

MODUL PINTAS TINGKATAN LIMA

1 JAM 30 MINIT

1449/1

MATEMATIK

Kertas 1

ARAHAN :

1. Jangan Buka Kertas Peperiksaan Ini Sehingga Diberitahu.
2. Kertas peperiksaan ini adalah dalam dwibahasa.
3. Soalan dalam bahasa Melayu mendahului soalan yang sepadan dalam bahasa Inggeris.
4. Calon dikehendaki membaca maklumat di halaman belakang kertas peperiksaan ini.

NAMA :

TINGKATAN :

Selamat mengulangkaji dari telegram@soalanpercubaanspm

Kertas peperiksaan ini mengandungi 32 halaman bercetak.

[Lihat halaman sebelah

RUMUS MATEMATIK MATHEMATICAL FORMULAE

Rumus-rumus berikut boleh membantu anda 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

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

$$2 \quad a^m \div a^n = a^{m-n}$$

$$3 \quad (a^m)^n = a^{mn}$$

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

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

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

$$7 \quad \text{Faedah mudah / Simple interest,} \\ I = Prt$$

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

$$9 \quad \text{Jumlah bayaran balik / Total repayment, } A = P + Prt$$

$$10 \quad \text{Premium} = \frac{\text{Nilai muka polisi}}{\text{RMx}} \times (\text{Kadar premium per RMx})$$

$$\text{Premium} = \frac{\text{Face value of policy}}{\text{RMx}} \times (\text{Premium rate per RMx})$$

$$11 \quad \text{Jumlah insurans yang harus dibeli} = \left(\frac{\text{Peratusan ko-insurans}}{\text{Nilai boleh insurans harta}} \right) \times \left(\frac{\text{Peratusan ko-insurans}}{\text{Nilai boleh insurans harta}} \right)$$

$$\text{Amount of required insurance} = \left(\frac{\text{Percentage of co-insurance}}{\text{Insurable value of property}} \right) \times \left(\frac{\text{Percentage of co-insurance}}{\text{Insurable value of property}} \right)$$

PERKAITAN DAN ALGEBRA RELATIONSHIP AND ALGEBRA

$$1 \quad \text{Jarak / Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$2 \quad \text{Titik tengah / Midpoint,} \\ (x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

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

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

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

$$5 \quad A^{-1} = \frac{1}{ad - bc} \begin{pmatrix} d & -b \\ -c & a \end{pmatrix}$$

$$6 \quad m = - \frac{\text{pintasan-y}}{\text{pintasan-x}}$$

$$m = - \frac{\text{y-intercept}}{\text{x-intercept}}$$

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 $= \pi r^2$
Area of circle $= \pi r^2$
- 5
$$\frac{\text{Panjang lengkok}}{2\pi r} = \frac{\theta}{360^\circ}$$

$$\frac{\text{Arc length}}{2\pi r} = \frac{\theta}{360^\circ}$$
- 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-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 $= \frac{1}{2} \times \text{sum of two parallel sides} \times \text{height}$
- 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 Isi padu prisma $=$ luas keratan rentas $\times$ tinggi
Volume of prism $= \text{area of cross section} \times \text{height}$
- 13 Isi padu silinder $= \pi r^2 h$
Volume of cylinder $= \pi r^2 h$

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

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

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

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

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

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

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

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

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

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

STATISTIK DAN KEBARANGKALIAN STATISTICS AND PROBABILITY

1 Min / Mean, $\bar{x} = \frac{\sum x}{N}$

2 Min / Mean, $\bar{x} = \frac{\sum fx}{\sum f}$

3 Varians / Variance, $\sigma^2 = \frac{\sum (x - \bar{x})^2}{N} = \frac{\sum x^2}{N} - \bar{x}^2$

4 Varians / Variance, $\sigma^2 = \frac{\sum f(x - \bar{x})^2}{\sum f} = \frac{\sum fx^2}{\sum f} - \bar{x}^2$

5 Sisihan piawai / Standard deviation, $\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{N}} = \sqrt{\frac{\sum x^2}{N} - \bar{x}^2}$

6 Sisihan piawai / Standard deviation, $\sigma = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}} = \sqrt{\frac{\sum fx^2}{\sum f} - \bar{x}^2}$

7 $P(A) = \frac{n(A)}{n(S)}$

8 $P(A') = 1 - P(A)$

Jawab semua soalan.

Answer all questions.

- 1 Suatu nombor, m apabila dibundarkan betul kepada dua angka bererti menjadi 0.90.

Antara berikut, yang manakah nilai m yang mungkin?

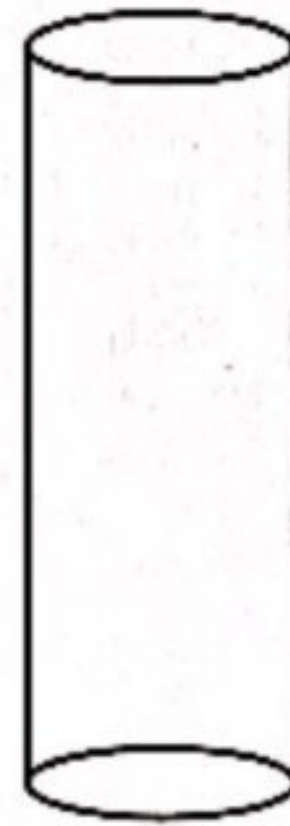
A number, m is rounded off correct to two significant figures to be 0.90.

Which of the following is the possible value of m ?

- A 0.8971
- B 0.8917
- C 0.9051
- D 0.9081

- 2 Rajah 1 menunjukkan sebuah bekas berbentuk silinder mempunyai ketinggian 24 cm dan diameter tapaknya 6 cm.

Diagram 1 shows a cylindrical container has a height of 24 cm and the base diameter of 6 cm.



Rajah 1
Diagram 1

Hitung isi padu air, dalam cm^3 , yang boleh dimuatkan ke dalam bekas tersebut. Nyatakan jawapan dalam bentuk piawai betul kepada tiga angka bererti.

(Gunakan $\pi = 3.142$)

Calculate the volume of water, in cm^3 , that can be put into the container. State the answers in standard form correct to three significant figures.

(Use $\pi = 3.142$)

- A 6.79×10^2
- B 6.79×10^{-2}
- C 6.78×10^2
- D 6.78×10^{-2}

- 3 Kilang Sardin Jaya mengeluarkan 1.54×10^5 tin ikan sardin seminggu. Kilang itu beroperasi 7 hari seminggu dan 24 jam sehari.

Hitung keuntungan purata per jam jika untung bersih setin sardin ialah RM1.47. Nyatakan jawapan dalam RM terdekat.

Kilang Sardin Jaya produces 1.54×10^5 tins sardines a week. The factory operates 7 days a week and 24 hours a day.

Calculate the average profit per hour if the net profit of one tin of sardines is RM1.47. State the answer to the nearest RM.

- A RM1 848.00
- B RM1 487.00
- C RM1 437.00
- D RM1 348.00

- 4 Nyatakan nilai digit 3 dalam nombor 20351_6 dalam asas sepuluh.

State the value of the digit 3 in the number 20351_6 in base ten.

- A 18
- B 36
- C 108
- D 300

- 5 Diberi bahawa $2220_3 < m_{10} < 144_7$.

Senaraikan semua integer bagi m .

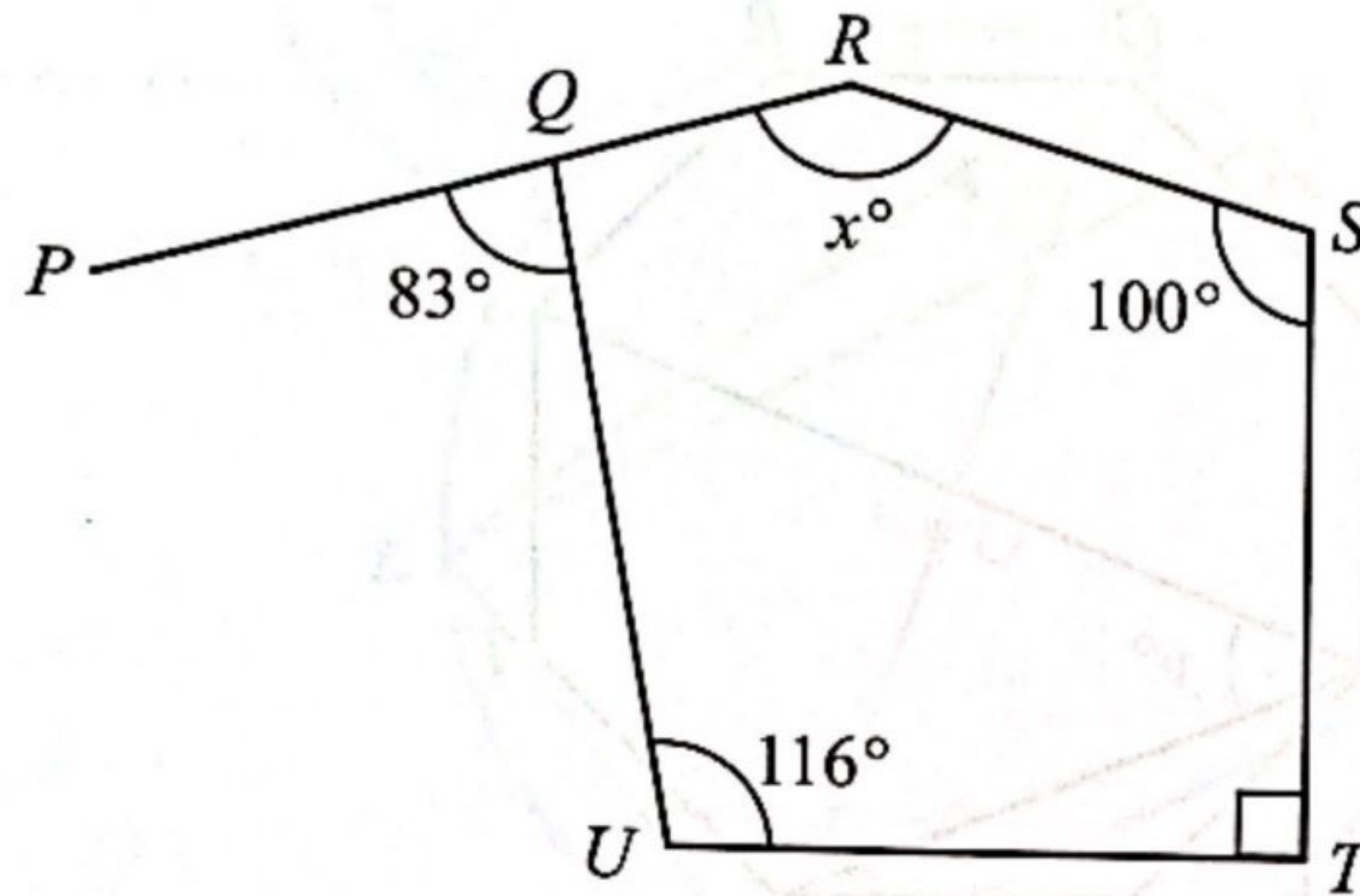
Given that $2220_3 < m_{10} < 144_7$.

List down all the integers of m .

- A 79, 80
- B 80, 81
- C 81, 82
- D 83, 84



- 6 Rajah 2 menunjukkan sebuah pentagon $QRSTU$ dan PQR adalah garis lurus.
Diagram 2 shows a pentagon $QRSTU$ and PQR is a straight line.

