

SULIT
1449/1
Matematik
Kertas 1
November
2023

1449/1
STEPS



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

MAKTAB RENDAH SAINS MARA

PEPERIKSAAN AKHIR SIJIL PENDIDIKAN MRSM 2023

MATEMATIK

Kertas 1

Satu jam tiga puluh minit

STEPS

JANGAN BUKA KERTAS SOALAN 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.

Kertas peperiksaan ini mengandungi 36 halaman bercetak.

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**NOMBOR DAN OPERASI
NUMBER AND OPERATIONS**

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

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

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

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

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

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

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

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

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

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

$$10 \text{ Premium} = \frac{\text{Face value of policy}}{\text{RMx}} \times (\text{Premium rate per RMx})$$

$$\text{Jumlah insurans yang harus dibeli} = \left(\begin{array}{c} \text{Peratusan} \\ \text{ko-insurans} \end{array} \right) \times \left(\begin{array}{c} \text{Nilai boleh} \\ \text{insurans harta} \end{array} \right)$$

$$11 \text{ Amount of required insurance} = \left(\begin{array}{c} \text{Percentage of} \\ \text{co-insurance} \end{array} \right) \times \left(\begin{array}{c} \text{Insurable value} \\ \text{of property} \end{array} \right)$$

**PERKAITAN DAN ALGEBRA
RELATIONSHIP AND ALGEBRA**

Jarak / *Distance*

1 $= \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$

Titik Tengah / *Midpoint*,

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

$$\text{Laju Purata} = \frac{\text{Jumlah jarak}}{\text{Jumlah masa}}$$

3 $\text{Average speed} = \frac{\text{Total distance}}{\text{Total time}}$

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

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

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

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 = $\pi d = 2\pi j$
Circumference of circle = $\pi d = 2\pi r$
- 4 Luas bulatan = πj^2
Area of circle = πr^2
- 5 Panjang lengkok = $\frac{\theta}{360^\circ} \times 2\pi j$
Arc length = $\frac{\theta}{360^\circ} \times 2\pi r$
- 6 Luas sektor = $\frac{\theta}{360^\circ} \times \pi j^2$
Area of sector = $\frac{\theta}{360^\circ} \times \pi r^2$
- 7 Luas layang = $\frac{1}{2} \times$ 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 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 sfera = $4\pi j^2$
Surface area of sphere = $4\pi r^2$
- 12 Isi padu prisma = luas keratan rentas \times tinggi
Volume of prism = cross sectional area \times height
- 13 Isi padu silinder = $\pi j^2 t$
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 = $\frac{1}{3} \times$ luas tapak \times tinggi
Volume of pyramid = $\frac{1}{3} \times$ base area \times height
- 17 Faktor skala, $k = \frac{PA'}{PA}$
Scale factor, $k = \frac{PA'}{PA}$
- 18 Luas imej = $k^2 \times$ luas objek
Area of image = $k^2 \times$ 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, $\sigma^2 = \frac{\sum x^2}{N} - \bar{x}^2 = \frac{\sum (x - \bar{x})^2}{N}$
- 4 Varians / Variance, $\sigma^2 = \frac{\sum fx^2}{\sum f} - \bar{x}^2 = \frac{\sum f(x - \bar{x})^2}{\sum f}$
- 5 Sisihan piawai / Standard deviation, $\sigma = \sqrt{\frac{\sum x^2}{N} - \bar{x}^2} = \sqrt{\frac{\sum (x - \bar{x})^2}{N}}$
- 6 Sisihan piawai / Standard deviation, $\sigma = \sqrt{\frac{\sum fx^2}{\sum f} - \bar{x}^2} = \sqrt{\frac{\sum f(x - \bar{x})^2}{\sum f}}$
- 7 $P(A) = \frac{n(A)}{n(S)}$
- 8 $P(A') = 1 - P(A)$

1 Nilaiakan:

Evaluate:

$$\left[28 \times \left(-\frac{7}{10} + 1.2 \right) \right] \div 0.7$$

A -26.29

B -17.89

C 20.00

D 29.71

2 Apakah Faktor Sepunya Terbesar (FSTB) bagi sebutan berikut?

What is the Highest Common Factor (HCF) for the following terms?

$$x^2y, y^2, xyz$$

A x

B y

C xy

D yz

3 Antara berikut, yang manakah **benar**?

*Which of the following is **true**?*

A $\sqrt{p} \times \sqrt{p} = \sqrt{2p}$

B $\sqrt{2p \times p} = 2\sqrt{p}$

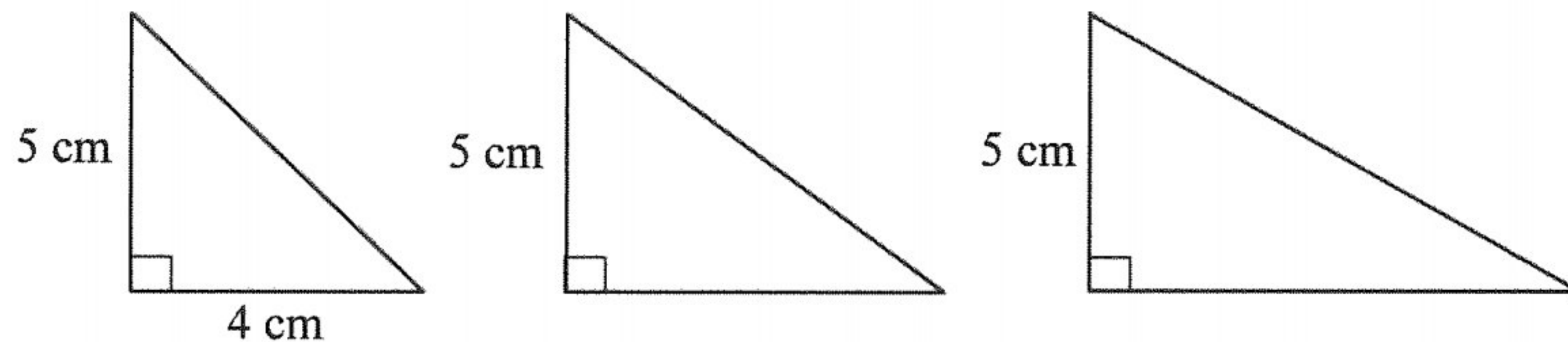
C $\sqrt{p \times p} = 2p^2$

D $2\sqrt{p} \times \sqrt{p} = 2p$

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- 4 Rajah 1 menunjukkan susunan tiga segi tiga bersudut tegak yang pertama yang mempunyai tinggi 5 cm.

Diagram 1 shows the arrangement of the first three of right-angled triangles with height of 5 cm.



Rajah 1
Diagram 1

Diberi bahawa tapak segi tiga yang pertama ialah 4 cm. Tapak segi tiga yang seterusnya ialah 2 cm lebih panjang daripada tapak segi tiga yang sebelumnya. Cari luas, dalam cm^2 , segi tiga yang ke-100.

It is given that the base of the first triangle is 4 cm. The length of the subsequent base of the triangle is 2 cm more than its previous one.

Find the area, in cm^2 , of the 100th triangle.

- A 505
- B 510
- C 1000
- D 1010

5 Ringkaskan:

Simplify:

$$\frac{\left(2e^3 \times 5f^{\frac{1}{3}}\right)^3}{10e^4}$$

A $e^2 f$

B $e^5 f$

C $100e^2 f$

D $100e^5 f$

6 Ungkapkan 9769.76 dalam bentuk piawai betul kepada tiga angka bererti.

Express 9769.76 in standard form correct to three significant figures.

A 9.77×10^{-3}

B 9.76×10^{-3}

C 9.76×10^3

D 9.77×10^3

- 7 Jadual 1 menunjukkan simpanan Farhan pada tiga bulan pertama.
Table 1 shows Farhan's savings for the first three months.

Bulan <i>Month</i>	Januari <i>January</i>	Februari <i>February</i>	Mac <i>March</i>
Simpanan bulanan <i>Monthly savings</i>	RM 132 ₄	RM 1111 ₃	RM 110010 ₂

Jadual 1
Table 1

Farhan menyimpan secara tetap dan wang simpanannya setiap bulan membentuk suatu jujukan.

Hitung jumlah simpanannya, dalam asas sembilan, pada akhir bulan Jun.

*Farhan saved constantly and his savings every month formed a sequence.
 Calculate his total savings, in base nine, at the end of June.*

- A RM286₉
- B RM330₉
- C RM406₉
- D RM604₉

- 8 Antara berikut, yang manakah **bukan** kunci komponen dalam konsep SMART semasa menetapkan matlamat?

*Which of the following is **not** a key component in SMART concept for goal setting?*

- A Matlamat
Goal
- B Realistik
Realistic
- C Khusus
Specific
- D Boleh dicapai
Attainable

- 9 Rumus di bawah digunakan untuk menghitung pendapatan bercukai.
The formula below is used to calculate chargeable income.

Pendapatan bercukai = Jumlah pendapatan bulanan – Pengecualian cukai – X

Chargeable income = Total annual income – Tax exemption – X

Apakah X ?

What is X ?

- A** Rebat Cukai
Tax Rebate
- B** Zakat
Zakat
- C** Pelepasan Cukai
Tax Relief
- D** Elaun
Allowance

- 10 Jika $g:h=2:3$ dan $h:i=5:7$, cari nisbah $g:h:i$.

If $g:h=2:3$ and $h:i=5:7$, find the ratio of $g:h:i$.

