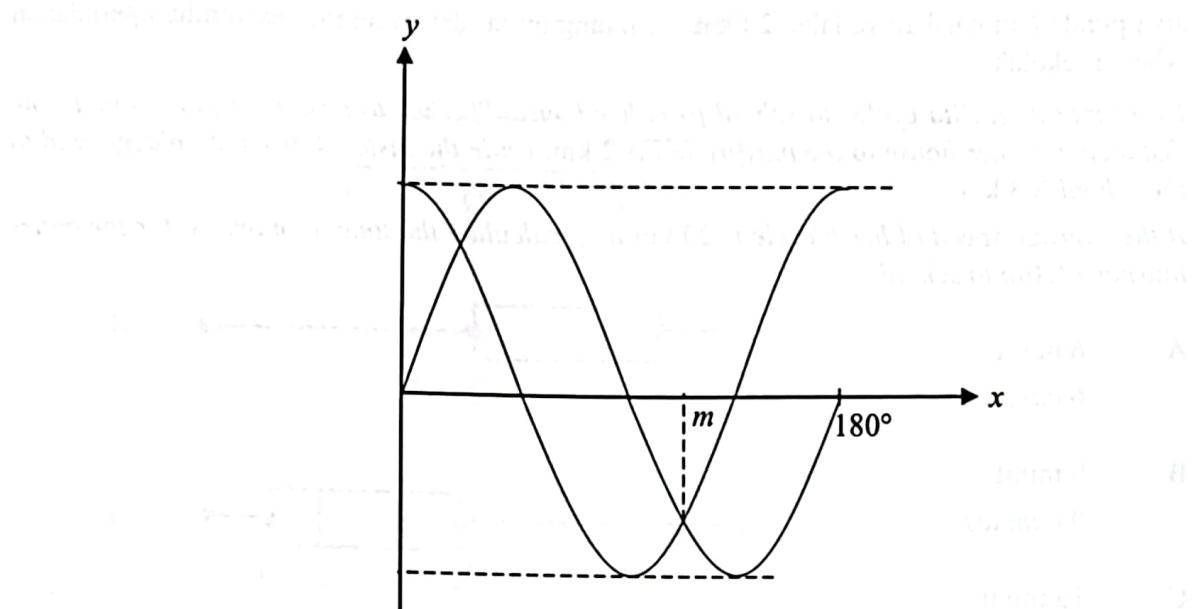
Hitung isi padu, dalam  $\text{cm}^3$ , air dalam tangki itu.

A worker fills 80% of the tank with water.

Calculate the volume, in  $\text{cm}^3$ , of water in the tank.

- A  $1.2 \times 10^6$
- B  $1.2 \times 10^8$
- C  $9.6 \times 10^7$
- D  $9.6 \times 10^9$

- 30 Rajah 15 menunjukkan graf fungsi  $y = \sin 2x$  dan  $y = \cos 2x$  dengan keadaan  $0^\circ \leq x \leq 180^\circ$ .  
*Diagram 15 shows the graph of function  $y = \sin 2x$  and  $y = \cos 2x$  where  $0^\circ \leq x \leq 180^\circ$ .*



Rajah 15  
*Diagram 15*

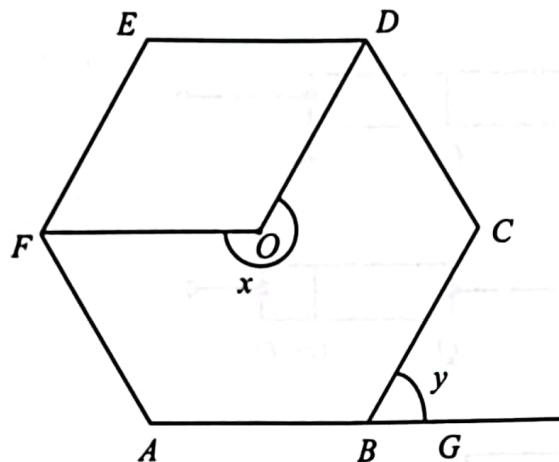
Nyatakan nilai bagi  $m$ .