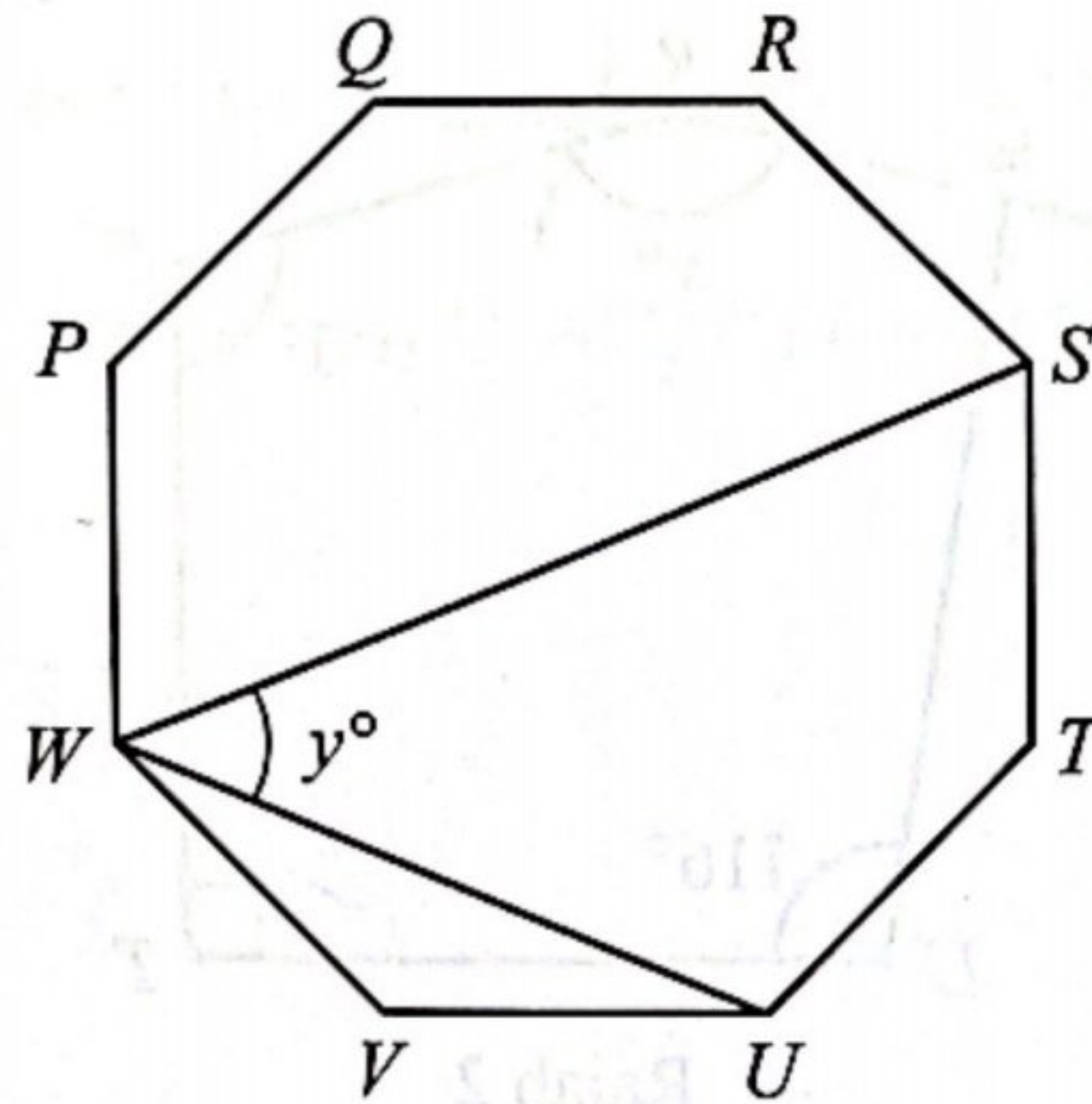


Rajah 2
Diagram 2

Cari nilai bagi x .
Find the value of x .

- A 97
- B 137
- C 144
- D 164

- 7 Rajah 3 menunjukkan oktagon sekata $PQRSTUW$ yang tidak dilukis mengikut skala sebenar.
Diagram 3 shows a regular octagon $PQRSTUW$ which is not drawn to actual scale.

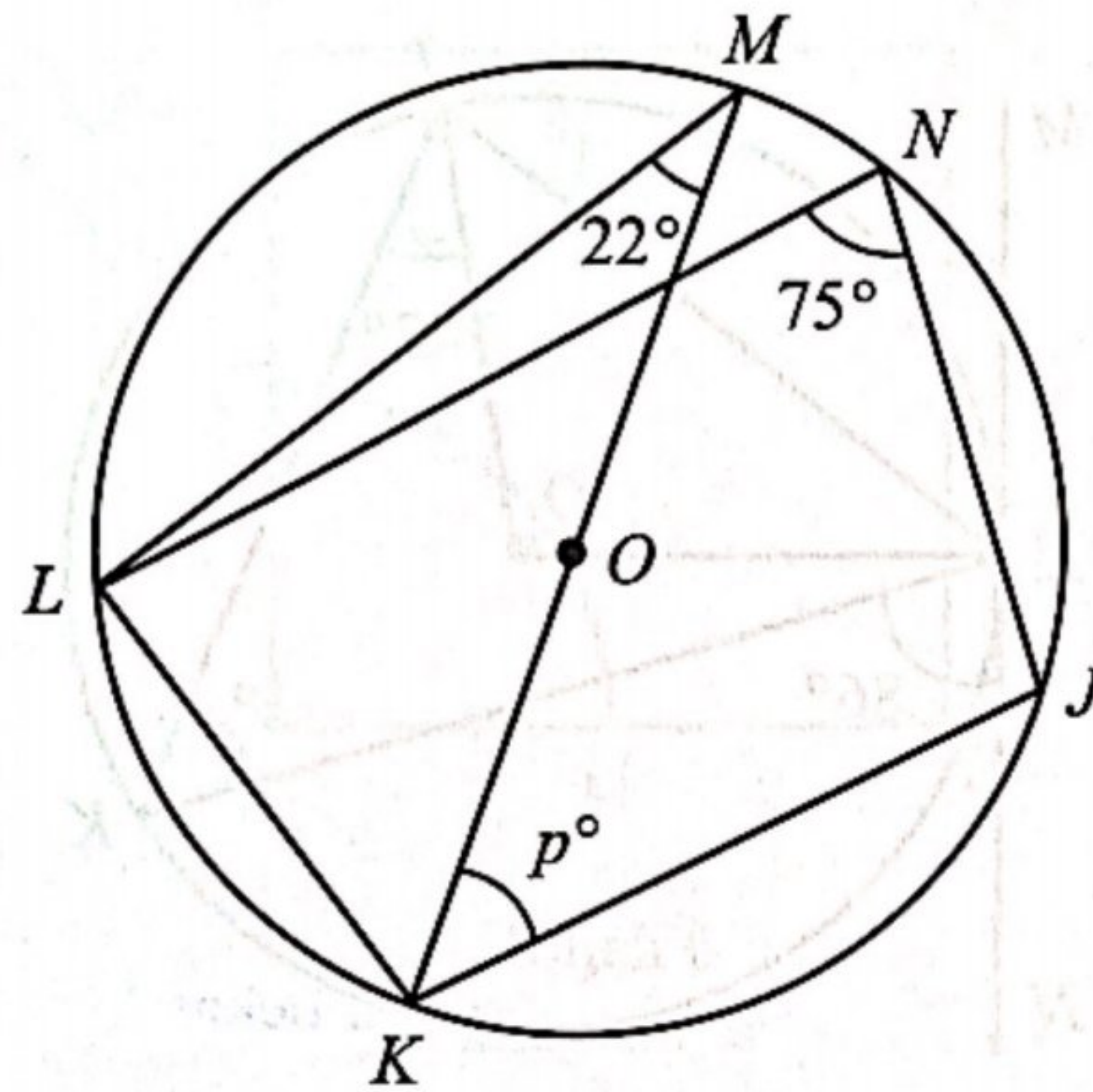


Rajah 3
Diagram 3

Cari nilai bagi y .
Find the value of y .

- A 22.5
- B 45.0
- C 52.0
- D 67.5

- 8 Rajah 4 menunjukkan sebuah bulatan berpusat di O . KOM ialah diameter bulatan itu.
 Diagram 4 shows a circle with centre O . KOM is a diameter of the circle.



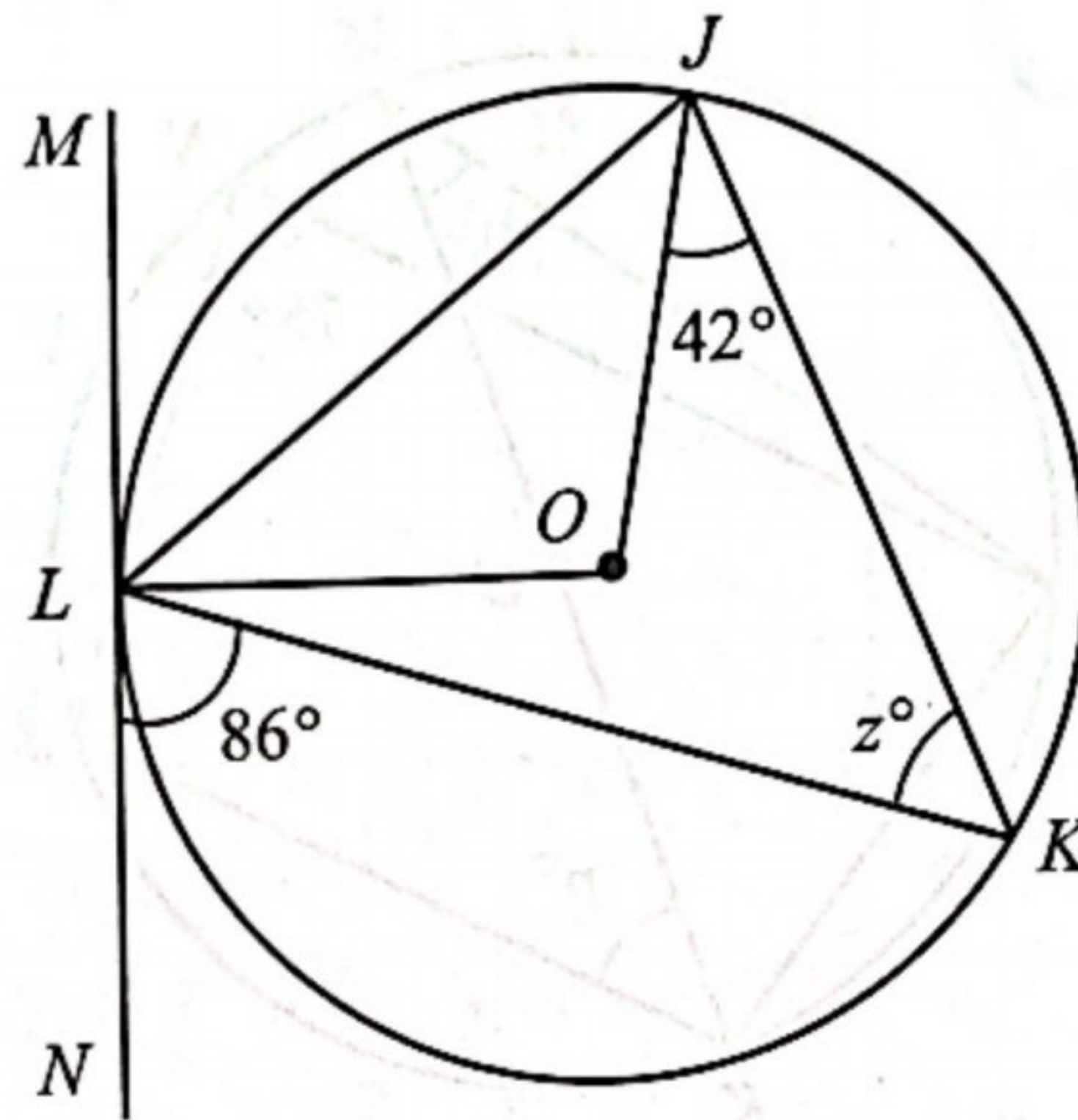
Rajah 4
 Diagram 4

Cari nilai bagi p .

Find the value of p .

- A 22
- B 37
- C 68
- D 75

- 9 Dalam Rajah 5, MLN ialah tangen kepada bulatan JKL di titik L .
In Diagram 5, MLN is a tangent to the circle JKL at point L .