- A $2:15:7$
B $2:15:21$
C $10:15:21$
D $10:15:7$

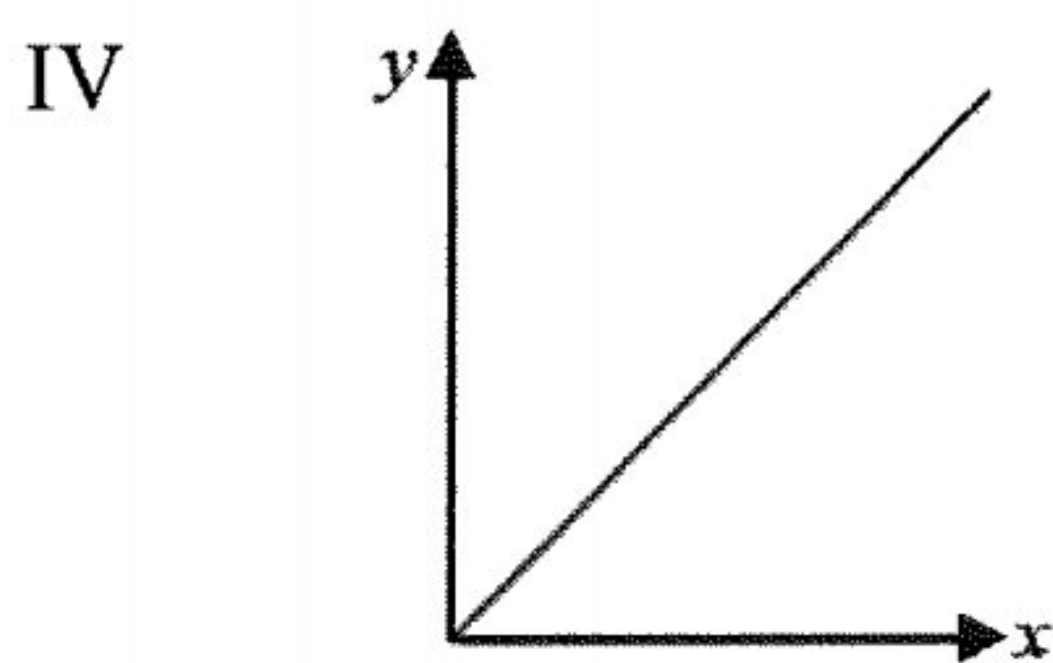
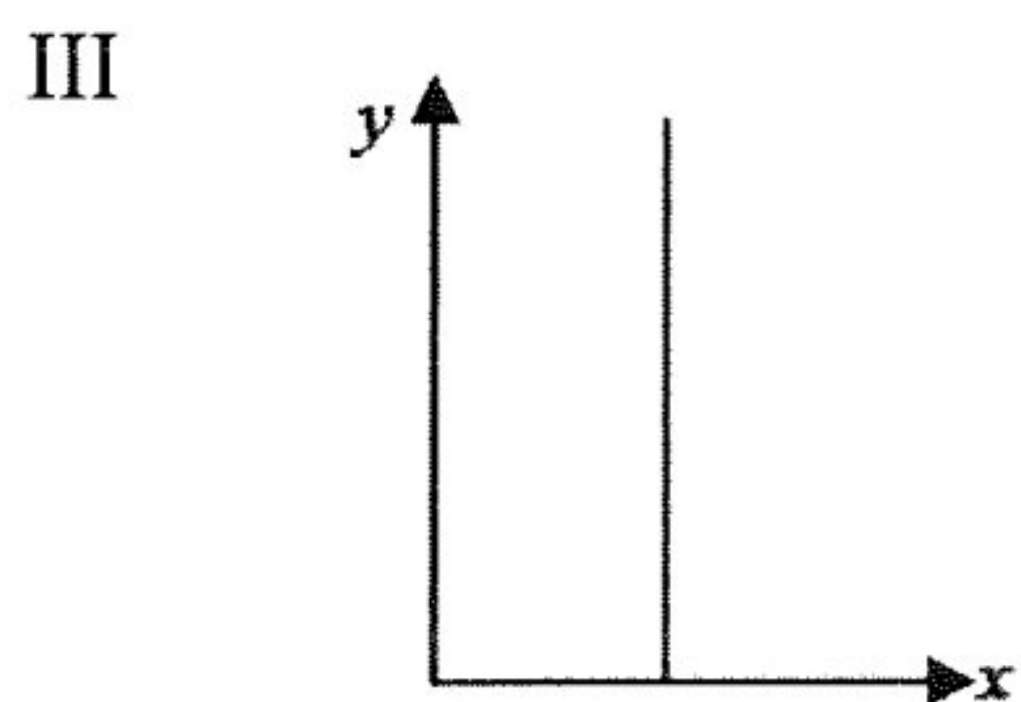
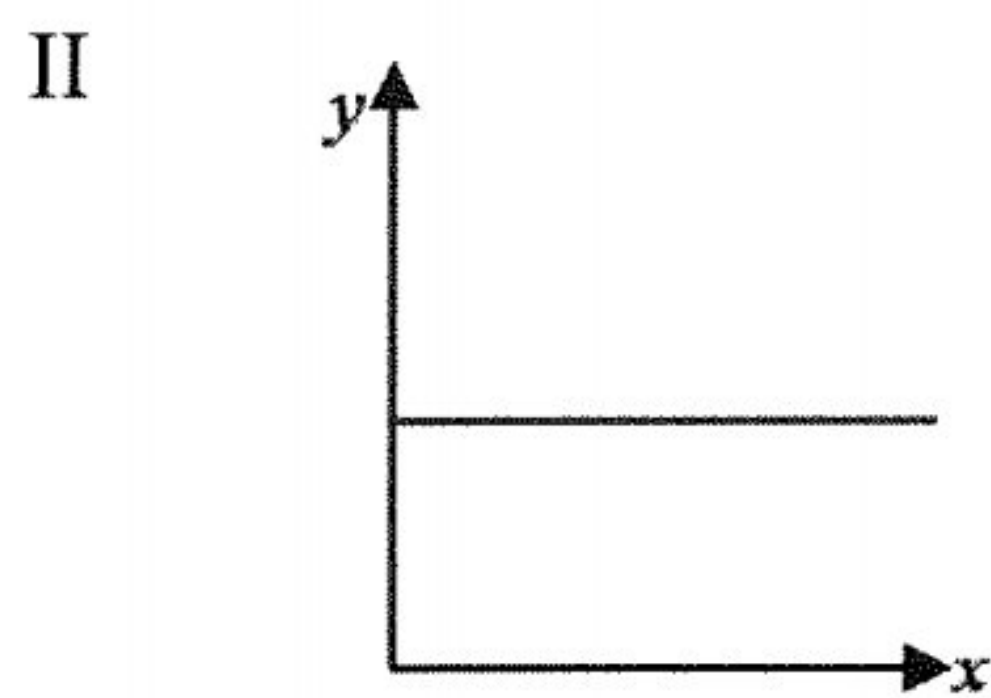
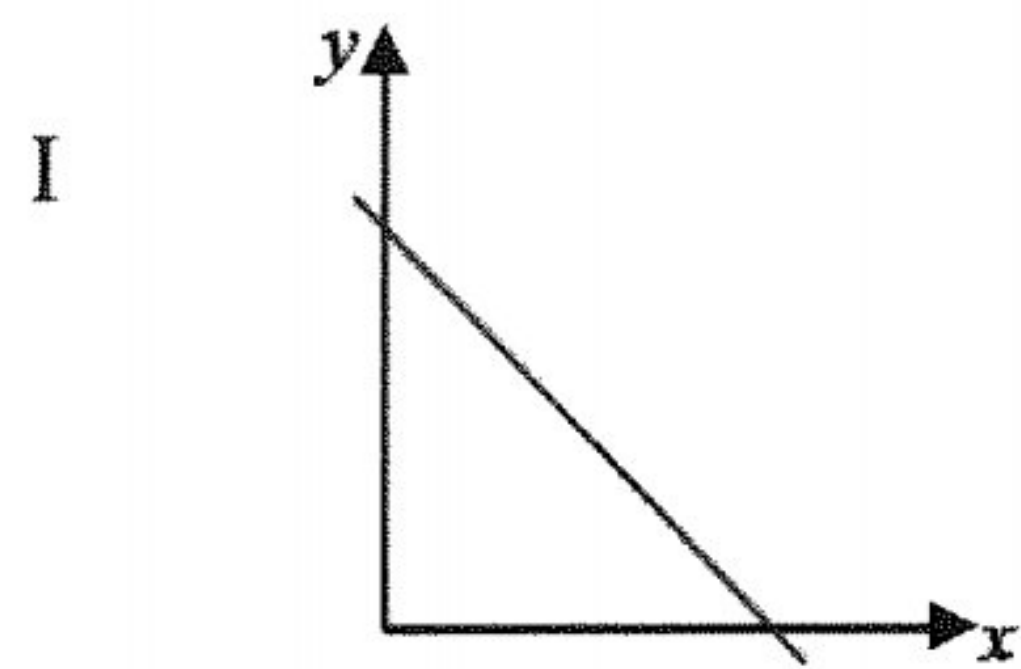
- 11 Antara berikut, pasangan yang manakah mempunyai sebutan serupa?

Which of the following pairs are like terms?

- A $12a, 4ba$
B $\frac{4}{5}p, 6p$
C $\frac{6}{s}, 10.1s$
D $0.5x^2, \frac{1}{2}x$

- 12 Antara rajah berikut, yang manakah mewakili persamaan linear dalam dua pembolehubah secara graf?

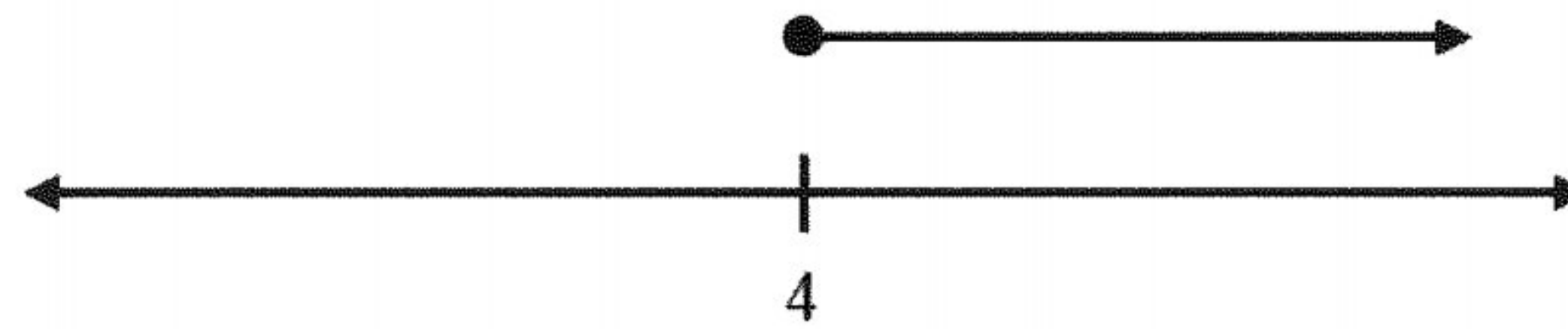
Which of the following diagrams represent graphically a linear equation in two variables?



- A I dan/ and III
B I dan/ and IV
C II dan/ and III
D II dan/ and IV

- 13 Garis nombor di bawah mewakili penyelesaian bagi satu ketaksamaan.

The number line below represents the solution of an inequality.



Antara berikut, yang manakah memenuhi penyelesaian bagi ketaksamaan di atas?

Which of the following inequality satisfies the above solution?

- A $x - 16 \geq 2x - 20$
- B $x + 18 \geq 3x + 10$
- C $2x - 4 \geq x$
- D $x \geq 3x - 8$
- 14 Faktorkan selengkapnya.

Factorise completely.

$$18x^2 - 2$$

- A $(3x - 1)(3x + 1)$
- B $(3x - 1)(3x - 1)$
- C $2(3x - 1)(3x + 1)$
- D $2(3x - 1)(3x - 1)$

- 15 Ahmad membeli 10 biji epal dan 5 biji buah naga. Harga sebiji epal dan sebiji buah naga masing-masing ialah RM x dan RM y . Ahmad membayar dengan jumlah RM z . Ungkapkan y dalam sebutan x dan z .

Ahmad bought 10 apples and 5 dragon fruits. The price of an apple and a dragon fruit are RM x and RM y respectively. Ahmad paid with the amount of RM z . Express y in term of x and z .

A $y = \frac{1}{5}z + 2x$

B $y = \frac{1}{5}z - 2x$

C $y = 2x - \frac{1}{5}z$

D $y = z - 2x$

- 16 Diberi titik A berada 2 unit ke kiri dari paksi- y dan 3 unit ke atas dari paksi- x , manakala titik B berada 10 unit ke kanan dari paksi- y dan 2 unit ke bawah dari paksi- x . Hitung jarak AB .

Given that point A is located 2 units to the left of y -axis and 3 units above x -axis, whereas point B is located 10 units to the right of y -axis and 2 units below x -axis. Calculate the distance of AB .

A $\sqrt{65}$ unit/units

B $\sqrt{89}$ unit/units

C $\sqrt{119}$ unit/units

D $\sqrt{169}$ unit/units

- 17 Jadual 2 menunjukkan nilai-nilai pemboleh ubah x dan y bagi fungsi $y = x^2 - 2x - 8$.