*State the value of  $m$ .*

- A  $22.5^\circ$
- B  $45^\circ$
- C  $112.5^\circ$
- D  $135^\circ$

- 33 Rajah 16 menunjukkan sebuah heksagon sekata  $ABCDEF$  dengan pusat  $O$ .  $ABG$  ialah garis lurus.

Diagram 16 shows a regular hexagon,  $ABCDEF$  with centre  $O$ .  $ABG$  is a straight line.



Rajah 16  
Diagram 16

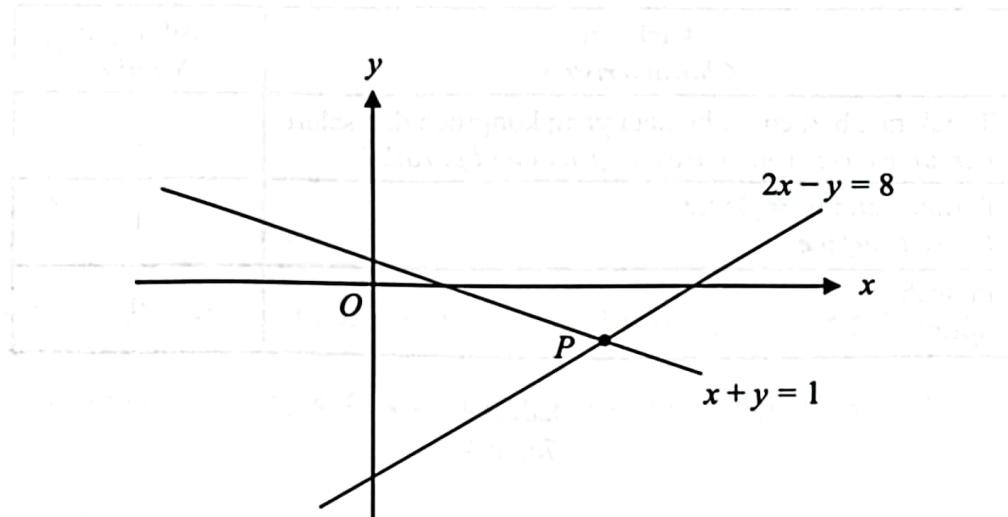
Hitung nilai  $x + y$ .

Calculate the value of  $x + y$ .

- A  $200^\circ$
- B  $240^\circ$
- C  $270^\circ$
- D  $300^\circ$

- 34 Rajah 17 menunjukkan dua garis lurus yang bersilang pada titik  $P$ . Diberi bahawa  $O$  ialah asalan.

*Diagram 17 shows two straight lines intersecting at point P. Given that O is the origin.*



Rajah 17  
Diagram 17

Tentukan koordinat titik  $P$ .

*Determine the coordinate of point P.*

- A  $(-2, 3)$
- B  $(1, -2)$
- C  $(3, -2)$
- D  $(3, -1)$

- 35 Jadual 4 menunjukkan maklumat bagi bentuk geometri tiga dimensi  $Y$ .  
*Table 4 shows information of three-dimensional geometric shape  $Y$ .*

Ciri-ciri <i>Characteristics</i>	Bilangan <i>Number</i>
Tapak rata berbentuk bulatan yang kongruen dan selari <i>Circular bases which are congruent and parallel</i>	2
Permukaan melengkung <i>Curved surface</i>	1
Puncak <i>Apex</i>	0

Jadual 4  
*Table 4*

Diberi luas tapak dan tinggi bentuk geometri  $Y$  masing-masing ialah  $616 \text{ cm}^2$  dan  $7 \text{ cm}$ .

Menggunakan  $\pi = \frac{22}{7}$ , hitung isi padu, dalam  $\text{cm}^3$ , bentuk geometri  $Y$ .