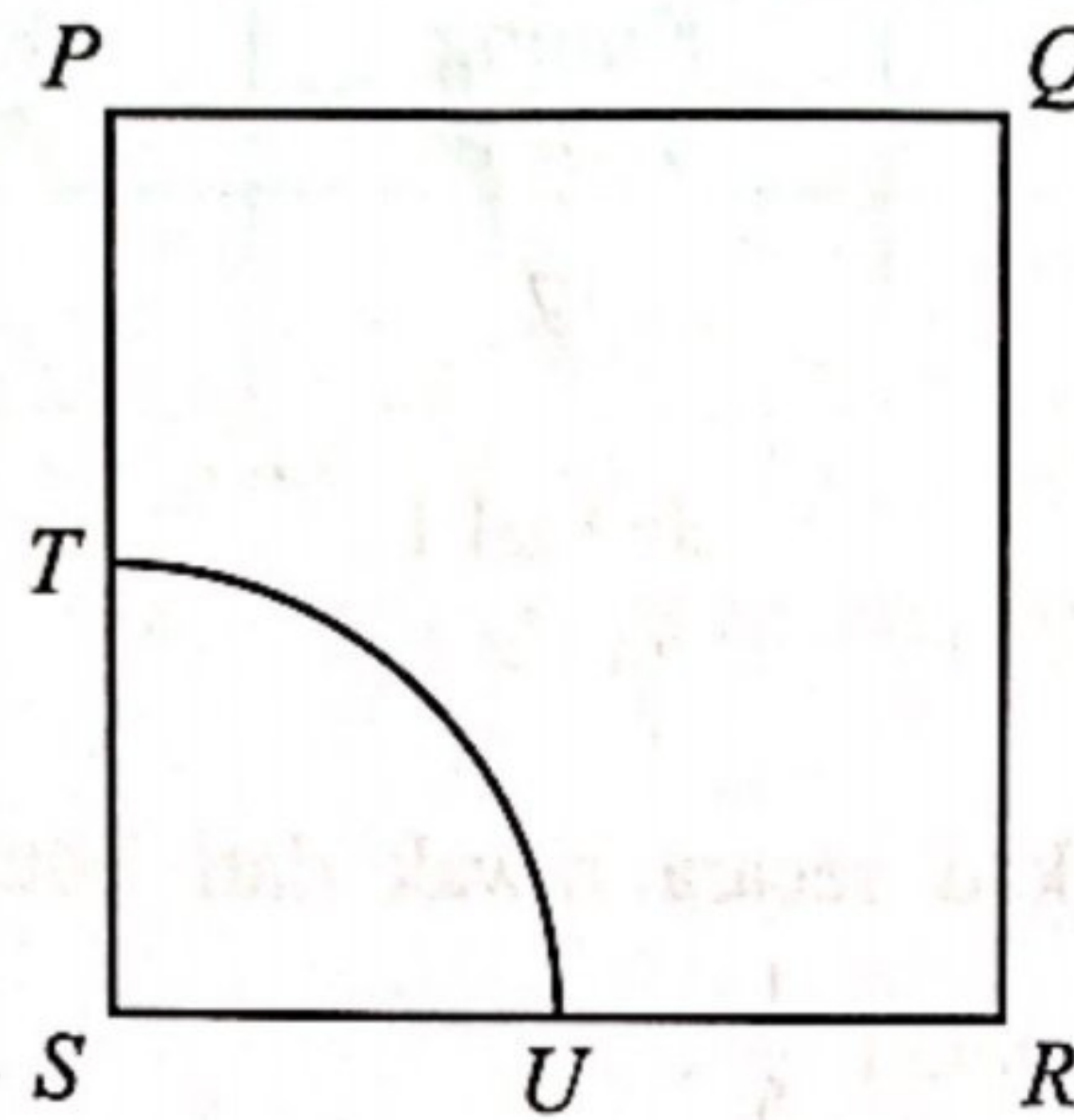
Rajah 5
Diagram 5

Cari nilai bagi z .

Find the value of z .

- A 42
- B 43
- C 44
- D 46

- 10 Rajah 6 menunjukkan segi empat sama $PQRS$ dan sukuan bulatan STU .
 Diagram 6 shows the square $PQRS$ and the quadrant of the circle STU .

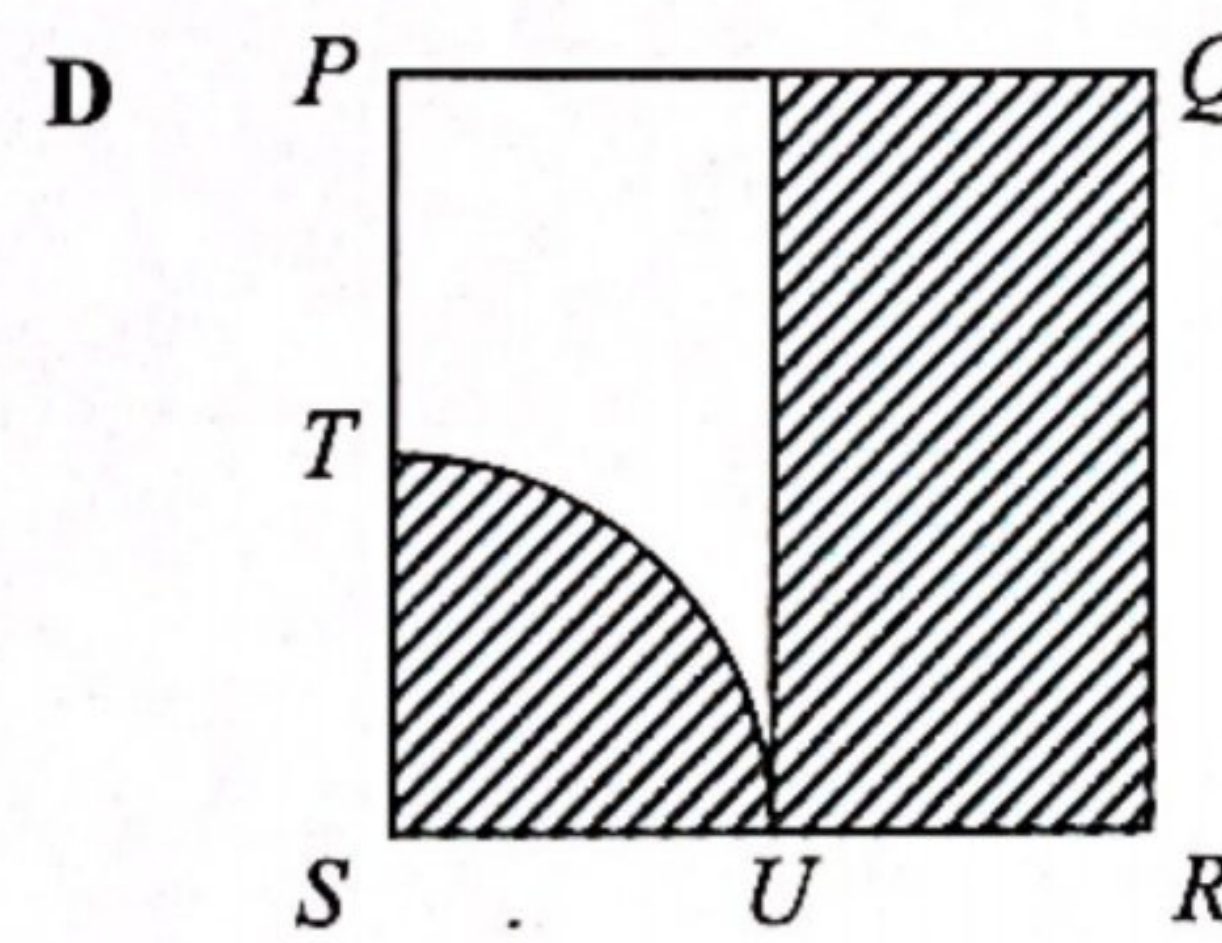
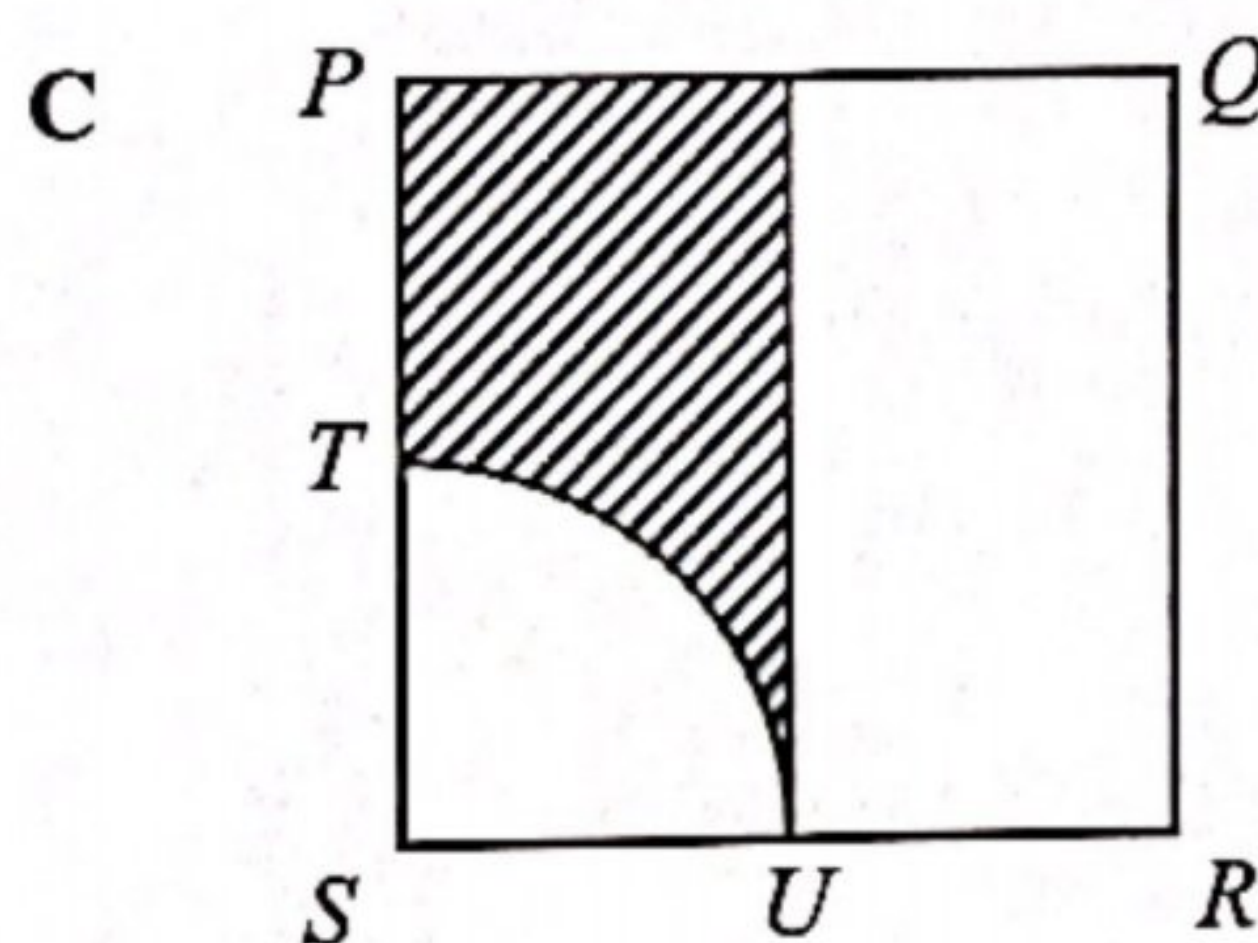
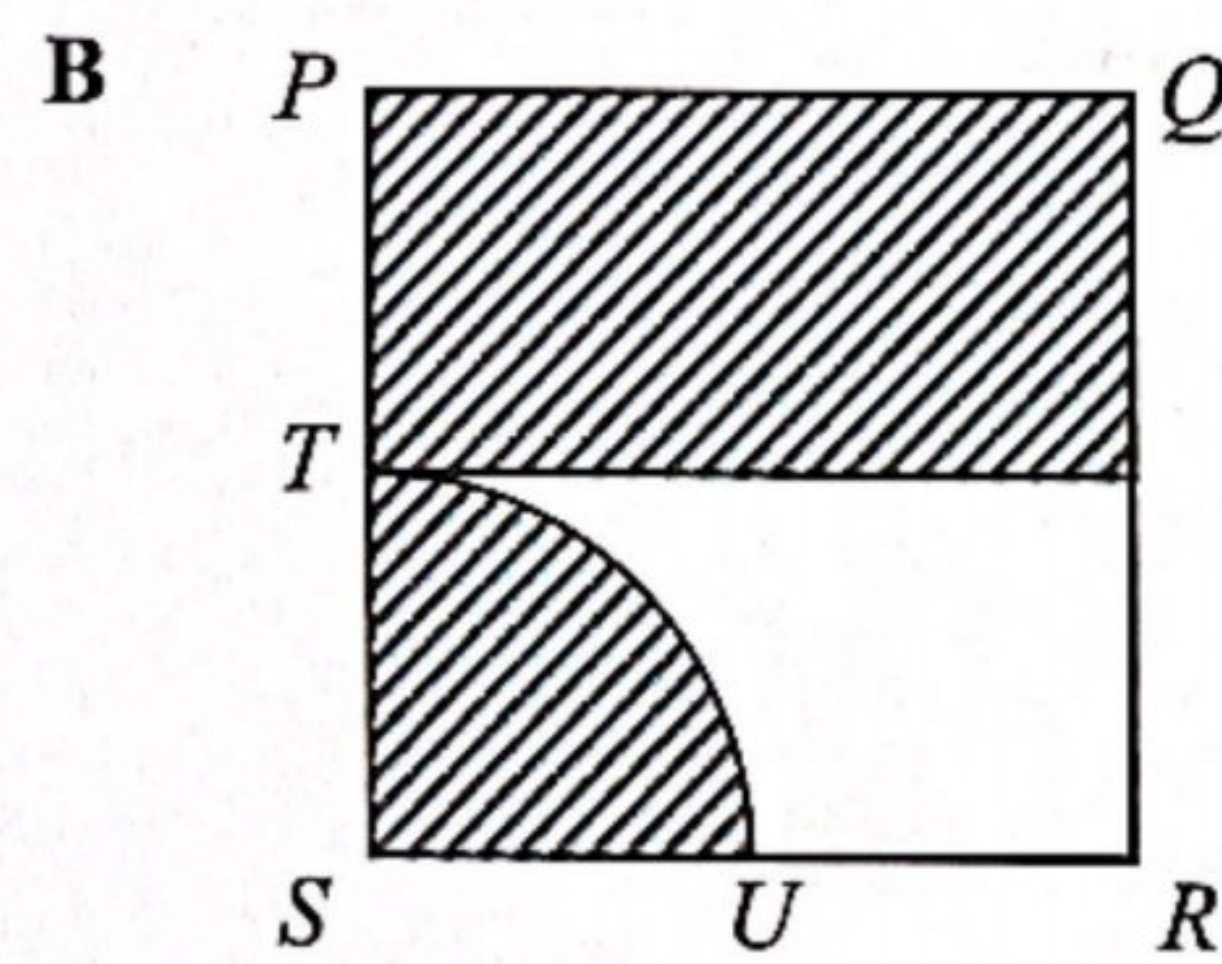
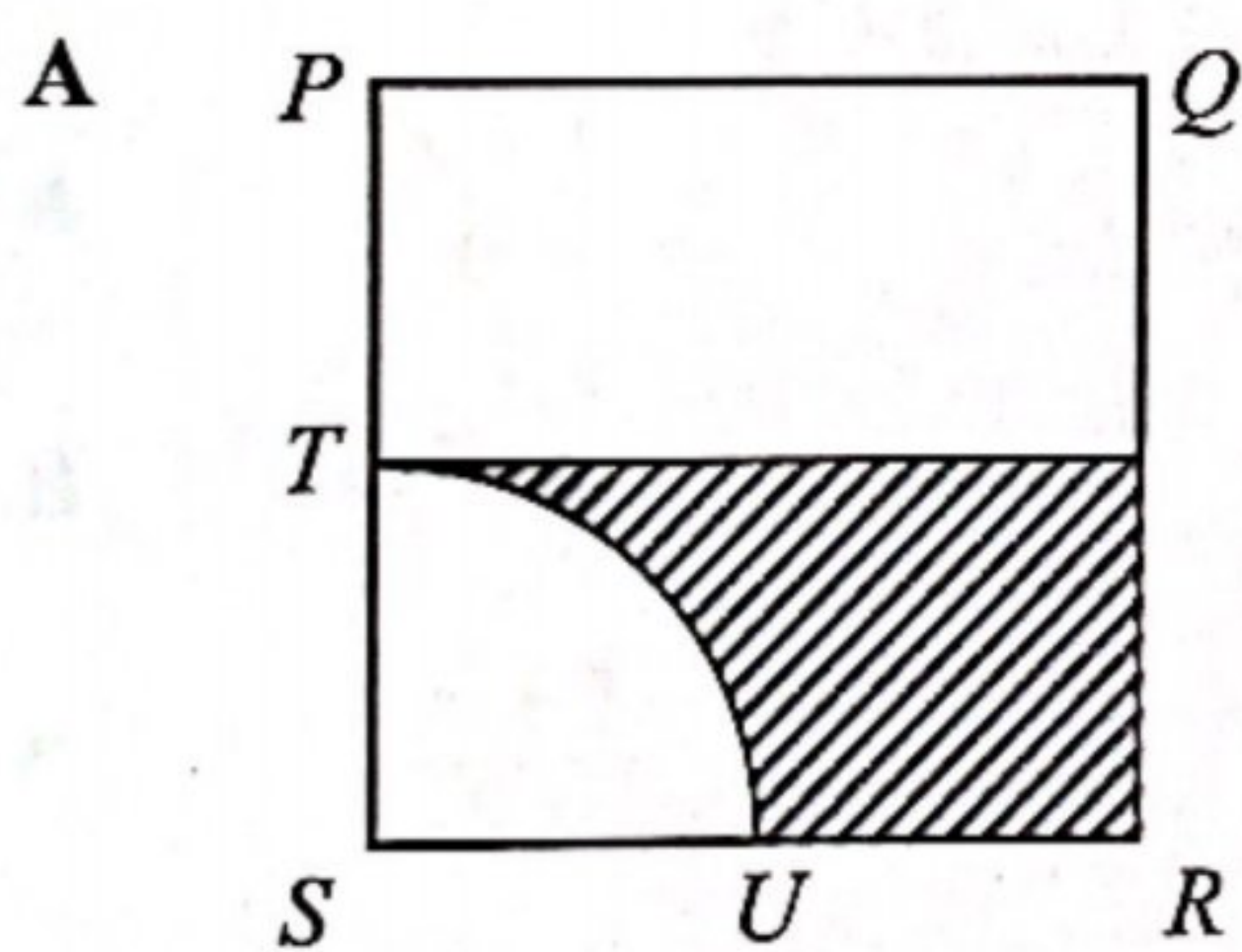