Table 2 shows the values of two variables x and y for the function $y = x^2 - 2x - 8$.

x	-3	-2	0	2
y	m	0	p	-8

Jadual 2
Table 2

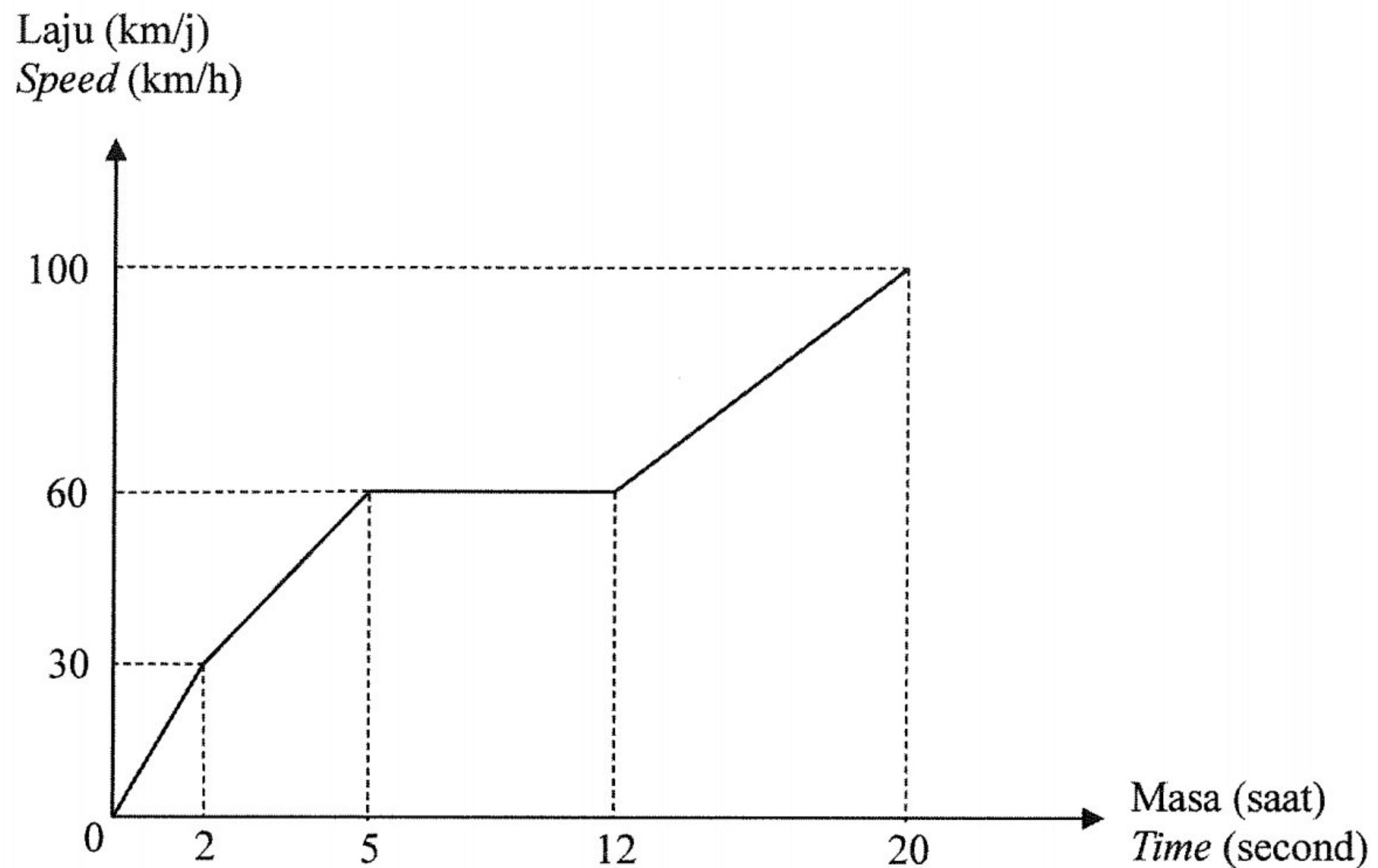
Hitung nilai bagi $2m - p$.

Calculate the value of $2m - p$.

- A 6
- B 9
- C 15
- D 22

- 18 Rajah 2 menunjukkan graf laju-masa bagi pergerakan suatu zarah dalam masa 20 saat.

Diagram 2 shows a speed-time graph the motion of a particle for a period of 20 seconds.



Rajah 2
Diagram 2

Hitung beza antara pecutan maksimum dan pecutan minimum, dalam km/j per saat bagi zarah itu.

Calculate the difference between the maximum and minimum acceleration, in km/h per second for the particle.

- A 3
- B 5
- C 10
- D 15

- 19 Diberi bahawa $\frac{2x}{5} - \frac{y}{4} = 1$ ialah persamaan suatu garis lurus, tentukan nilai pintasan-y dan kecerunan bagi garis lurus tersebut.

Given that $\frac{2x}{5} - \frac{y}{4} = 1$ is an equation of a straight line, determine the value of y -intercept and the gradient of the straight line.

	Pintasan-y <i>y</i>-intercept	Kecerunan Gradient
A	-4	$\frac{8}{5}$
B	-4	$-\frac{8}{5}$
C	4	$\frac{8}{5}$
D	4	$-\frac{8}{5}$

- 20 Diberi bahawa r berubah secara songsang dengan punca kuasa tiga s dan $r = 4$ apabila $s = 27$. Ungkapkan r dalam sebutan s .

Given r varies inversely as the cube root of s and $r = 4$ when $s = 27$.

Express r in terms of s .

A $r = \frac{4}{3} \sqrt[3]{s}$

B $r = 12 \sqrt[3]{s}$

C $r = \frac{4}{3 \sqrt[3]{s}}$

D $r = \frac{12}{\sqrt[3]{s}}$

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- 21 Antara berikut, yang manakah huraian yang paling tepat untuk model matematik?

Which of the following is the most accurate description for mathematical model?

- A Suatu perwakilan bagi satu sistem atau senario yang digunakan untuk memperoleh pemahaman soalan matematik serta meramalkan perlakuan masa depan.

A representation of a system or scenario that is used to gain understanding of a mathematics question and to predict future behaviour.

- B Suatu perwakilan bagi satu sistem atau senario yang digunakan untuk memperoleh pemahaman kualitatif dan/atau kuantitatif bagi masalah dunia sebenar serta meramalkan perlakuan masa depan.

A representation of a system or scenario that is used to gain qualitative and/or quantitative understanding of some real-world problems and to predict future behaviour.

- C Suatu perwakilan bagi satu sistem atau senario yang digunakan untuk menghubungkan rumus matematik serta meramalkan perlakuan masa depan.

A representation of a system or scenario that is used to interrelate mathematical formulae and to predict future behaviour.

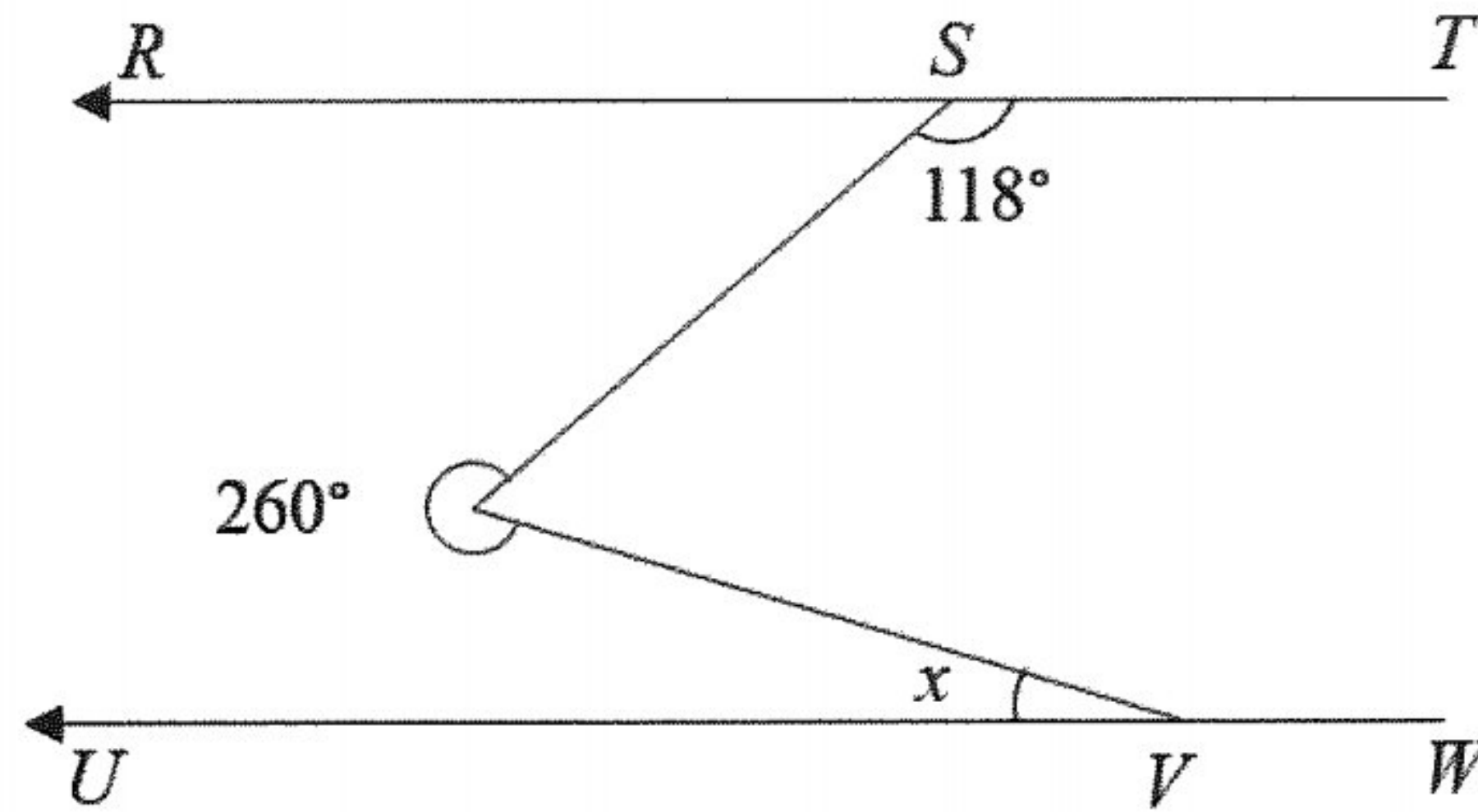
- D Suatu perwakilan matematik dalam fungsi linear, kuadratik atau eksponen serta meramalkan perlakuan masa depan.

A mathematical representation in linear, quadratic, or exponential function and to predict future behaviour.

STEPS

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- 22 Rajah 3 menunjukkan dua garis selari RST dan UVW .
Diagram 3 shows two parallel lines RST and UVW .



Rajah 3
Diagram 3

Cari nilai x .