*Given that base area and height of the geometric shape  $Y$  are  $616 \text{ cm}^2$  and  $7 \text{ cm}$  respectively.*

*Using  $\pi = \frac{22}{7}$ , calculate the volume, in  $\text{cm}^3$ , of geometric shape  $Y$ .*

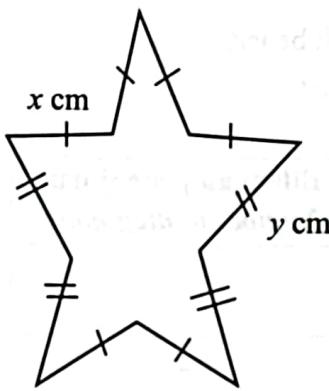
- A 1 239
- B 2 156
- C 4 312
- D 8 624

- 36 Cari pintasan-y bagi persamaan  $QR$  yang melalui titik  $Q(4, 8)$  dan mempunyai kecerunan 2.  
*Find the y-intercept of equation  $QR$  which passes through point  $Q(4, 8)$  and has the gradient of 2.*

- A 0
- B 2
- C 4
- D 8

- 37 Rajah 18 menunjukkan sebuah dekagon. Diberi bahawa perimeter poligon tersebut adalah 72 cm.

*Diagram 18 shows a decagon. Given that the perimeter of that polygon is 72 cm.*



Rajah 18  
*Diagram 18*

Antara persamaan linear berikut, yang manakah menunjukkan perkaitan antara  $x$  dan  $y$ ?  
*Which of the following linear equation, showing the relation between  $x$  and  $y$ ?*

- A  $6x + 4y = 72$
- B  $2x + 3y = 72$
- C  $4x + 6y = 72$
- D  $3x + 2y = 72$

- 38** Susunkan nisbah di Rajah 19 mengikut susunan menaik:  
*Arrange the ratios in Diagram 19 in ascending order:*

4:5	2:3	5:6	4:7
-----	-----	-----	-----

**Rajah 19**  
*Diagram 19*

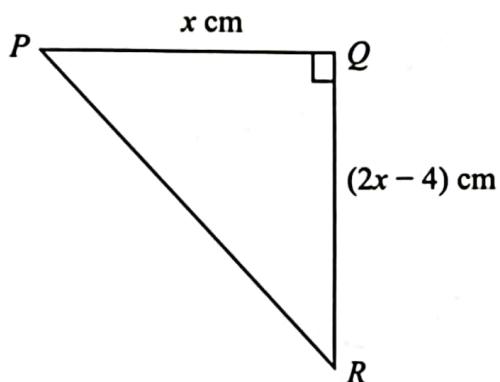
- A**    2:3 , 4:7 , 4:5 , 5:6
- B**    2:3 , 4:5 , 4:7 , 5:6
- C**    4:7 , 5:6 , 2:3 , 4:5
- D**    4:7 , 2:3 , 4:5 , 5:6

- 39** Antara berikut yang manakah benar?

*Which of the following is true?*

	<b>Poligon</b> <i>Polygon</i>	<b>Bilangan pepenjuru</b> <i>Number of diagonals</i>
<b>A</b>	Sisi empat <i>Quadrilateral</i>	3
<b>B</b>	Pentagon <i>Pentagon</i>	7
<b>C</b>	Heksagon <i>Hexagon</i>	10
<b>D</b>	Heptagon <i>Heptagon</i>	14

- 40 Rajah 20 menunjukkan sebuah segi tiga bersudut tegak  $PQR$ .  
*Diagram 20 shows a right-angled triangle  $PQR$ .*



Rajah 20  
*Diagram 20*

Diberi luas segi tiga  $PQR$  ialah  $24 \text{ cm}^2$ .

Hitung perimeter, dalam cm, segi tiga  $PQR$ .

*Given the area of triangle  $PQR$  is  $24 \text{ cm}^2$ .*

*Calculate the perimeter, in cm, of the triangle  $PQR$ .*

- A** 22
- B** 23
- C** 24
- D** 25

**KERTAS PEPERIKSAAN TAMAT**  
***END OF QUESTION PAPER***