Rajah 6
 Diagram 6

Diberi bahawa $PQ = QR = 8$ cm. T dan U masing-masing adalah titik tengah bagi PS dan SR .
 Antara kawasan berlorek berikut, yang manakah mewakili lokus titik di dalam segi empat sama $PQRS$ yang kurang 4 cm dari titik S dan lebih 4 cm dari sisi SR ?

Given that $PQ = QR = 8$ cm. T and U are the midpoints for PS and SR respectively.

Which of the following shaded areas represents the locus of the points inside the square $PQRS$ that are less than 4 cm from point S and more than 4 cm from side SR ?



- 11 Jadual 1 menunjukkan bilangan kad yang terdapat di dalam sebuah kotak.
Table 1 shows the number of cards in a box.

Warna Colour	Biru Blue	Kuning Yellow	Merah Red	Hijau Green
Bilangan Number	16	17	x	12

Jadual 1
Table 1

Faris mengambil sekeping kad secara rawak dari kotak tersebut. Kebarangkalian beliau mendapat kad berwarna hijau ialah $\frac{1}{5}$.

Hitung kebarangkalian Faris memilih kad **bukan** berwarna biru.

Faris takes a piece of card randomly from the box. The probability of him getting a green card is $\frac{1}{5}$.

*Calculate the probability of Faris choosing the card that is **not** blue.*

- A $\frac{1}{4}$
B $\frac{4}{15}$
C $\frac{11}{15}$
D $\frac{4}{5}$

- 12 Encik Darrel dan Puan Sherry mempunyai 3 orang anak iaitu Lim, Welson dan Anne. Lim berusia m tahun, Wilson berusia n tahun manakala Anne berusia 7 tahun lebih muda berbanding Lim.

Antara ungkapan berikut, yang manakah mewakili jumlah umur bagi ketiga-tiga orang anak mereka?

Encik Darrel and Puan Sherry had 3 children, namely Lim, Welson and Anne. Lim is m years old, Wilson is n years old while Anne is 7 years younger than Lim.

Which of the following expressions represents the total ages of their three children?

- A $2m + n - 7$
- B $2m + n + 7$
- C $m + n + 7$
- D $m + n - 7$

- 13 Zafirah telah membuat sebiji kek coklat berbentuk segi empat sama di mana panjang sisi kek ialah $(6x + 3)$ cm. Dia telah memotong kek coklat tersebut kepada 6 bahagian panjang dan 3 bahagian lebar.

Hitung luas permukaan atas sepotong kek coklat tersebut.

Zafirah has made a square chocolate cake where the length of the side of the cake is $(6x + 3)$ cm. She has cut the chocolate cake to 6 parts long and 3 parts wide.

Calculate the top surface area of a piece of chocolate cake.

- A $\frac{2x + 1}{6}$
- B $4x^2 + 4x + 1$
- C $\frac{4x^2 + 1}{2}$
- D $\frac{4x^2 + 4x + 1}{2}$

- 14 Seorang penolong pengurus cawangan sebuah kedai kasut dibayar gaji 2 kali ganda berbanding gaji pekerja sambilan, RM x per jam. Masa bekerja untuk pekerja sambilan tersebut ialah separuh daripada masa bekerja penolong pengurus itu, y jam dalam tempoh sehari. Jika mereka bekerja selama 26 hari dalam sebulan, ungkapkan perbezaan gaji, RM z antara kedua-dua pekerja tersebut dalam sebutan x dan y .

An assistant branch manager of a shoe store is paid a salary 2 times that of a part-time worker, RM x per hour. The working time for the part-time worker is half of the assistant branch manager's working time, y hours in the day.

If they work for 26 days a month, express the difference in salary, RM z between the two workers in terms of x and y .

- A $z = 78xy$
- B $z = 52xy$
- C $z = 39xy$
- D $z = 26xy$

- 15 Diberi bahawa luas bagi bentuk R dan bentuk S ialah 36 cm^2 dan 16 cm^2 . Jika bentuk S ialah imej bagi bentuk R di bawah suatu pembesaran, tentukan faktor skala bagi pembesaran itu sekiranya kedudukan imej berada di sebelah yang bertentangan dengan objek.

Given that the area for the shape R and shape S are 36 cm^2 and 16 cm^2 .

If the shape S is the image for the shape R under an enlargement, determine the scale factor for the enlargement if the position of the image is on the opposite site of object.

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

- 16 Jadual 2 menunjukkan buah-buahan kegemaran sekumpulan murid di sebuah sekolah. Bilangan murid yang menggemari betik tidak ditunjukkan.

Table 2 shows the favourite fruits of a group of students in a school. The number of students who like papaya is not shown.

Buah-buahan <i>Fruit</i>	Bilangan murid <i>Number of students</i>
Durian <i>Durian</i>	58
Pisang <i>Banana</i>	30
Betik <i>Papaya</i>	
Rambutan <i>Rambutan</i>	48

Jadual 2

Table 2

Jika data ini diwakili oleh carta pai, sudut sektor yang mewakili murid yang menggemari durian ialah 116° .