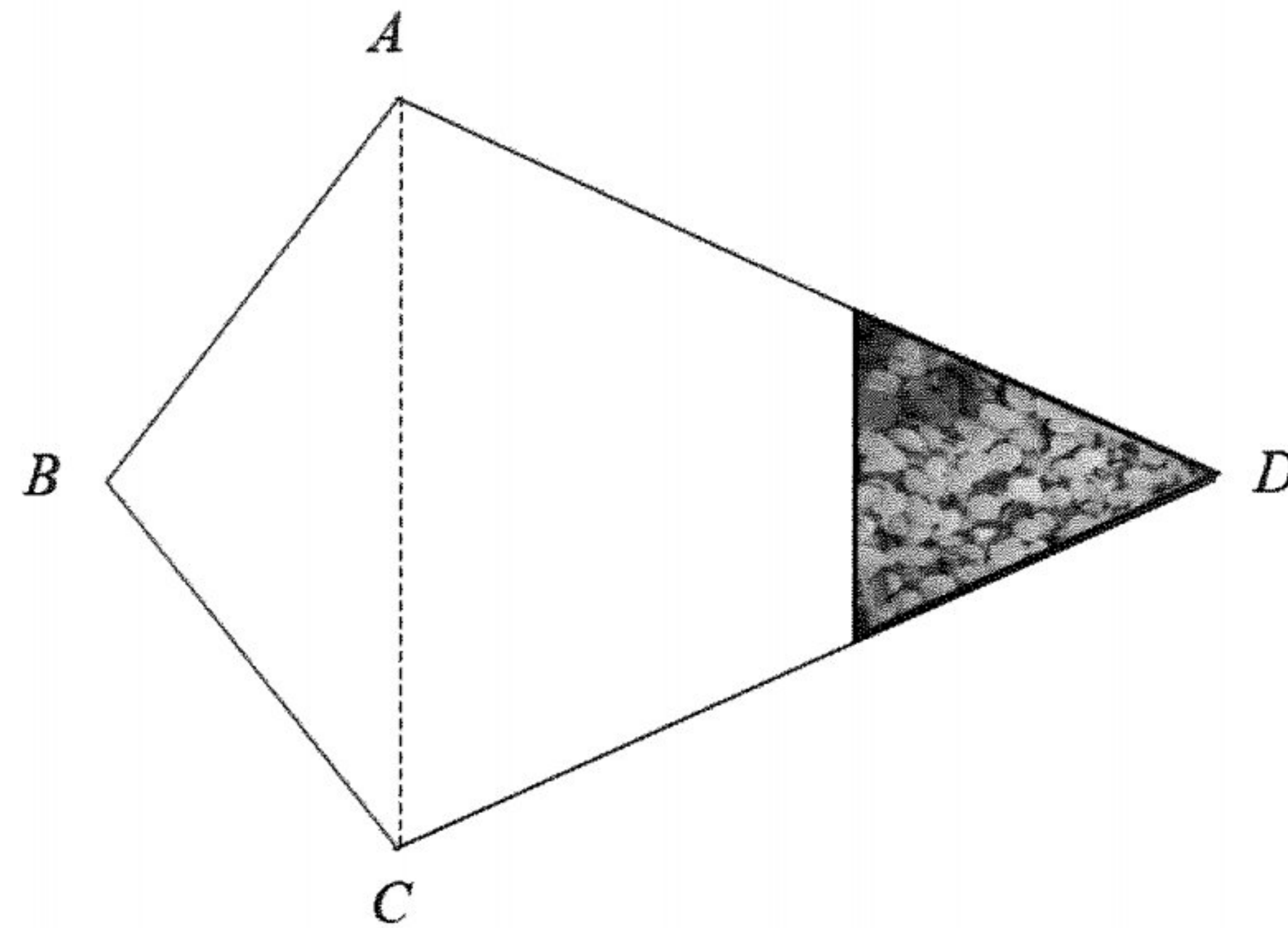
Find the value of x .

- A 18°
- B 38°
- C 50°
- D 62°

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- 23 Rajah 4 menunjukkan sebuah taman botani yang berbentuk layang. Panjang $BD = 720$ m dan kawasan berlorek seluas 35% daripada taman itu digunakan untuk menanam pokok herba.

Diagram 4 shows a kite-shaped botanical garden. The length of $BD = 720$ m and the shaded area which is 35% of the whole garden is used to plant herbs.



Rajah 4
Diagram 4

Jika luas kawasan berlorek ialah 31500 m^2 , hitung, dalam m, panjang AC .
If the shaded area is 31500 m^2 , calculate, in m, the length of AC .

- A 30.63
- B 56.88
- C 125
- D 250

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24 Antara pernyataan berikut yang manakah **benar**?

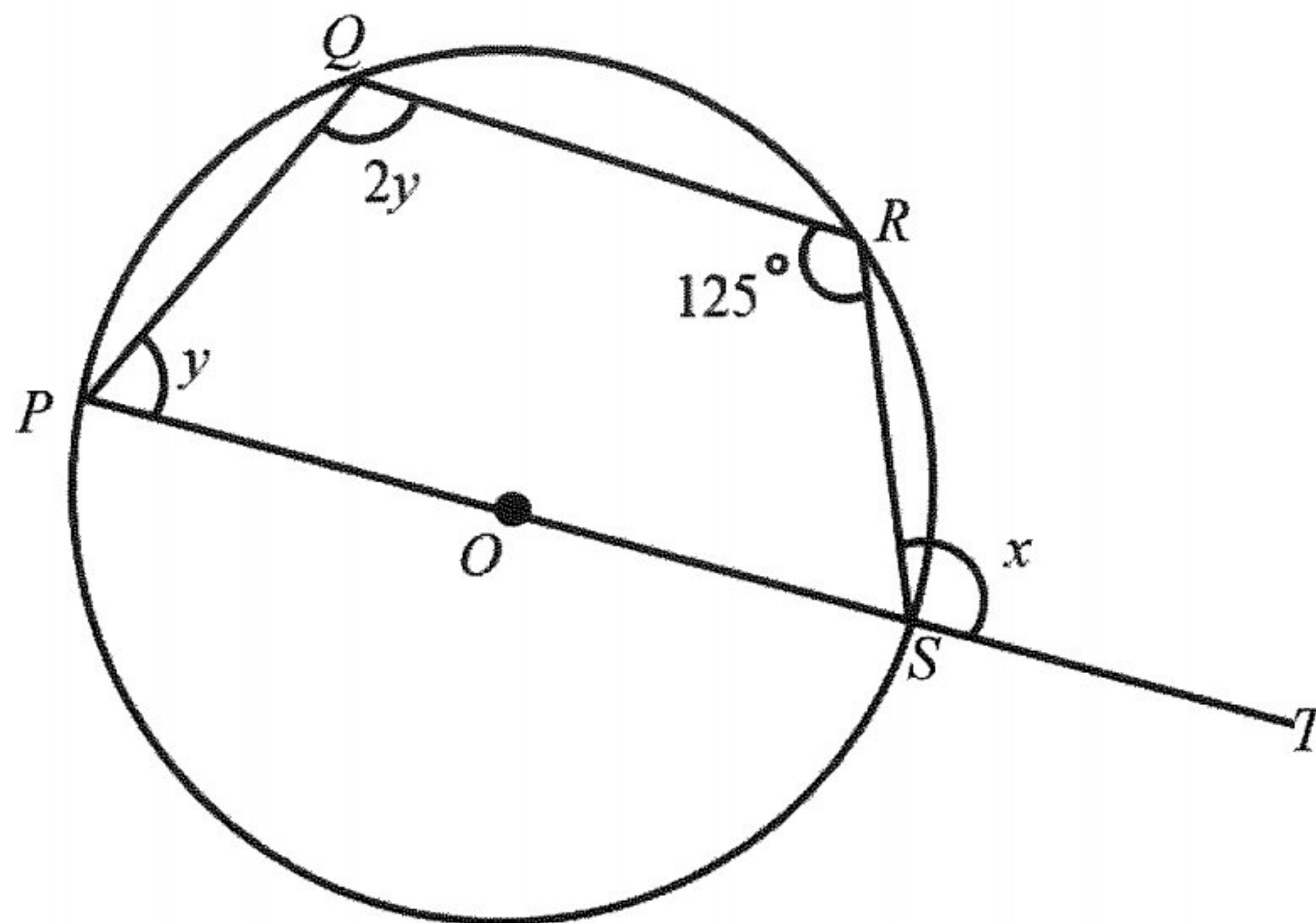
*Which of the following is a **true** statement?*

- A** Sudut pedalaman bagi sebuah heksagon sekata ialah 120° .
The interior angle of a regular hexagon is 120° .
- B** Sudut peluaran bagi sebuah nonagon sekata ialah 45° .
The exterior angle of a regular nonagon is 45° .
- C** Hasil tambah sudut pedalaman sebuah heptagon ialah 750° .
The sum of interior angles of a heptagon is 750° .
- D** Bilangan paksi simetri bagi sebuah oktagon sekata ialah 6.
The number of axes of symmetry of a regular octagon is 6.

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- 25 Rajah 5 menunjukkan sebuah bulatan $PQRS$ berpusat O .
 $POST$ ialah satu garis lurus.

*Diagram 5 shows a circle $PQRS$ with centre O .
 $POST$ is a straight line.*



Rajah 5
Diagram 5

Hitung nilai x .

Calculate the value of x .

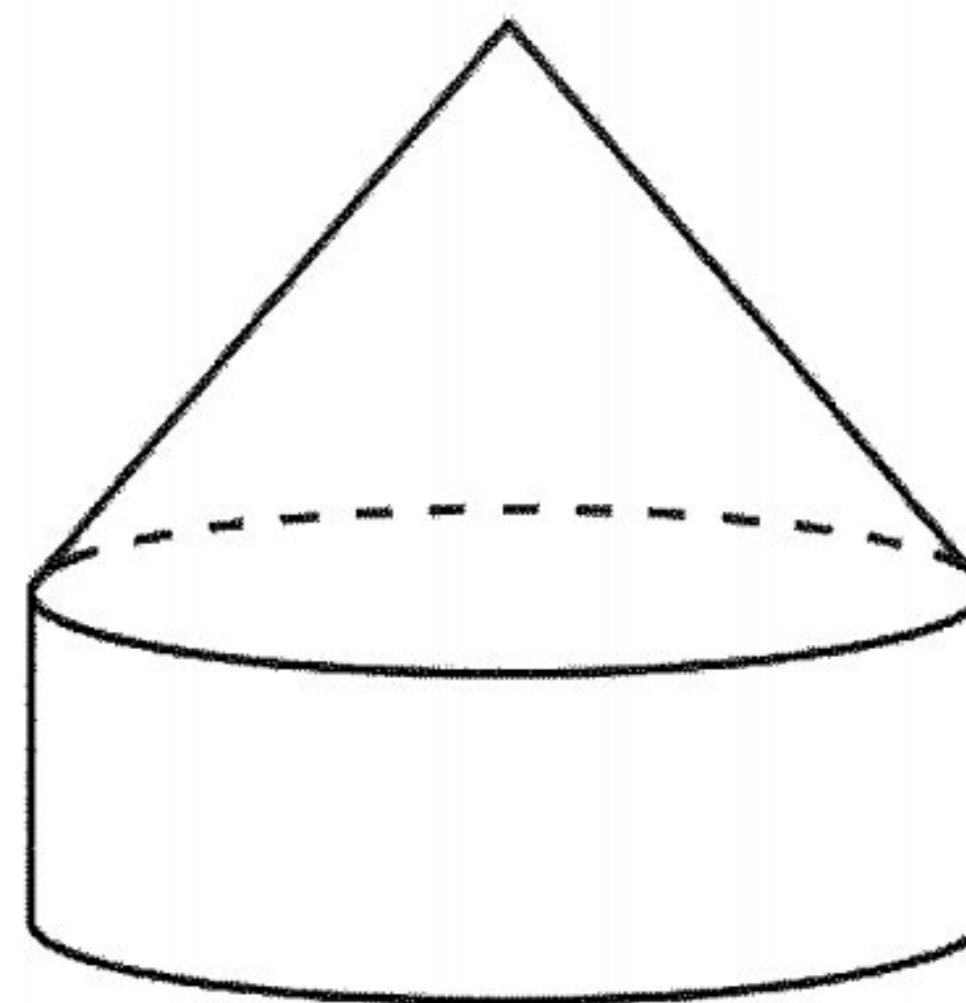
- A 110°
- B 115°
- C 120°
- D 125°

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- 26 Rajah 6 menunjukkan sebuah pepejal yang terdiri daripada gabungan sebuah silinder dan sebuah kon. Tinggi silinder tersebut ialah sama dengan jejарinya manakala tinggi sendeng kon tersebut ialah dua kali ganda jejарinya.