Cari sudut sektor yang mewakili murid yang menggemari betik.

If the data is represented by a pie chart, the angle of sector representing the students who like durian is 116° .

Find the angle of the sector representing students who like papaya.

- A 60°
- B 88°
- C 96°
- D 116°

- 17 Jadual 3 ialah jadual kekerapan longgokan yang menunjukkan skor yang diperoleh dalam suatu pertandingan.

Table 3 is a cumulative frequency table which shows the scores obtained in a competition.

Skor Score	1	2	3	4	5	6
Kekerapan longgokan Cumulative frequency	2	9	20	32	38	40

Jadual 3
Table 3

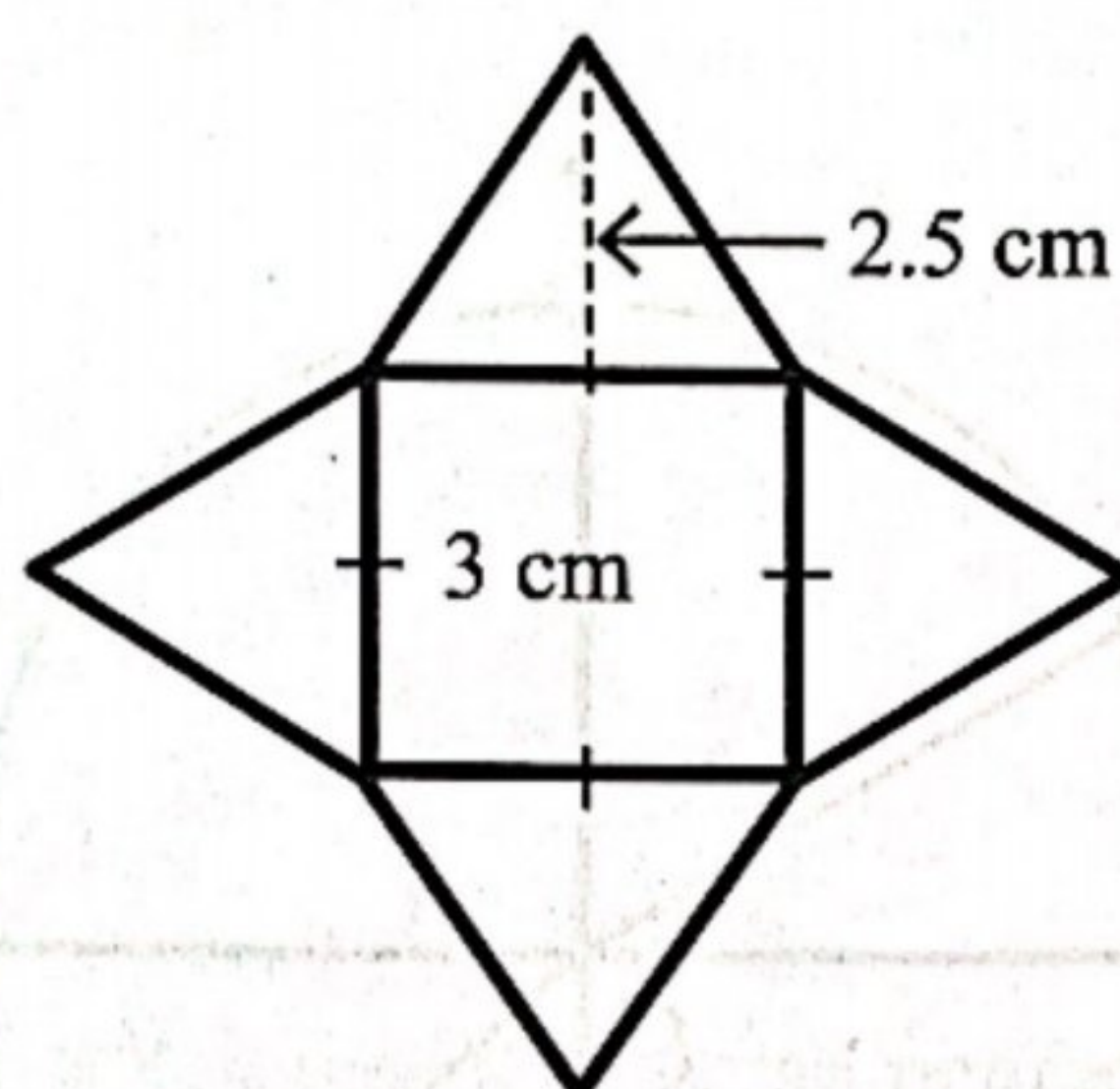
Cari hasil tambah mod dan median bagi data ini.

Find the sum of mode and median of the data.

- A 6.5
- B 7
- C 7.5
- D 8

- 18 Rajah 7 menunjukkan bentangan bagi sebuah piramid dengan tapak segi empat sama, yang dilukis mengikut skala 1 : 20.

Diagram 7 shows the net of a pyramid with a square base, drawn to a scale of 1 : 20.



Rajah 7
Diagram 7

Hitung isi padu, dalam cm^3 , bagi piramid yang sebenar.

Calculate the volume, in cm^3 , of the actual pyramid.

- A 48 000
- B 60 000
- C 72 000
- D 90 000

- 19 Chong dan Ravi mempunyai tinggi yang sama. Semasa perhimpunan, Chong berdiri 15 m dari tiang bendera manakala Ravi berdiri lebih dekat dari tiang bendera dan berada di hadapan Chong.

Jika sudut dongakan puncak tiang dari aras mata Chong dan Ravi masing-masing ialah 30° dan 35° , cari jarak dalam m, di antara Chong dan Ravi.

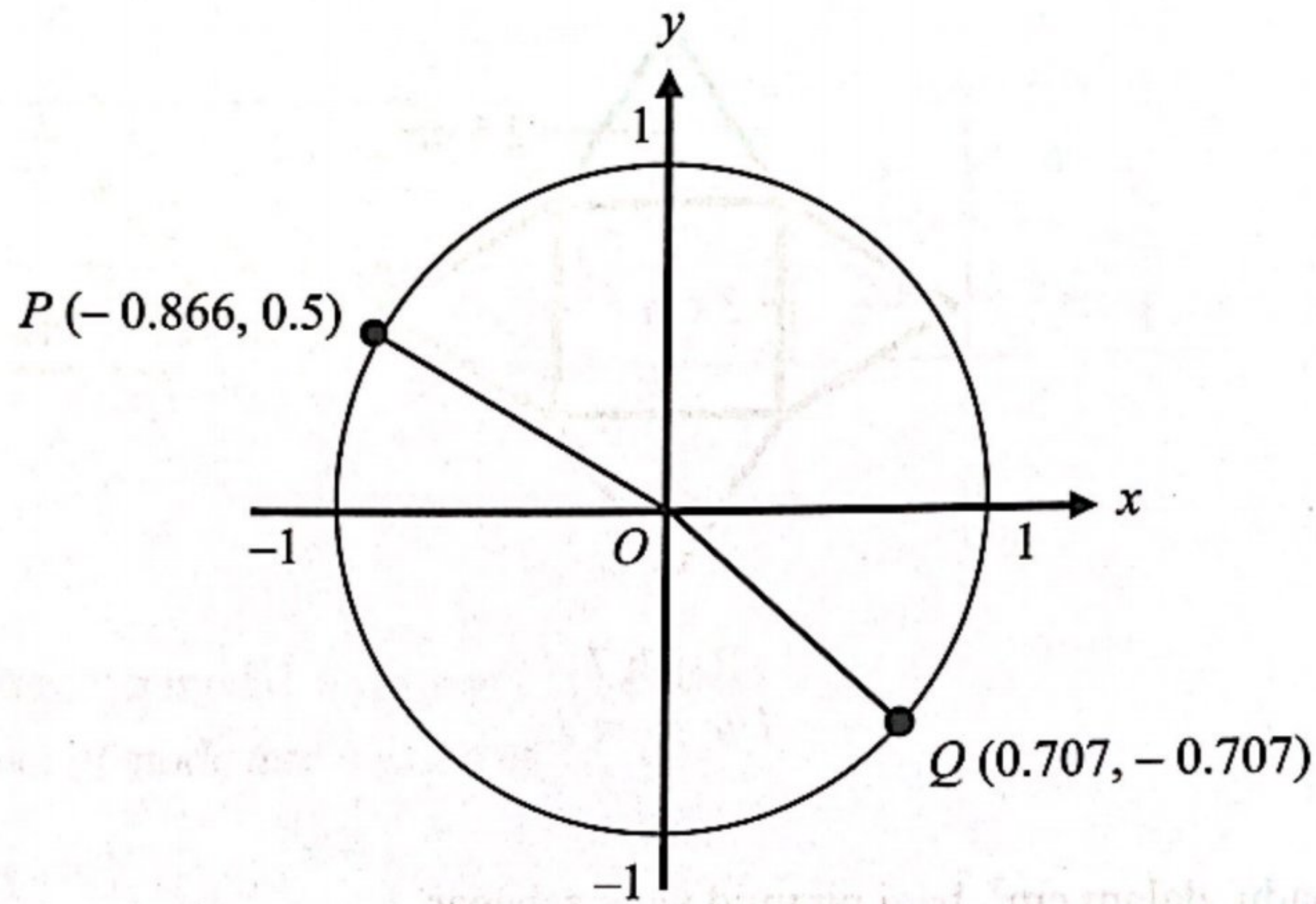
Chong and Ravi have the same height. During the assembly, Chong is standing 15 m from a flag pole while Ravi is standing nearer to the flag pole and in front of Chong.

If the angle of elevation of the top of the flag pole from Chong's and Ravi's eyes level are 30° and 35° respectively, find the distance, in m, between Chong and Ravi.

- A 0.86
- B 1.92
- C 2.63
- D 3.19

20 Rajah 8 menunjukkan sebuah bulatan unit.

Diagram 8 shows a unit circle.



Rajah 8
Diagram 8

Cari nilai sudut bagi sektor minor POQ .

Find the value of the angle of the minor sector POQ .

- A 150°
- B 165°
- C 180°
- D 195°

- 21 Diberi $\{(S, T), (S, U), (T, U), (U, V), (U, V), (U, W), (U, X), (X, X)\}$ adalah tepi bagi suatu graf. Tentukan bucu bagi graf tersebut.

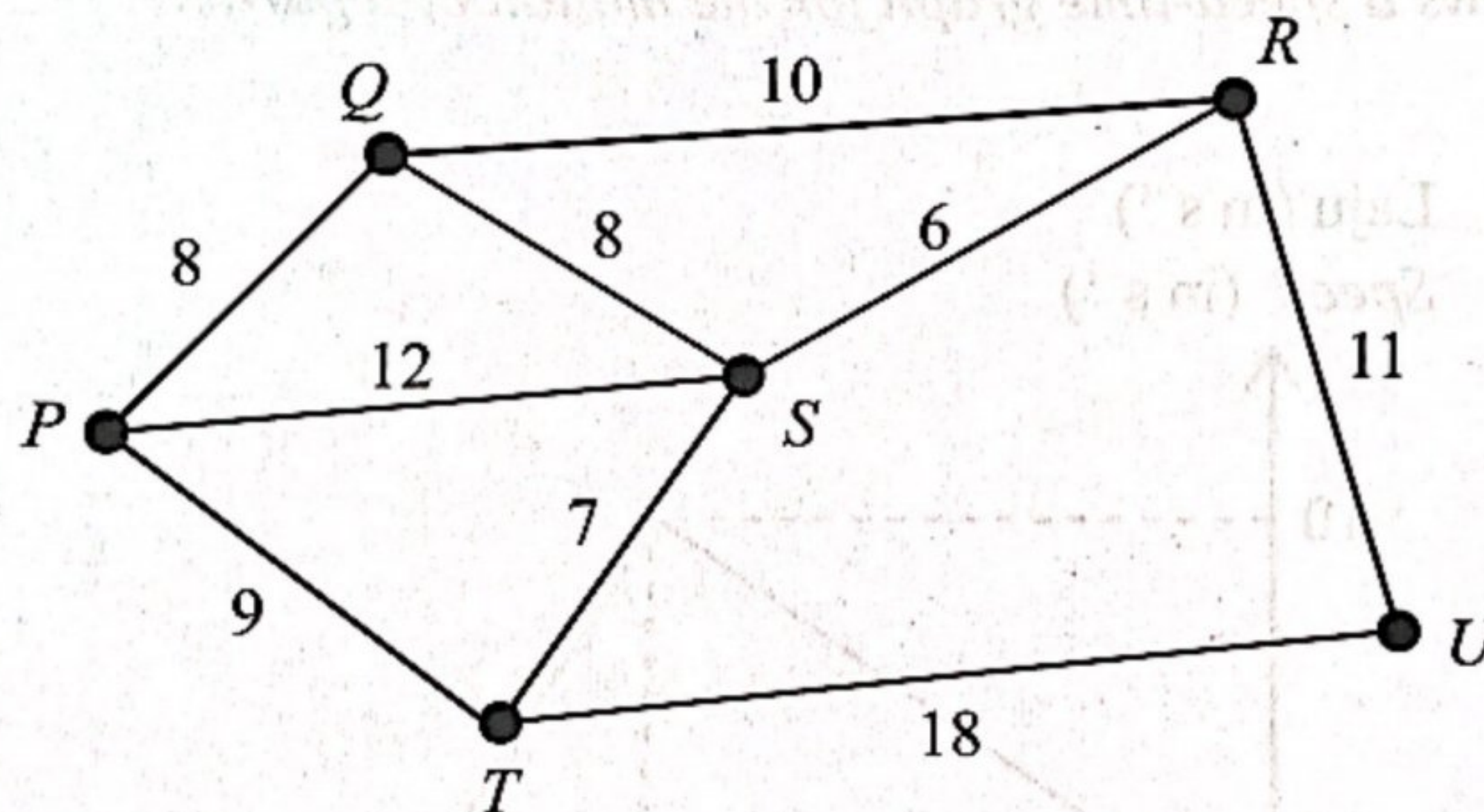
Given $\{(S, T), (S, U), (T, U), (U, V), (U, V), (U, W), (U, X), (X, X)\}$ is edges of a graph.

Determine the vertices of the graph.

- A $\{S, T, U, U, V, V, W, X, X\}$
 B $\{S, T, U, V, W, X, X\}$
 C $\{S, T, U, U, V, V, W, X\}$
 D $\{S, T, U, V, W, X\}$

- 22 Rajah 9 menunjukkan suatu graf tak terarah dengan pemberat.

Diagram 9 shows a undirected graph with weighted.



Rajah 9
Diagram 9

Reena ingin melukis satu pokok dengan nilai pemberat yang minimum bagi graf tak terarah tersebut.

Tentukan nilai minimum pemberat tersebut.

Reena wants to draw a tree with minimum weighted of the undirected graph.

Determine the value of minimum weighted.

- A 40
 B 44
 C 45
 D 55

- 23 Luas dan tinggi bagi sebuah trapezium adalah masing-masing ialah 56 cm^2 dan 7 cm . Dua sisi selari bagi trapezium tersebut ialah p dan q .

Diberi bahawa $p : q = 3 : 5$, hitung nilai q .

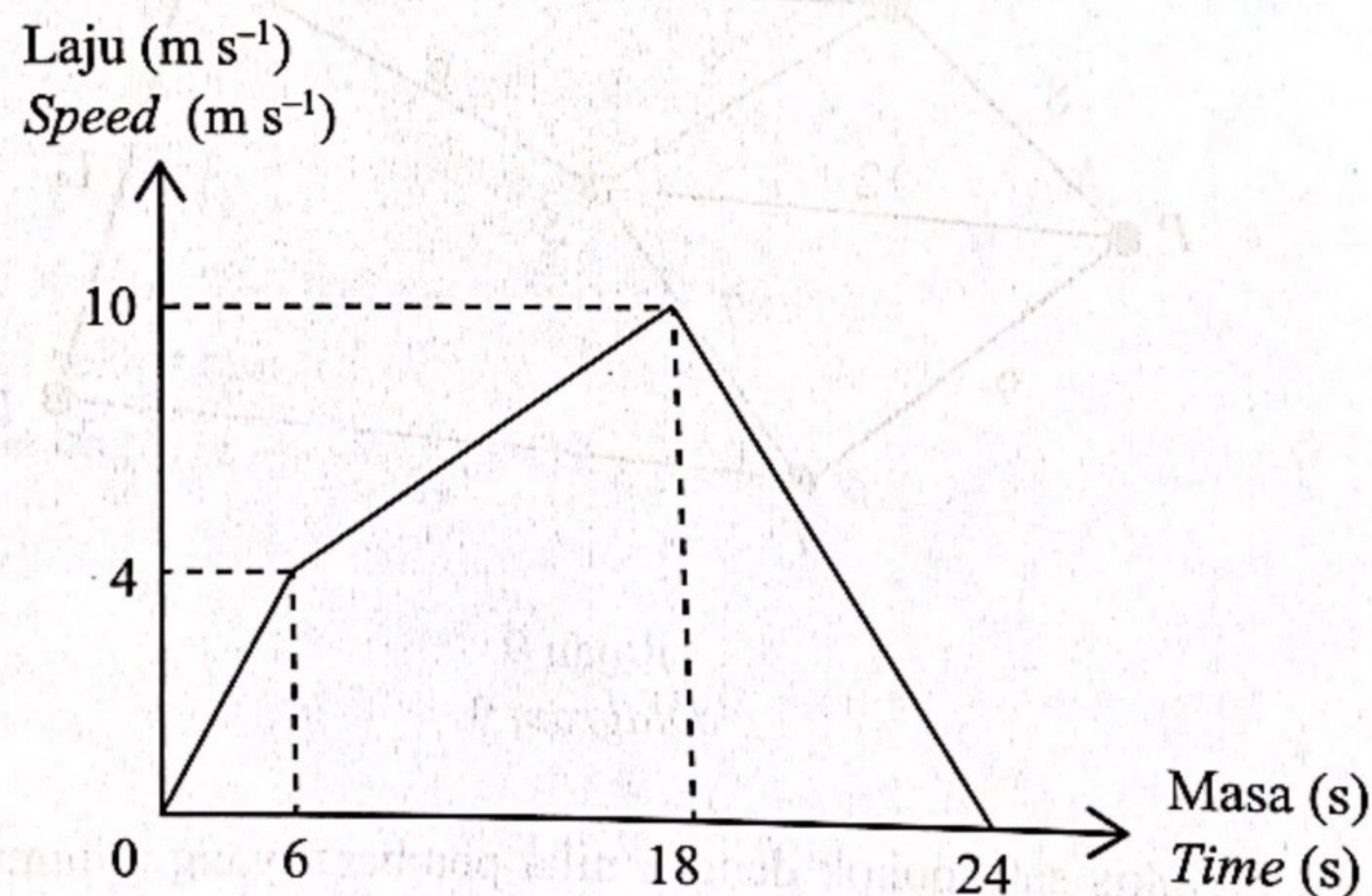
The area and height of a trapezium are 56 cm^2 and 7 cm respectively. Two parallel sides of the trapezium are p and q .

Given that $p : q = 3 : 5$, calculate the value of q .

- A 3
- B 5
- C 6
- D 10

- 24 Rajah 10 menunjukkan graf laju-masa bagi pergerakan suatu zarah.

Diagram 10 shows a speed-time graph for the motion of a particle.



Rajah 10
Diagram 10

Hitung nyahpecutan bagi 4 saat terakhir.

Calculate the deceleration for the last 4 seconds.

- A -1.67 m s^{-2}
- B -0.6 m s^{-2}
- C 0.6 m s^{-2}
- D 1.67 m s^{-2}

- 25 Selesaikan ketaksamaan linear serentak bagi $-2u - 1 > -9$ dan $9 - 3u \leq 14$ di mana u ialah satu integer.

Solve the simultaneous linear inequalities for $-2u - 1 > -9$ and $9 - 3u \leq 14$ where u is an integer.

- A $u = -1, 0, 1, 2, 3$
 B $u = -1, 0, 1, 2, 3, 4$
 C $u = -2, -1, 0, 1, 2, 3$
 D $u = -2, -1, 0, 1, 2, 3, 4$

- 26 Permudahkan:
 Simplify:

$$\frac{4y \times y^4 \times y^a}{\sqrt{y}}$$

- A $2y^{\frac{5}{2}+a}$
 B $2y^{\frac{11}{2}+a}$
 C $8y^{\frac{5}{2}+a}$
 D $8y^{\frac{11}{2}+a}$

- 27 Diberi $(\sqrt{x^b})^w = x^w(x^b)$, ungkapkan w dalam sebutan b .

Given $(\sqrt{x^b})^w = x^w(x^b)$, express w in terms of b .

- A $\frac{b}{b+2}$
 B $\frac{b}{b-2}$
 C $\frac{2+b}{b-2}$
 D $\frac{2b}{b-2}$

- 28 Diberi $\xi = \{x : x \text{ ialah integer, } 30 \leq x \leq 40\}$, set $P = \{x : x \text{ ialah gandaan } 5\}$, set $Q = \{x : x \text{ ialah nombor hasil tambah dua digit adalah nombor genap}\}$ dan set $R = \{30, 32, 35, 38, 39, 40\}$.

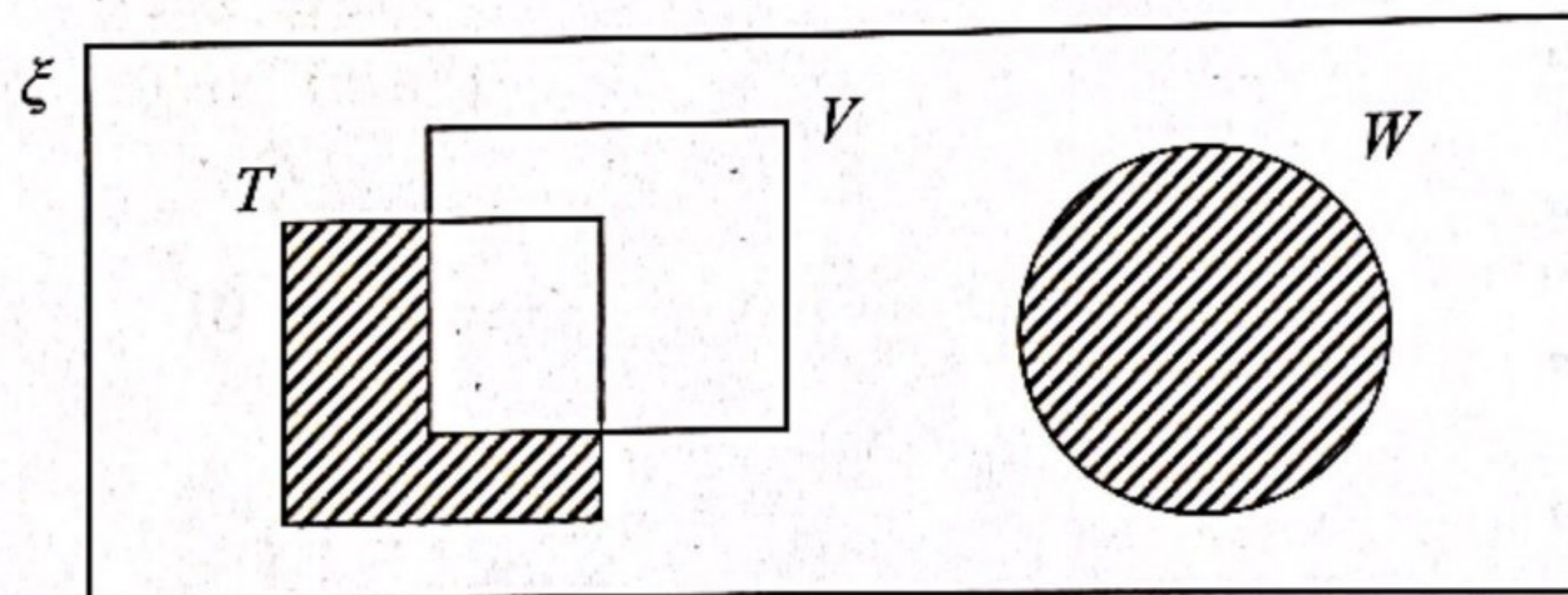
Cari $n(P \cup Q)' \cap R$.