Diagram 6 shows a solid made by combining a cylinder and a cone. The height of the cylinder is equal to its radius while the slant height of the cone is twice its radius.



Rajah 6
Diagram 6

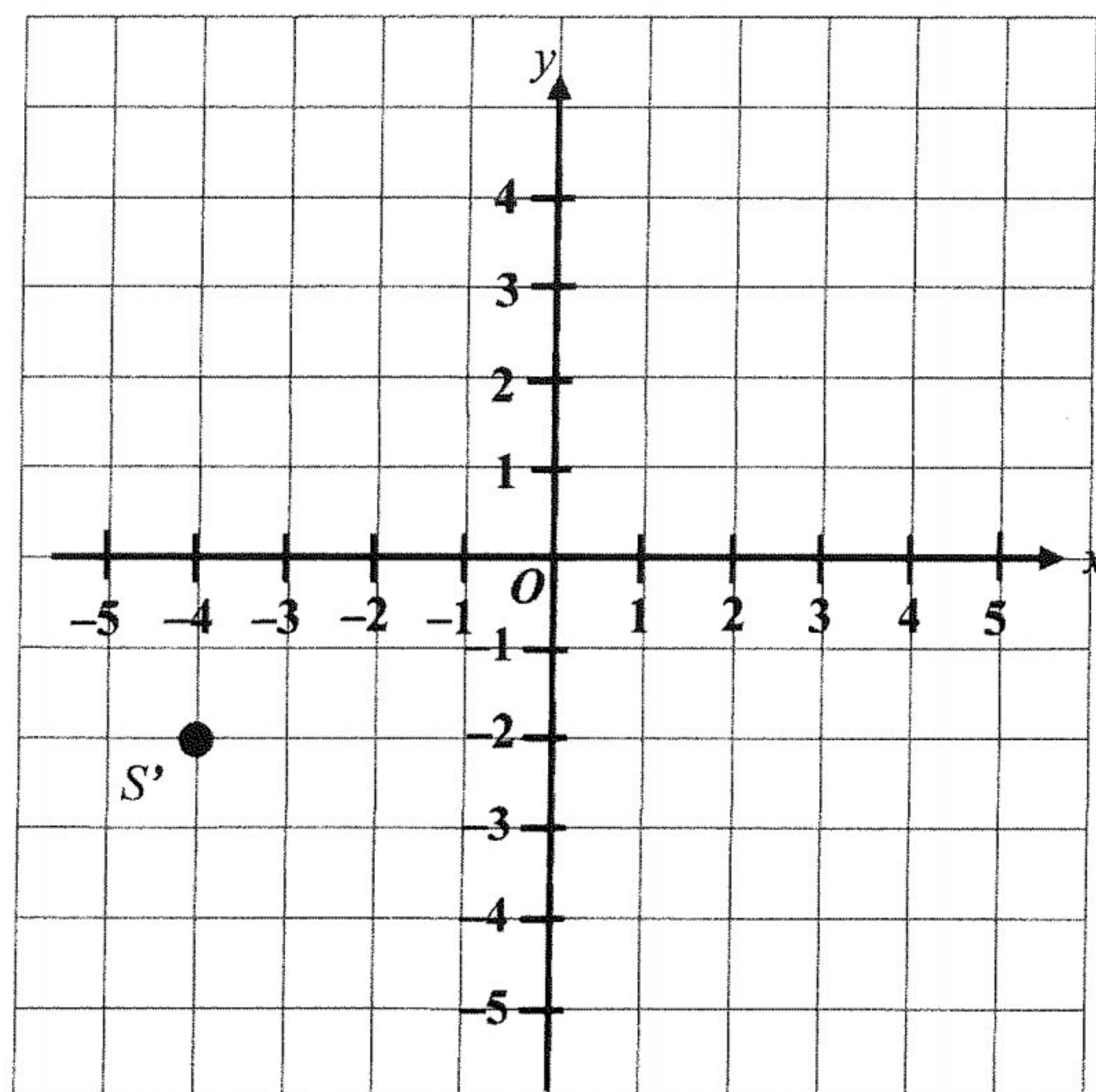
Hitung jejari, dalam cm, silinder itu jika jumlah luas permukaan gabungan pepejal tersebut adalah suku daripada isipadu silinder.

Calculate the radius, in cm, of the cylinder if the total surface area of the combined solid is a quarter of the volume of the cylinder.

- A 10
- B 12
- C 16
- D 20

27 Rajah 7 menunjukkan suatu satah Cartes.

Diagram 7 shows a Cartesian plane.



Rajah 7
Diagram 7

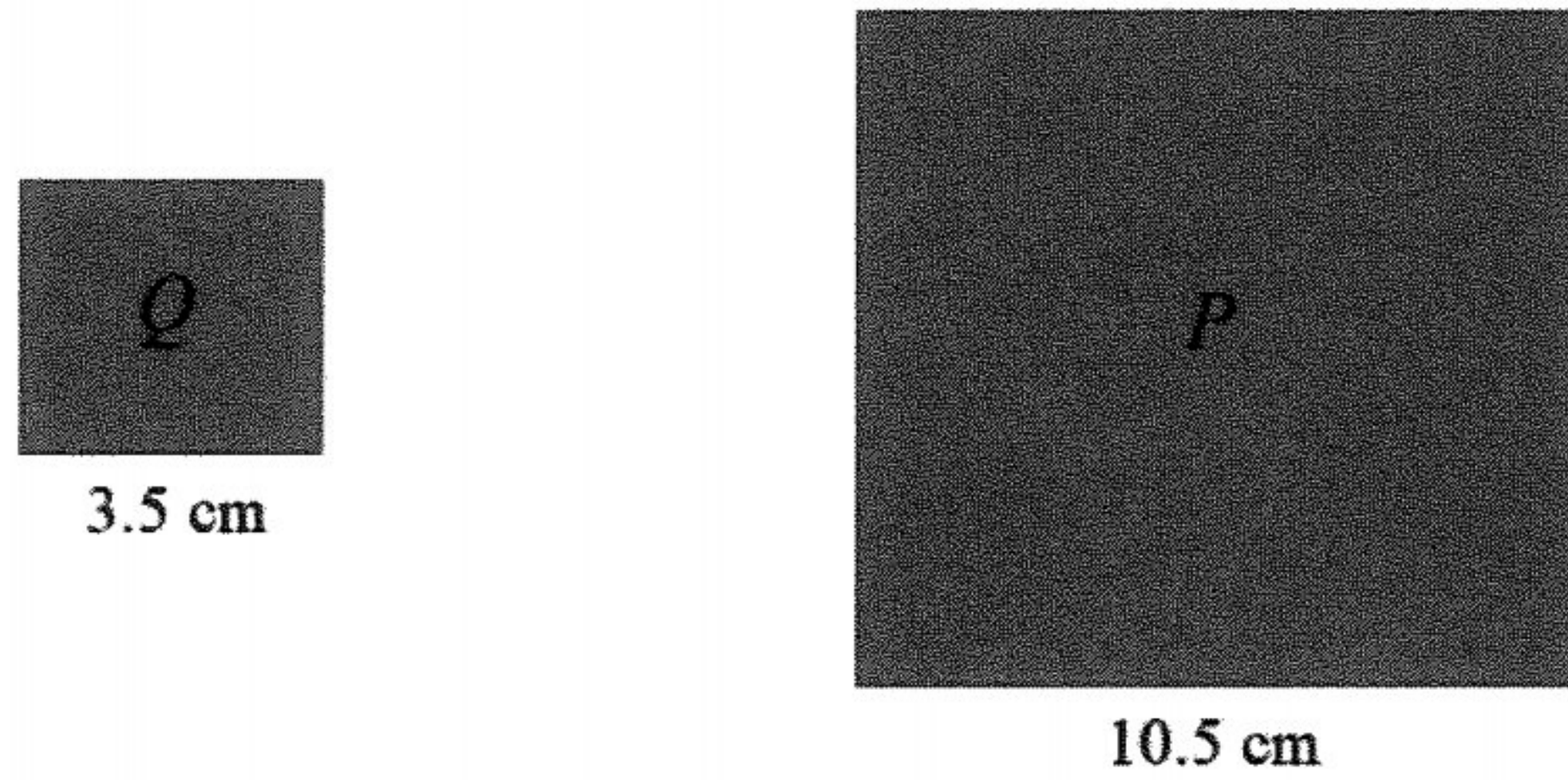
Titik S' ialah imej bagi titik S di bawah suatu putaran 90° lawan arah jam pada titik $(-1, -1)$. Manakala titik S ialah imej bagi titik R di bawah pantulan pada paksi- y . Cari koordinat titik R .

Point S' is an image of point S under a 90° anticlockwise rotation about point $(-1, -1)$. Meanwhile point S is the image of point R under reflection on the y -axis. Find the coordinates of point R .

- A $(0, -4)$
- B $(0, 4)$
- C $(-2, -2)$
- D $(2, 2)$

- 28 Rajah 8 menunjukkan segi empat sama P yang merupakan lukisan berskala bagi segi empat sama Q .

Diagram 8 shows a square P is the scale drawing of a square Q .



Rajah 8
Diagram 8

Nyatakan skala yang digunakan.

State the scale used.