Given $\xi = \{x : x \text{ is an integer, } 30 \leq x \leq 40\}$, set $P = \{x : x \text{ is a multiple of } 5\}$, set $Q = \{x : x \text{ is a number where the sum of its two digit is even number}\}$ and set $R = \{30, 32, 35, 38, 39, 40\}$.

Find $n(P \cup Q)' \cap R$.

- A 1
- B 2
- C 4
- D 6

- 29 Rajah 11 ialah gambar rajah Venn yang menunjukkan set semesta ξ , set T , set V dan set W .
Diagram 11 is a Venn diagram that shows the universal set ξ , set T , set V and set W .



Rajah 11
Diagram 11

Nyatakan set yang diwakili oleh kawasan berlorek dalam gambar rajah Venn itu.

State the set represented by the shaded region in the Venn diagram.

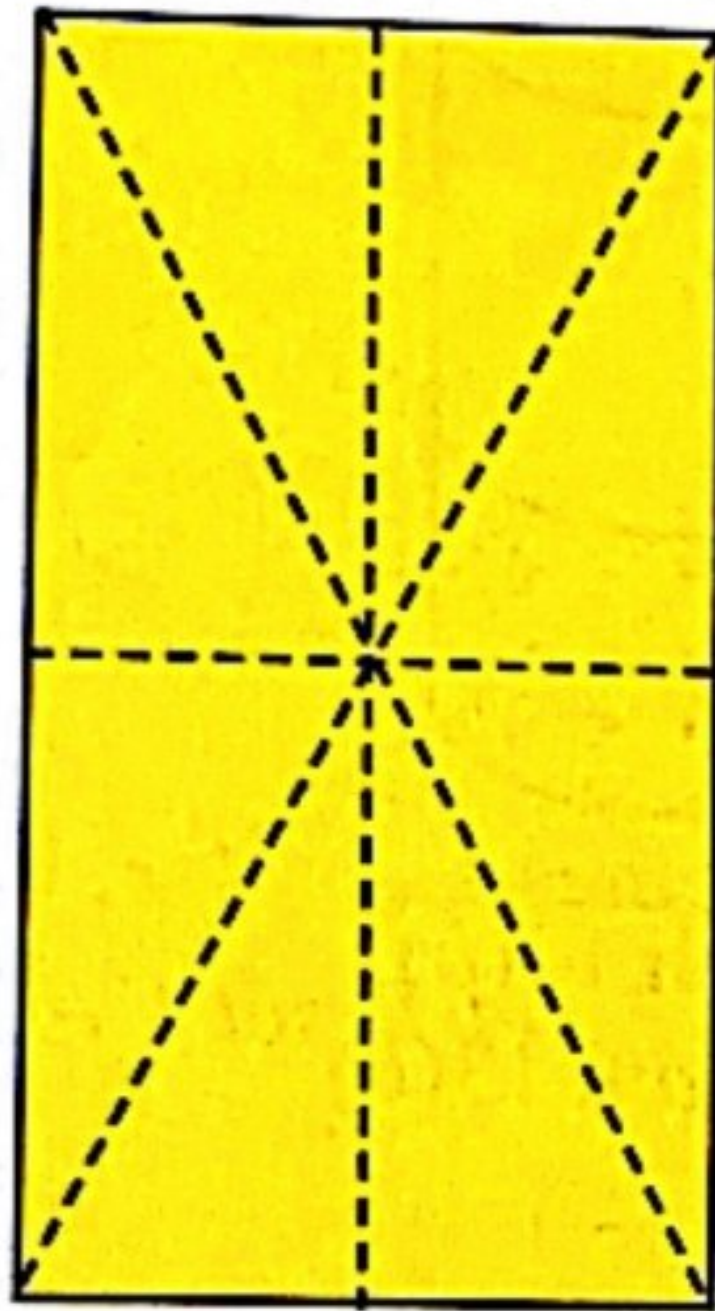
- A $T' \cup W$
- B $T \cap V \cup W$
- C $T \cap V' \cup W$
- D $T' \cap V' \cup W$

- 30 Melisa mempunyai sekeping kad kuning yang berukuran $6 \text{ cm} \times 8 \text{ cm}$. Dia menggunting lapan segi tiga daripada kad tersebut seperti yang ditunjukkan dalam Rajah 12(a).

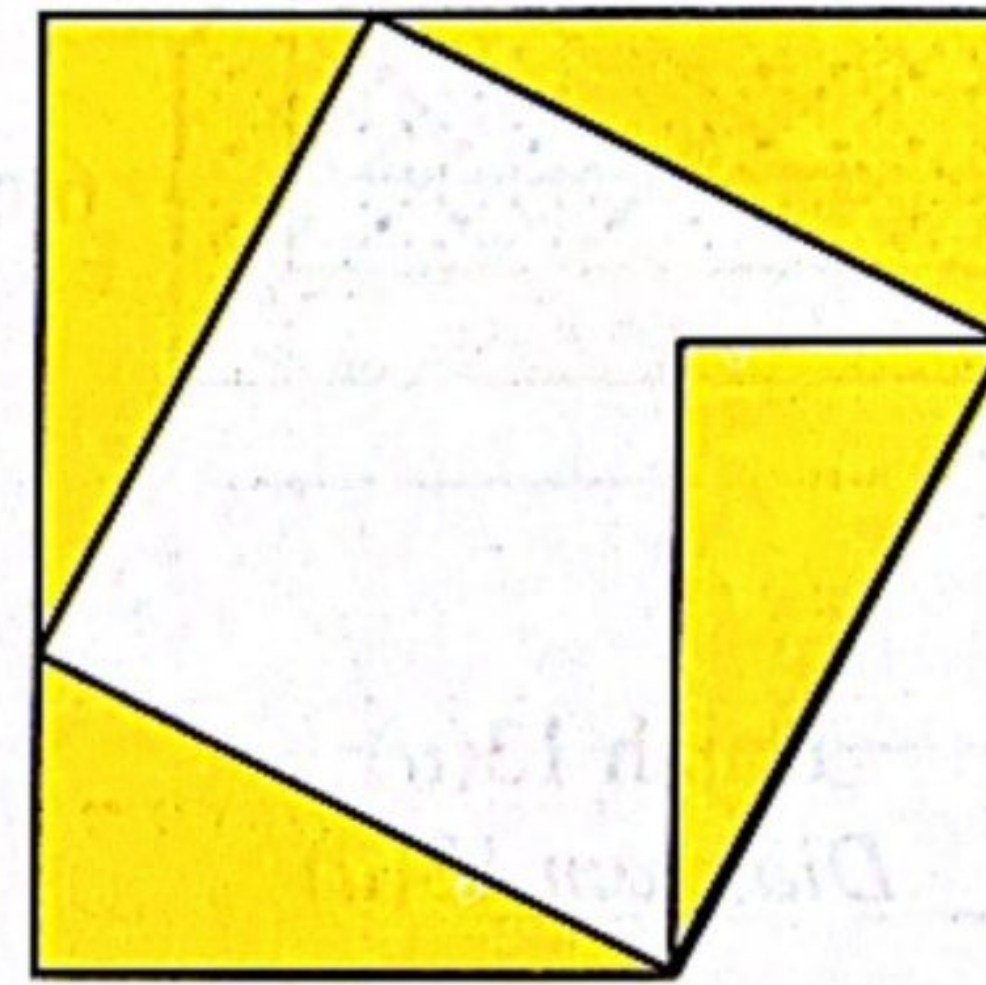
Melisa menyusun beberapa segi tiga yang diperoleh untuk membentuk corak seperti dalam Rajah 12(b).

Melisa has a piece of yellow card with the measurement of $6 \text{ cm} \times 8 \text{ cm}$. She cuts eight triangles from the card as shown in Diagram 12(a).

Melisa arranged a few triangles obtained to form a pattern as shown in Diagram 12(b).



Rajah 12(a)
Diagram 12(a)



Rajah 12(b)
Diagram 12(b)

Hitung perimeter corak tersebut.

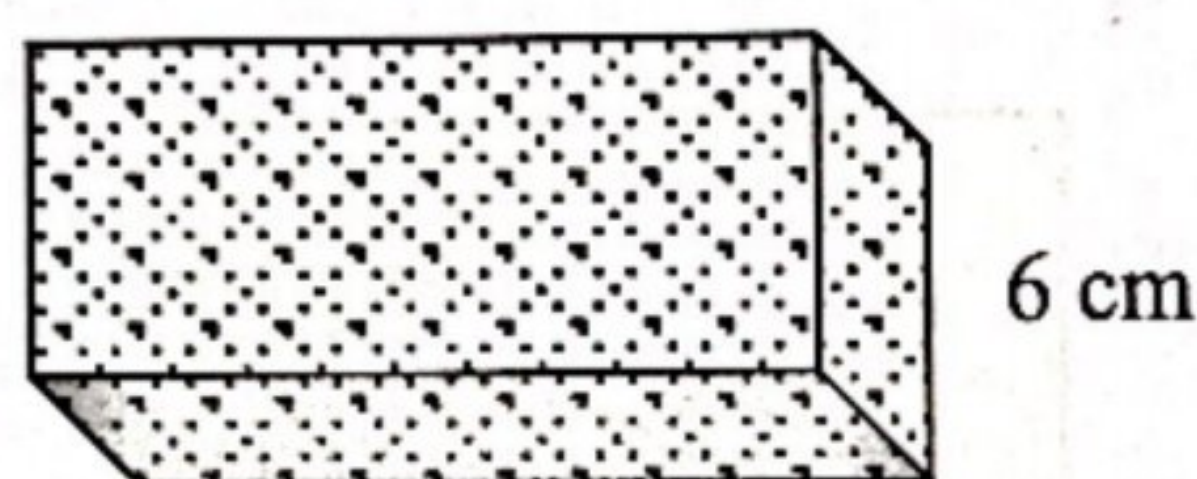
Calculate the perimeter of the pattern.

- A 21
- B 26
- C 33
- D 48

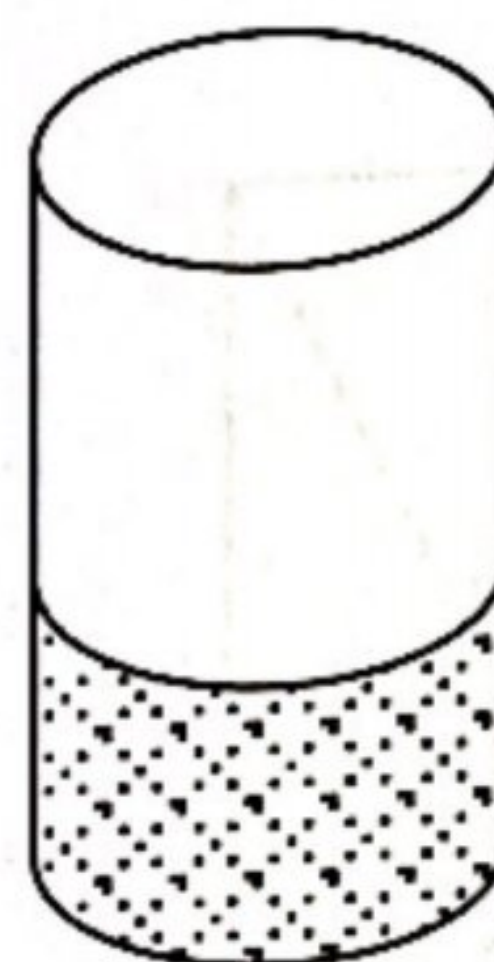
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- 31 Rajah 13(a) menunjukkan sebuah bekas berbentuk kuboid dengan luas tapak 176 cm^2 dan ketinggiannya 6 cm . Rajah 13(b) pula menunjukkan sebuah bekas silinder mempunyai jejari 10 cm . Lim menuang semua cecair daripada bekas berbentuk kuboid ke dalam bekas silinder.

Diagram 13(a) shows a cuboidal container with base area of 176 cm^2 and height of 6 cm . Diagram 13(b) shows a cylindrical container that has radius of 10 cm . Lim poured all the liquid from the cuboidal container into cylindrical container.



Rajah 13(a)
Diagram 13(a)



Rajah 13(b)
Diagram 13(b)

Hitung ketinggian cecair dalam bekas silinder itu, dalam cm.

(Guna $\pi = \frac{22}{7}$)

Calculate the height of the liquid in the cylindrical container, in cm.

(Use $\pi = \frac{22}{7}$)

- A 3.36
- B 13.44
- C 18.5
- D 20.16

- 32 Puan Era ingin membeli sebuah tas tangan berjenama dalam talian berdasarkan harga promosi yang ditawarkan oleh syarikat tempatan dan syarikat luar negara. Maklumat promosi jualan bagi kedua-dua syarikat diberi dalam Jadual 4 yang ditunjukkan di bawah.

Puan Era wants to buy a branded handbag online based on the promotional price offered from local company and abroad. Sale's promotion detail of two companies given in Table 4 as shown below.

	Syarikat tempatan <i>Local company</i>	Syarikat luar negara <i>Abroad company</i>
Harga promosi <i>Promotional price</i>	RM1 500.00	USD280.00
Caj kiriman <i>Shipping charges</i>	2% daripada harga promosi <i>2% of promotional price</i>	USD50.00
Caj tambahan <i>Additional charges</i>	—	1%
RM1.00 = USD0.24		

Jadual 4

Table 4

Jika Puan Era membayar menggunakan kad kredit, pihak bank akan mengenakan 1% caj tambahan bagi setiap transaksi dari luar negara.

Pilih jawapan yang **benar** bagi harga tas tangan yang perlu Puan Era bayar kepada syarikat-syarikat tersebut.

If Puan Era make a payment by credit card, the bank will charge 1% of additional fee on each transaction from abroad.

Choose the correct answer of handbag prices that Puan Era need to pay to the companies.

	Syarikat tempatan <i>Local company</i>	Syarikat luar negara <i>Abroad company</i>
A	RM1 500.00	RM1 166.67
B	RM1 502.00	RM1 375.00
C	RM1 502.00	RM1 386.67
D	RM1 530.00	RM1 386.67

- 33 Diberi bahawa z berubah secara langsung dengan kuasa dua y dan secara songsang dengan punca kuasa dua t .

Jika $z = 4$ apabila $y = 8$ dan $t = 25$, ungkapkan z dalam sebutan y dan t .

Given that z varies directly as square of y and inversely as square root of t .

If $z = 4$ when $y = 8$ and $t = 25$, express z in terms of y and t .

A $z = \frac{y^2}{\sqrt{t}}$

B $z = \frac{4y^2}{\sqrt{t}}$

C $z = \frac{5y^2}{16\sqrt{t}}$

D $z = \frac{5y^2}{\sqrt{t}}$

- 34 Jadual 5 menunjukkan perubahan tiga kuantiti. Diberi H berubah secara langsung dengan R dan kuasa tiga Q .

Table 5 shows the changes in three quantities. Given H varies directly as R and the cube of Q .

H	82.32	x	1.2
Q	1.4	2	0.25
R	15	0.75	y

Jadual 5

Table 5

Hitung nilai x dan nilai y .

Calculate the value of x and of y .

A $x = 12, y = 2.4$

B $x = 12, y = 38.4$

C $x = 23.52, y = 19.59$

D $x = 23.52, y = 27.09$

- 35 Helmi menerima pendapatan bulanan sebanyak RM7 500.00. Dia juga menyewakan rumahnya sebanyak RM1 200.00 sebulan. Dia mempunyai perbelanjaan tetap sebanyak RM2 600.00 dan perbelanjaan tidak tetap sebanyak RM1 300.00 sebulan.

Hitung aliran tunai bulanan Helmi.

Helmi earns a monthly income of RM7 500.00. He also rents out his house for RM1 200.00 per month. He has fixed expenses of RM2 600.00 and variable expenses of RM1 300.00 in a month.

Calculate Helmi's monthly cash flow.

- A RM4 800.00
- B RM6 100.00
- C RM6 200.00
- D RM1 300.00

- 36 Diberi matriks $P = \begin{pmatrix} 10 & -1 \\ -5 & 1 \end{pmatrix}$, $Q = b \begin{pmatrix} 1 & 1 \\ a & 10 \end{pmatrix}$ dan $PQ = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$.
Cari nilai a dan b .

Given matrix $P = \begin{pmatrix} 10 & -1 \\ -5 & 1 \end{pmatrix}$, $Q = b \begin{pmatrix} 1 & 1 \\ a & 10 \end{pmatrix}$ and $PQ = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$.

Find the values of a and b .

- A $a = 5, b = \frac{1}{15}$
- B $a = 5, b = \frac{1}{5}$
- C $a = -5, b = \frac{1}{15}$
- D $a = -5, b = \frac{1}{5}$

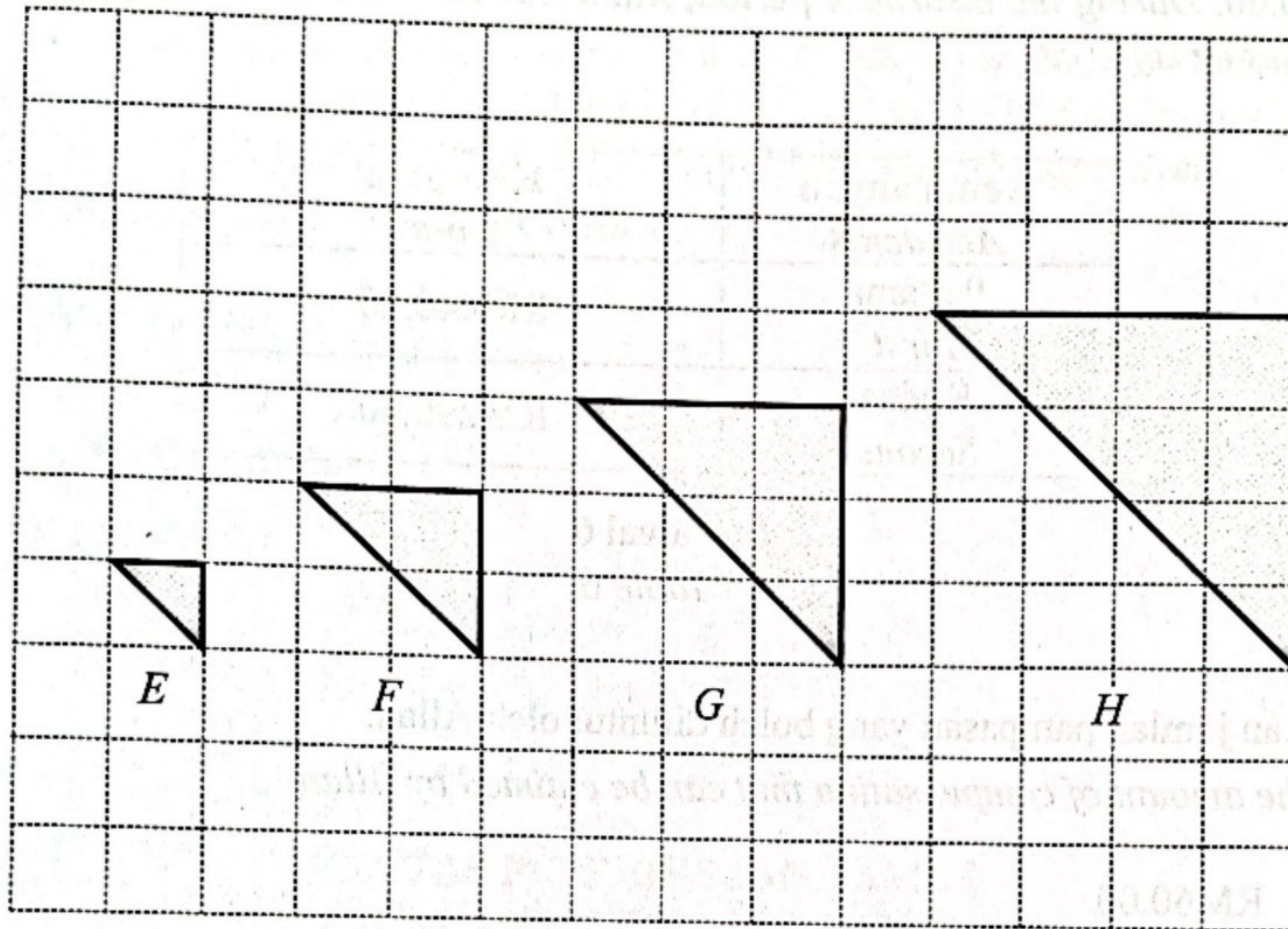
37 Tentukan nilai y bagi persamaan matriks berikut:

Determine the value of y for the following matrix equation:

$$\begin{pmatrix} 6 \\ -2 \end{pmatrix} + 3 \begin{pmatrix} y \\ 2 \end{pmatrix} = \begin{pmatrix} 9 \\ 4 \end{pmatrix}$$

- A 5
- B 3
- C 2
- D 1

- 38 Rajah 14 menunjukkan empat objek E , F , G dan H dilukis pada grid segi empat sama. E , F dan H ialah imej bagi G di bawah suatu pembesaran.
 Diagram 14 shows four objects, E , F , G and H drawn on the square grid. E , F and H are images of G under an enlargement.



Rajah 14
 Diagram 14

Antara berikut, yang manakah benar?

Which of the following is true?

	Imej Image	Faktor skala Scale factor
A	E	3
B	F	$\frac{3}{2}$
C	G	3
D	H	$\frac{4}{3}$

- 39 Motosikal Allan dilindungi dengan insurans motor yang mempunyai peruntukan deduktibel sebanyak RM350.00. Sepanjang tempoh insurans tersebut, Allan telah terlibat dengan dua kemalangan. Jadual 6 menunjukkan kerugian yang dialaminya.

Allan's motorcycles are covered by motor insurance which has a deductible provision of RM350.00. During the insurance period, Allan was involved in two accidents. Table 6 shows the losses he suffered.

Kemalangan <i>Accidents</i>	Kerugian <i>Loss</i>
Pertama <i>First</i>	RM440.50
Kedua <i>Second</i>	RM290.00

Jadual 6
Table 6

Nyatakan jumlah pampasan yang boleh dituntut oleh Allan.

State the amount of compensation that can be claimed by Allan.

- A RM60.00
- B RM90.50
- C RM380.50
- D RM730.50

- 40 Puan Dahlia memperoleh pendapatan tahunan pada tahun 2022 sebanyak RM128 800.00 termasuk elaun sebanyak RM15 500.00 yang dikecualikan cukai. Jumlah pelepasan cukai beliau adalah RM32 600.00. Pada tahun itu, dia telah membayar zakat fitrah dan telah memberi derma masing-masing sebanyak RM70.50 dan RM5 000.00.

Hitung pendapatan bercukai Puan Dahlia.

Puan Dahlia's earned an annual income of RM128 800.00 in 2022 including a tax-exempt allowance of RM15 500.00. Her total tax relief is RM32 600.00. In that year, she paid 'zakat fitrah' and gave donations of RM70.50 and RM5 000.00 respectively.

Calculate Puan Dahlia's chargeable income.

- A RM91 200.00
- B RM80 629.50
- C RM75 700.00
- D RM75 629.50

KERTAS PEPERIKSAAN TAMAT
END OF QUESTION PAPER

**MAKLUMAT UNTUK CALON
INFORMATION FOR CANDIDATES**

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