A $1:\frac{1}{3}$

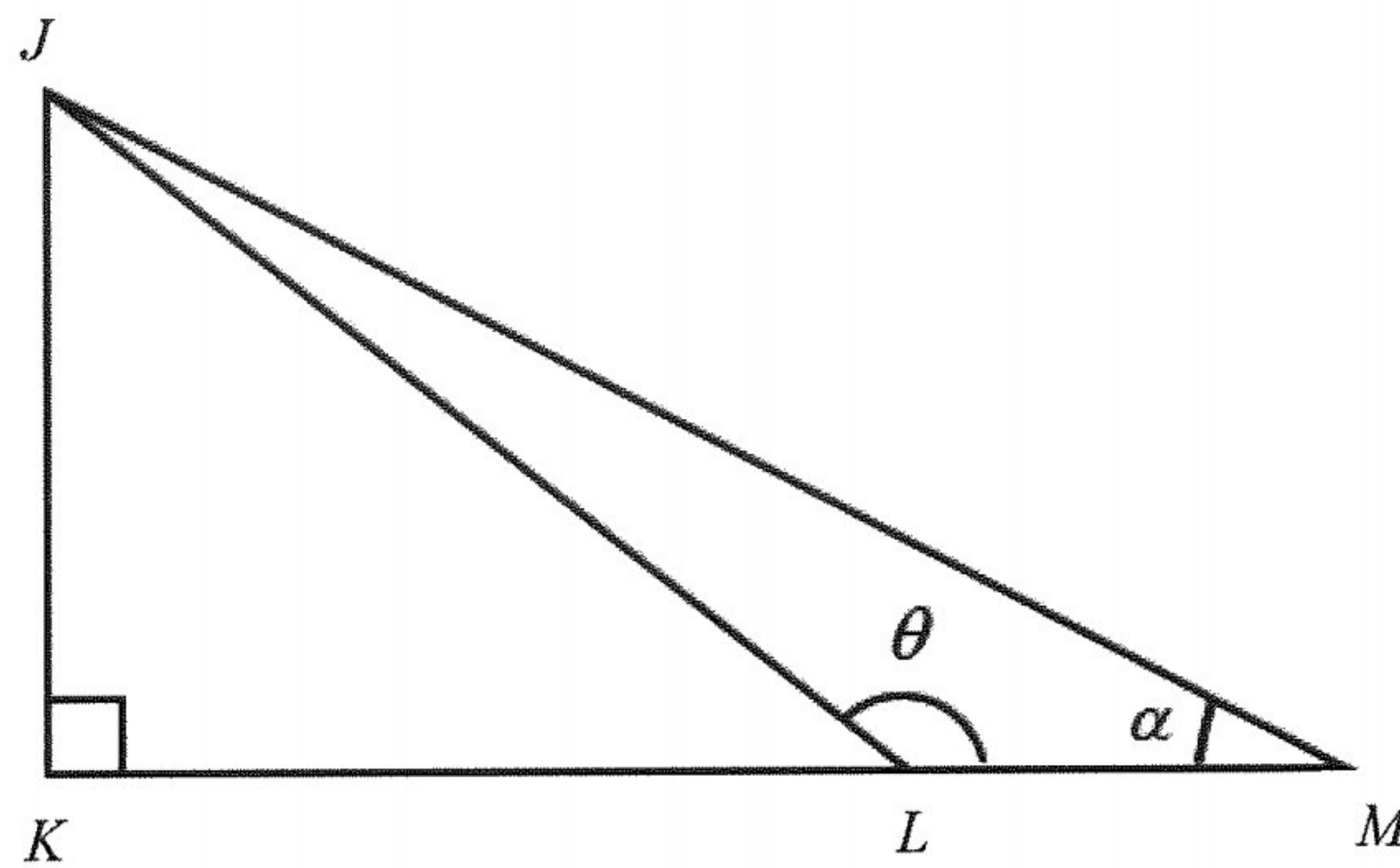
B $\frac{1}{3}:1$

C 1:3

D 3:1

- 29 Rajah 9 menunjukkan segitiga bersudut tegak JKM dan KLM ialah suatu garis lurus.

Diagram 9 shows a right-angled triangle JKM and KLM is a straight line.



Rajah 9
Diagram 9

Diberi $\sin \alpha = \frac{8}{17}$ dan $KL : KM = 3 : 5$. Hitung nilai $\tan \theta$.

Given $\sin \alpha = \frac{8}{17}$ and $KL : KM = 3 : 5$. Calculate the value of $\tan \theta$.

A $-\frac{8}{15}$

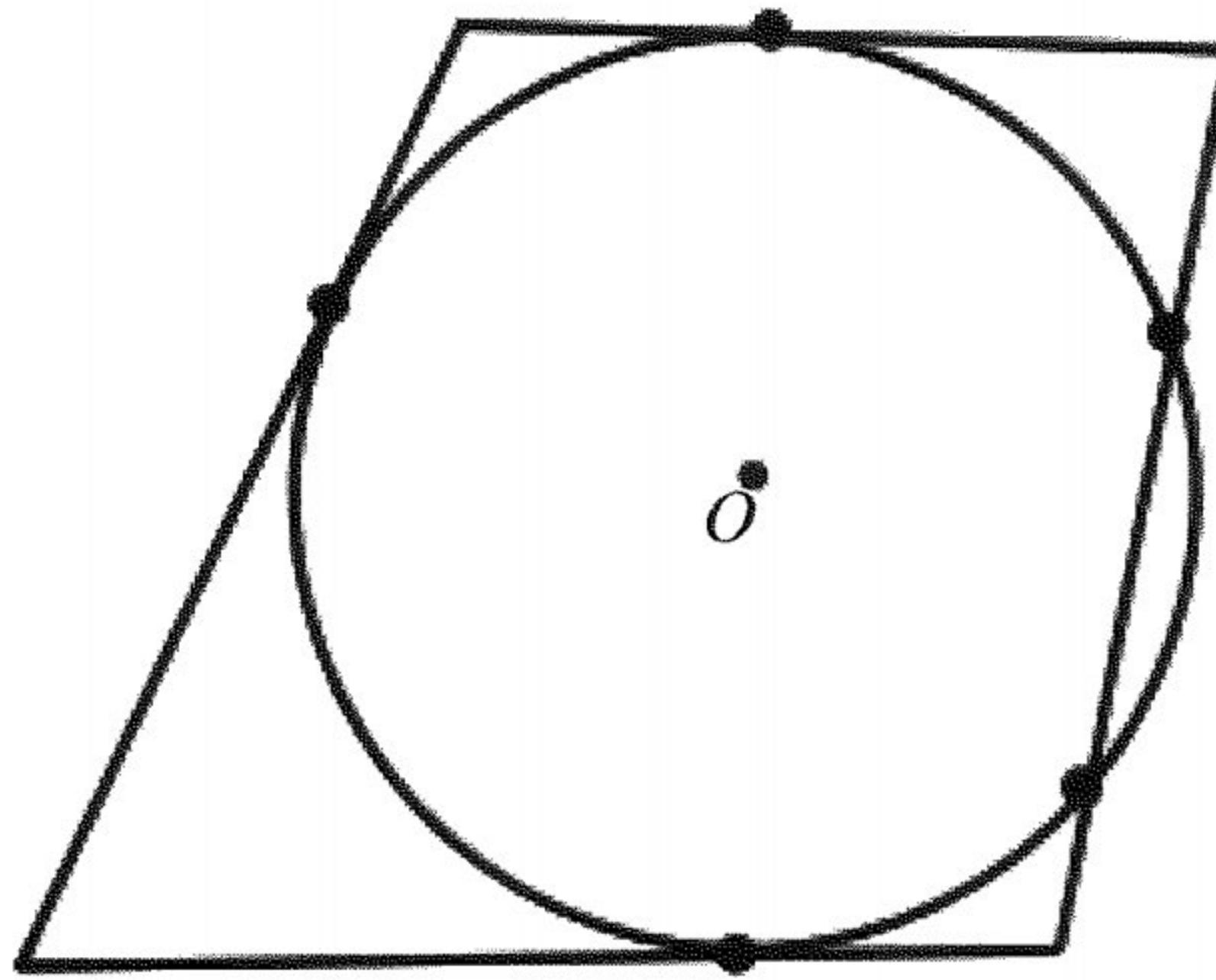
B $-\frac{8}{9}$

C $\frac{8}{15}$

D $\frac{8}{9}$

30 Rajah 10 menunjukkan bulatan pada pusat bulatan O .

Diagram 10 shows a circle with centre O .



Rajah 10
Diagram 10

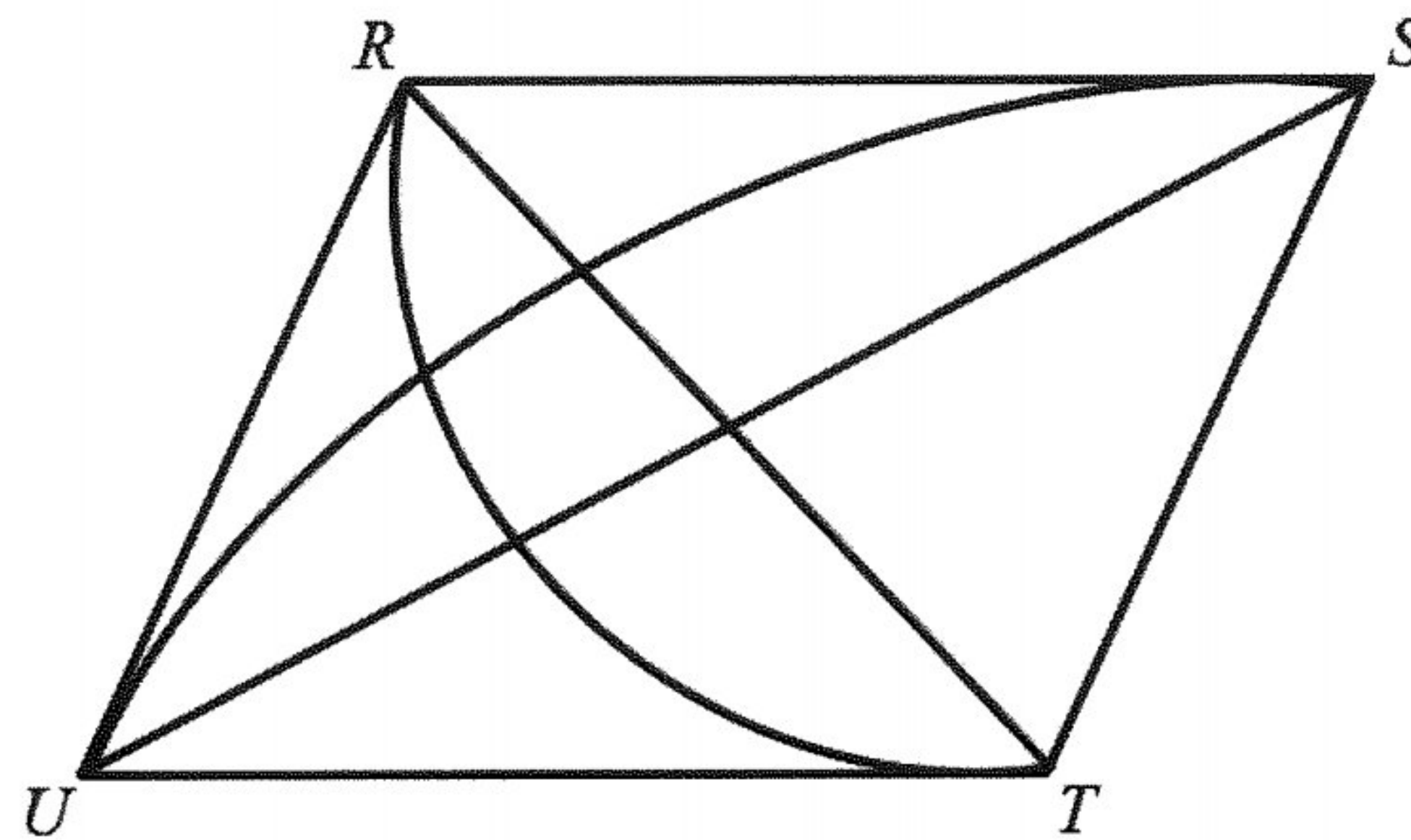
Nyatakan bilangan garis tangen kepada bulatan tersebut.

State the number of tangents to the circle.

- A 2
- B 3
- C 4
- D 5

STEPS

- 31 Rajah 11 menunjukkan sebuah segi empat selari $RSTU$.
Diagram 11 shows a parallelogram $RSTU$.



Rajah 11
Diagram 11

Z ialah suatu titik bergerak yang jaraknya sentiasa sama dengan garis RS dan ST . Antara berikut yang manakah mewakili lokus Z ?

*Z is a moving point which distance is always equal from line RS and ST .
Which of the following represents locus Z ?*

- A Garis lurus RT
 Straight line RT
- B Garis lurus US
 Straight line US
- C Lengkok RT
 Arc RT
- D Lengkok US
 Arc US

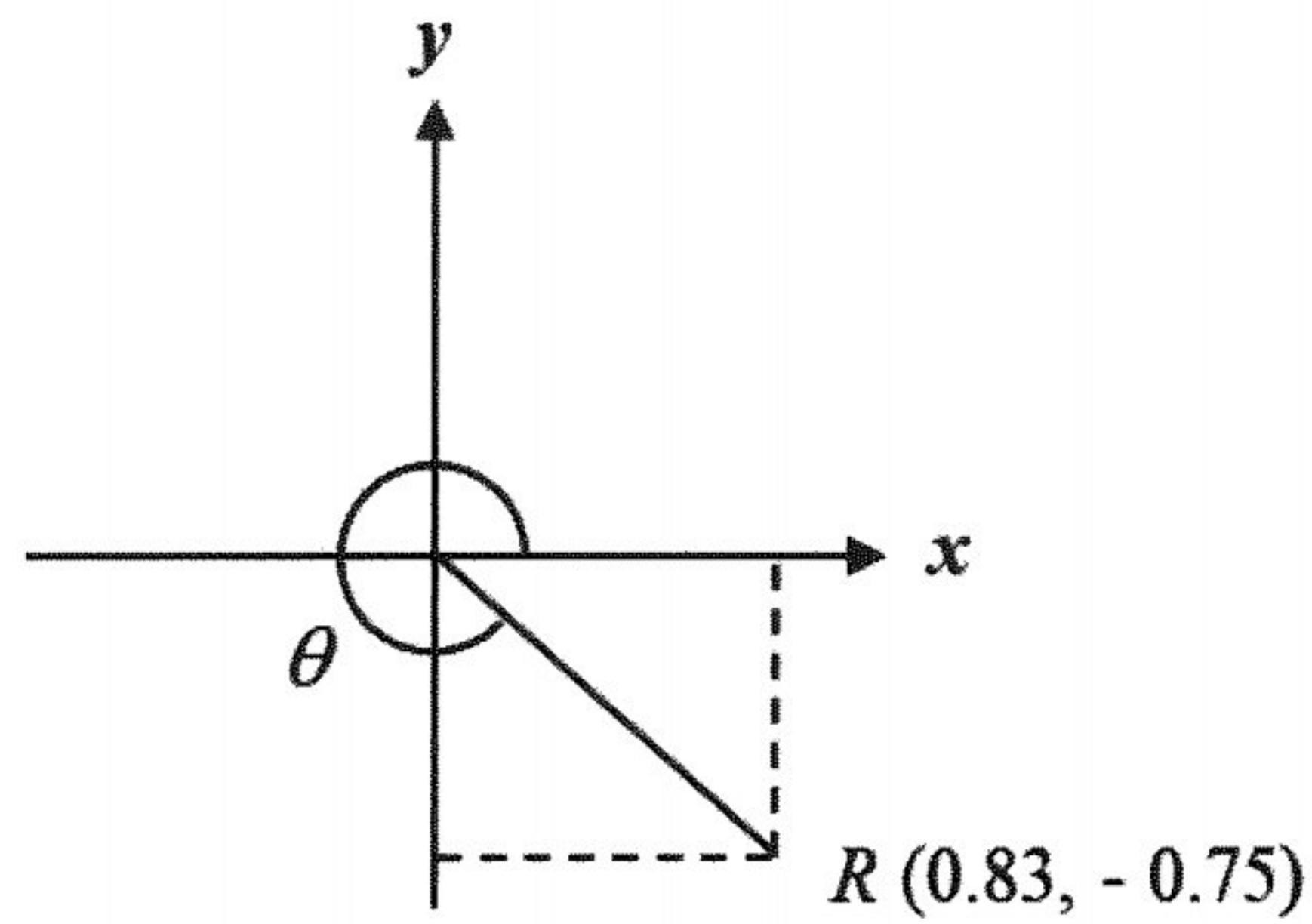
- 32 Antara poligon berikut, yang manakah boleh digunakan untuk membentuk suatu teselasi?

Which of the following polygon can be used to form a tessellation?

- A Heptagon sekata
Regular heptagon
- B Pentagon sekata
Regular pentagon
- C Segitiga sama sisi
Equilateral triangle
- D Segitiga sama kaki
Isosceles triangle

STEPS

- 33 Rajah 12 menunjukkan titik R ditandakan pada suatu satah Cartes.
Diagram 12 shows point R is marked on the Cartesian plane.



Rajah 12
Diagram 12

Hitung nilai θ .

Calculate the value of θ .

- A $303^{\circ}54'$
- B $312^{\circ}6'$
- C $317^{\circ}54'$
- D $326^{\circ}6'$

34

Jika $x = 5$, maka $x + 1 = 6$

If $x = 5$, then $x + 1 = 6$

Nyatakan kontrapositif bagi pernyataan tersebut.

State the contrapositive of the statement.

A Jika $x + 1 = 6$, maka $x = 5$

If $x + 1 = 6$, then $x = 5$

B Jika $x + 1 \neq 6$, maka $x \neq 5$

If $x + 1 \neq 6$, then $x \neq 5$

C Jika $x \neq 5$, maka $x + 1 \neq 6$

If $x \neq 5$, then $x + 1 \neq 6$

D Jika $x \neq 6$, maka $x + 1 \neq 5$

If $x \neq 6$, then $x + 1 \neq 5$

STEPS

35 Diberi bahawa :

Given that :

Set $L = \{\text{faktor bagi } 16\}$,

Set $L = \{\text{factors of } 16\}$,

Set $M = \{\text{kuasa dua sempurna yang kurang daripada } 30\}$.

Set $M = \{\text{perfect squares less than } 30\}$.

Senaraikan semua unsur bagi set $L \cap M$.

List all the elements of set $L \cap M$.

A {4, 16}

B {1, 4, 16}

C {2, 4, 8, 9, 16, 25}

D {1, 2, 4, 8, 9, 16, 25}

STEPS

[Lihat halaman sebelah

SULIT

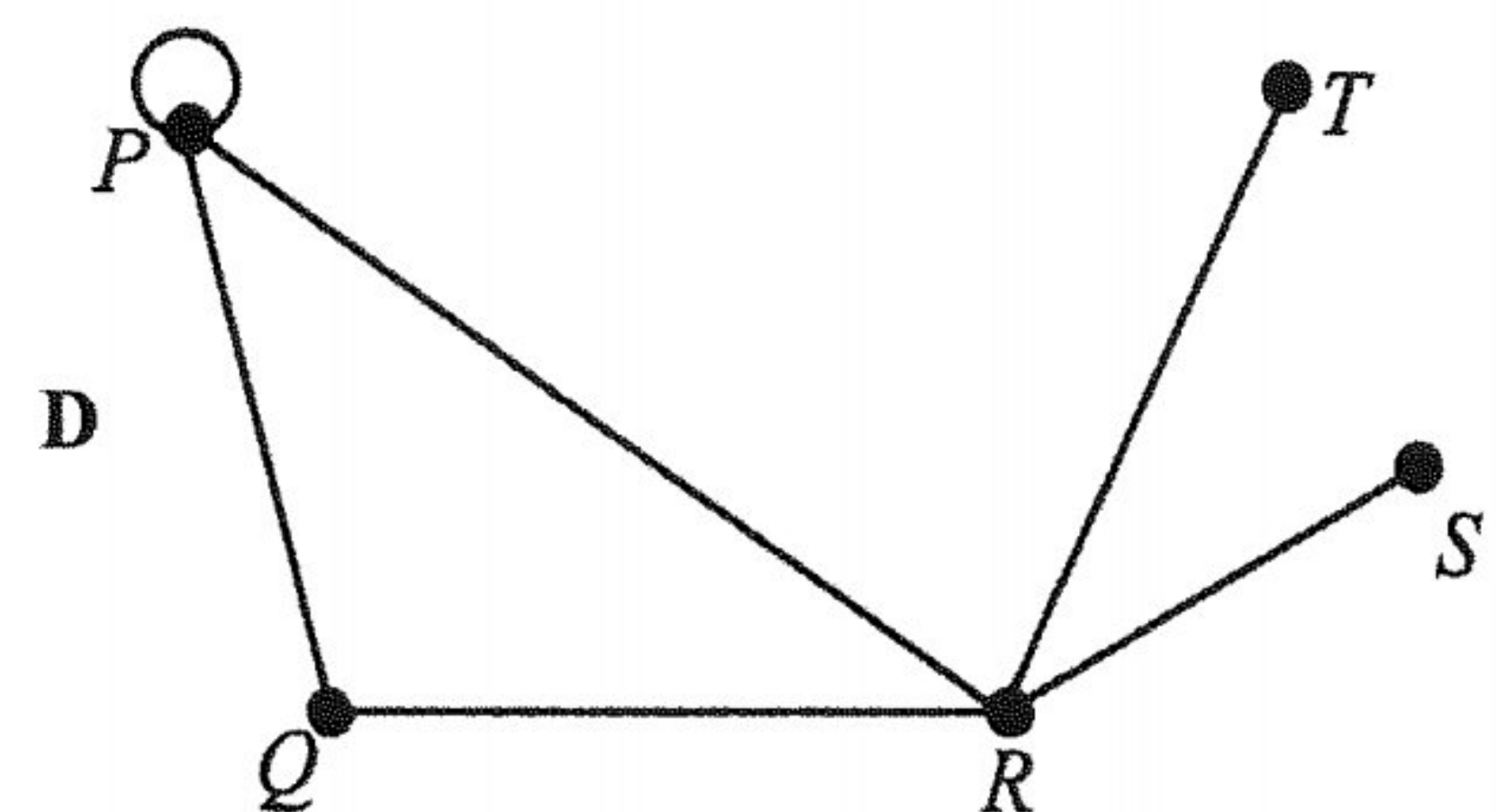
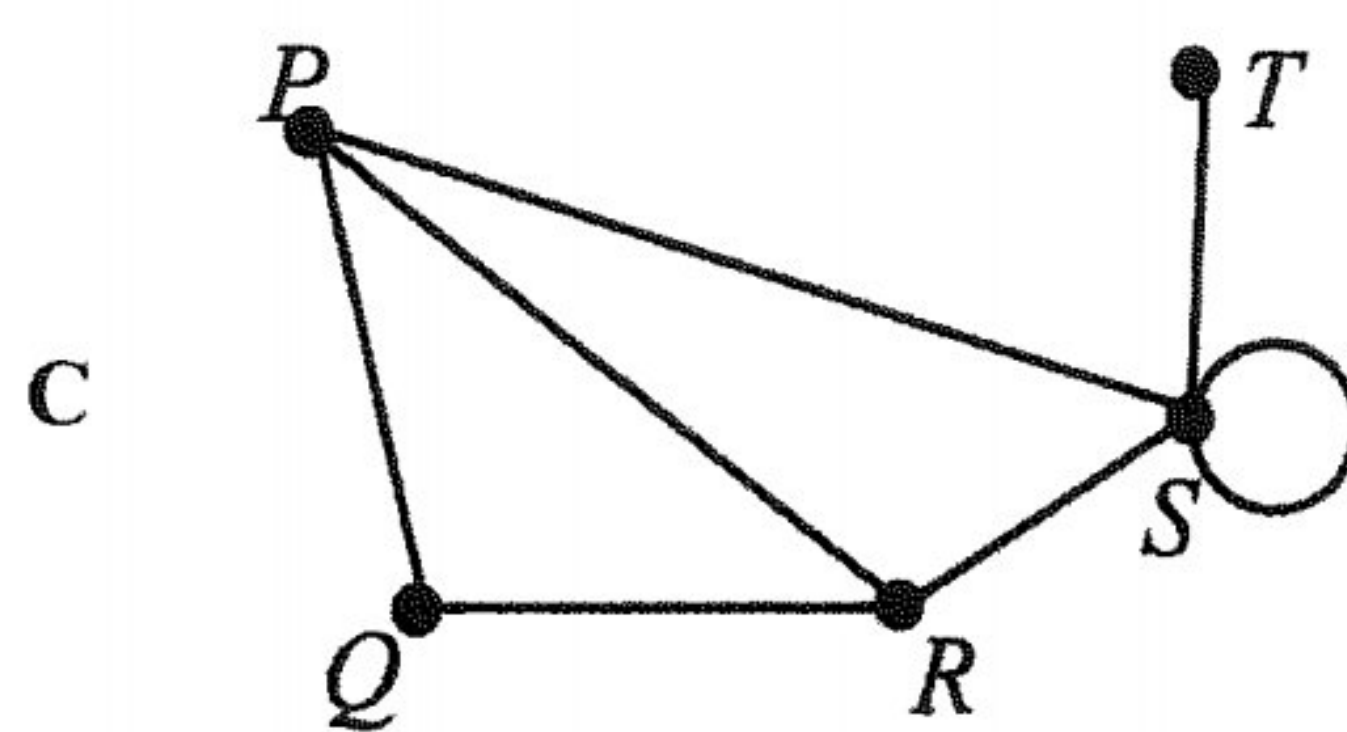
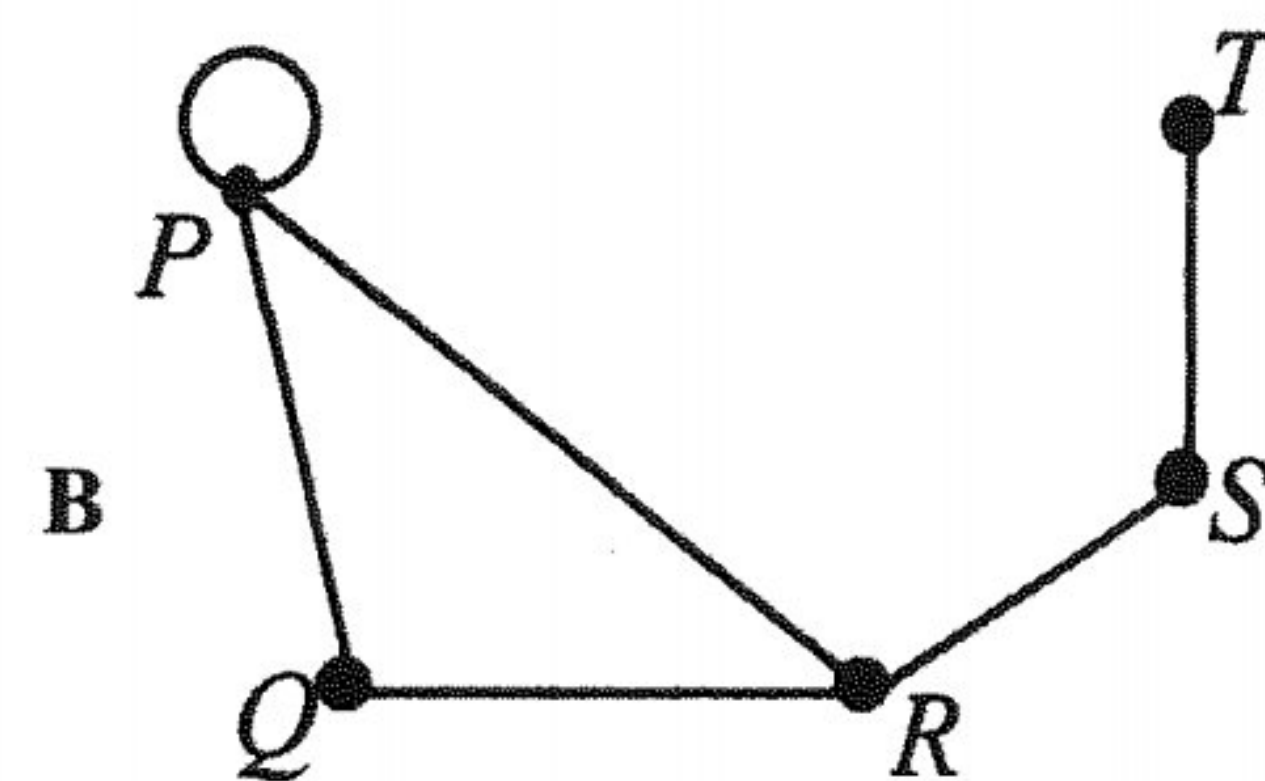
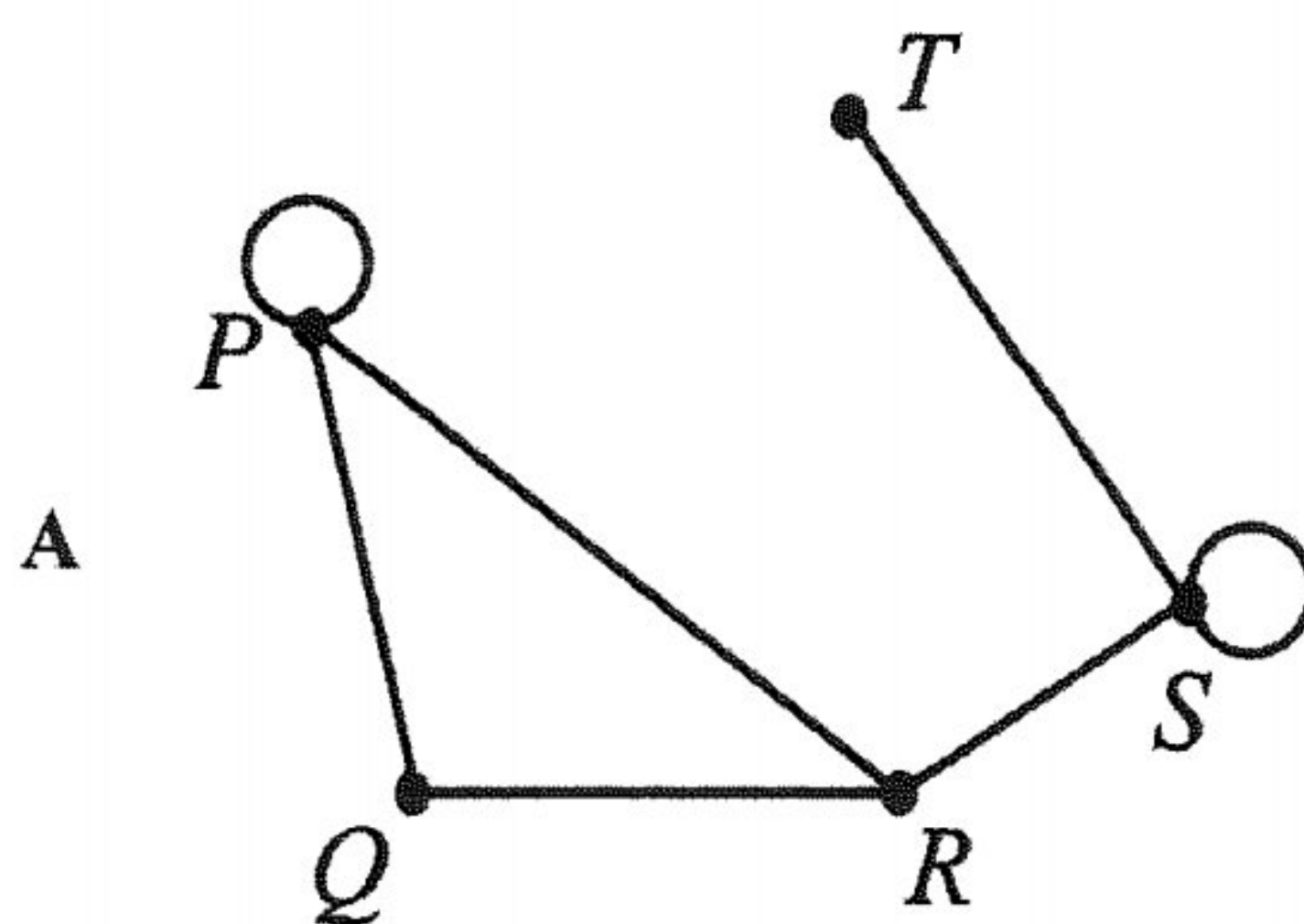
- 36 Satu graf tidak terarah yang lengkap akan dibentuk berdasarkan maklumat di bawah.

A complete undirected graph will be formed based on the information below.

$V = \{P, Q, R, S, T\}$
 $d(P) = 4,$
 $d(Q) = 2,$
 $d(R) = 3,$
 $d(S) = 4,$
 $d(T) = 1$

Graf yang manakah mewakili maklumat tersebut.

Which of the graph represents those information.



STEPS

SULIT

37 Antara berikut, yang mana adalah **benar**?

*Which of the following is **true**?*

	Data <i>Data</i>	Jenis data <i>Type of data</i>
A	Perbelanjaan bulanan <i>Monthly expenses</i>	Data kategori <i>Categorical data</i>
B	Suhu cuaca <i>Weather temperature</i>	Data kategori <i>Categorical data</i>
C	Tinggi murid <i>Height of students</i>	Data numerik <i>Numerical data</i>
D	Minuman kegemaran <i>Favourite drinks</i>	Data numerik <i>Numerical data</i>

38 Min bagi satu set data $3m$, 2, 14, 7 dan $2m + 2$ ialah n . Sekiranya setiap nilai data didarab dengan 3, kemudian ditolak dengan 5, nilai min baharu ialah 19. Cari nilai m dan nilai n .

The mean of a set of data $3m$, 2, 14, 7 and $2m + 2$ is n . If each value of data is multiplied by 3, then subtracted by 5, the new mean is 19.

Find the value of m and of n .

A $m = 14, n = 19$

B $m = 11, n = 16$

C $m = 5, n = 10$

D $m = 3, n = 8$

- 39 Terdapat 100 biji gula-gula dan beberapa batang lolipop di dalam sebuah balang. Kebarangkalian sebatang lolipop dipilih secara rawak dari balang itu ialah $\frac{1}{5}$.

Hitung bilangan lolipop di dalam balang itu.

There are 100 sweets and some lollipops in a jar. The probability of a lollipop being randomly selected from the jar is $\frac{1}{5}$. Calculate the number of lollipops in a jar.

- A 15
B 20
C 25
D 30

40
$$\begin{pmatrix} 2h & 6 \\ 4 & 2 \end{pmatrix} \begin{pmatrix} 1 \\ k \end{pmatrix} = \begin{pmatrix} 8 \\ -10 \end{pmatrix}.$$

Cari nilai h dan nilai k .

Find the value of h and of k .

- A $h = 25, k = -7$
B $h = -5, k = -3$
C $h = -18, k = -7$
D $h = 13, k = -3$

KERTAS PEPERIKSAAN TAMAT
END OF QUESTION PAPER
STEPS