

SULIT



LEMBAGA PEPERIKSAAN
KEMENTERIAN PELAJARAN MALAYSIA

SIJIL PELAJARAN MALAYSIA 2012

1449/1

MATHEMATICS

Kertas 1

Jun

$1\frac{1}{4}$ jam

Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini adalah dalam dwibahasa.*
2. *Soalan dalam bahasa Inggeris mendahului soalan yang sepadan dalam bahasa Melayu.*
3. *Calon dikehendaki membaca maklumat di halaman belakang kertas soalan ini.*

Kertas soalan ini mengandungi 33 halaman bercetak dan 3 halaman tidak bercetak.

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MATHEMATICAL FORMULAE
RUMUS MATEMATIK

The following formulae may be helpful in answering the questions. The symbols given are the ones commonly used.

Rumus-rumus berikut boleh membantu anda menjawab soalan. Simbol-simbol yang diberi adalah yang biasa digunakan.

RELATIONS
PERKAITAN

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

5 Distance / *Jarak*

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

6 Midpoint / *Titik tengah*

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

7 Average speed = $\frac{\text{distance travelled}}{\text{time taken}}$

$$\text{Purata laju} = \frac{\text{jarak yang dilalui}}{\text{masa yang diambil}}$$

8 Mean = $\frac{\text{sum of data}}{\text{number of data}}$

$$\text{Min} = \frac{\text{hasil tambah nilai data}}{\text{bilangan data}}$$

9 Mean = $\frac{\text{sum of (classmark} \times \text{frequency)}}{\text{sum of frequencies}}$

$$\text{Min} = \frac{\text{hasil tambah (nilai titik tengah kelas} \times \text{kekerapan)}}{\text{hasil tambah kekerapan}}$$

10 Pythagoras Theorem
Teorem Pithagoras

$$c^2 = a^2 + b^2$$

11 $P(A) = \frac{n(A)}{n(S)}$

12 $P(A') = 1 - P(A)$

13 $m = \frac{y_2 - y_1}{x_2 - x_1}$

14 $m = -\frac{y\text{-intercept}}{x\text{-intercept}}$

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

**SHAPES AND SPACE
BENTUK DAN RUANG**

1 Area of trapezium = $\frac{1}{2} \times \text{sum of parallel sides} \times \text{height}$

Luas trapezium = $\frac{1}{2} \times \text{hasil tambah sisi selari} \times \text{tinggi}$

2 Circumference of circle = $\pi d = 2\pi r$

Lilitan bulatan = $\pi d = 2\pi r$

3 Area of circle = πr^2

Luas bulatan = πr^2

4 Curved surface area of cylinder = $2\pi rh$

Luas permukaan melengkung silinder = $2\pi r h$

5 Surface area of sphere = $4\pi r^2$

Luas permukaan sfera = $4\pi r^2$

6 Volume of right prism = cross sectional area \times length

Isi padu prisma tegak = *luas keratan rentas* \times *panjang*

7 Volume of cylinder = $\pi r^2 h$

Isi padu silinder = $\pi r^2 h$

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

Isi padu kon = $\frac{1}{3} \pi r^2 h$

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

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

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

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

11 Sum of interior angles of a polygon

Hasil tambah sudut pedalaman poligon

= $(n - 2) \times 180^\circ$

$$12 \quad \frac{\text{arc length}}{\text{circumference of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$$

$$\frac{\text{panjang lengkok}}{\text{lilitan bulatan}} = \frac{\text{sudut pusat}}{360^\circ}$$

$$13 \quad \frac{\text{area of sector}}{\text{area of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$$

$$\frac{\text{luas sektor}}{\text{luas bulatan}} = \frac{\text{sudut pusat}}{360^\circ}$$

$$14 \quad \text{Scale factor, } k = \frac{PA'}{PA}$$

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

$$15 \quad \text{Area of image} = k^2 \times \text{area of object}$$
$$\text{Luas imej} = k^2 \times \text{luas objek}$$

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HALAMAN KOSONG

- 1 Round off 0.07648 correct to three significant figures.
Bundarkan 0.07648 betul kepada tiga angka bererti.
- A 0.076
B 0.077
C 0.0764
D 0.0765
- 2 Express 3.16×10^{-7} as a single number.
Ungkapkan 3.16×10^{-7} sebagai satu nombor tunggal.
- A 0.000000316
B 0.0000316
C 3 160 000
D 31 600 000
- 3 $0.003 \times 20 \times 10^{-5} =$
- A 6×10^{-6}
B 6×10^{-7}
C 6×10^{-8}
D 6×10^{-9}

- 4 A piece of land has an area of $2.76 \times 10^6 \text{ m}^2$. It is given that 1 m^2 of land cost RM15.

Find the cost of $\frac{1}{3}$ of the area of the land.

Sebidang tanah mempunyai keluasan $2.76 \times 10^6 \text{ m}^2$. Diberi bahawa 1 m^2 tanah itu berharga RM15.

Cari harga $\frac{1}{3}$ daripada keluasan tanah itu.

- A RM13.8 million
RM13.8 juta
- B RM41.4 million
RM41.4 juta
- C RM138 million
RM138 juta
- D RM414 million
RM414 juta

- 5 It is given that $1001_2 = 1 \times 8^n + 1$.
Find the value of n .

Diberi bahawa $1001_2 = 1 \times 8^n + 1$.

Cari nilai n .

- A 1
- B 2
- C 3
- D 4

6 $110_2 + 1100_2 =$

A 10000_2

B 10010_2

C 11000_2

D 11110_2

- 7 In Diagram 1, $PQRSTUV$ is a polygon. QRW is a straight line and parallel to UT .
 Dalam Rajah 1, $PQRSTUV$ ialah sebuah poligon. QRW ialah garis lurus dan selari dengan UT .

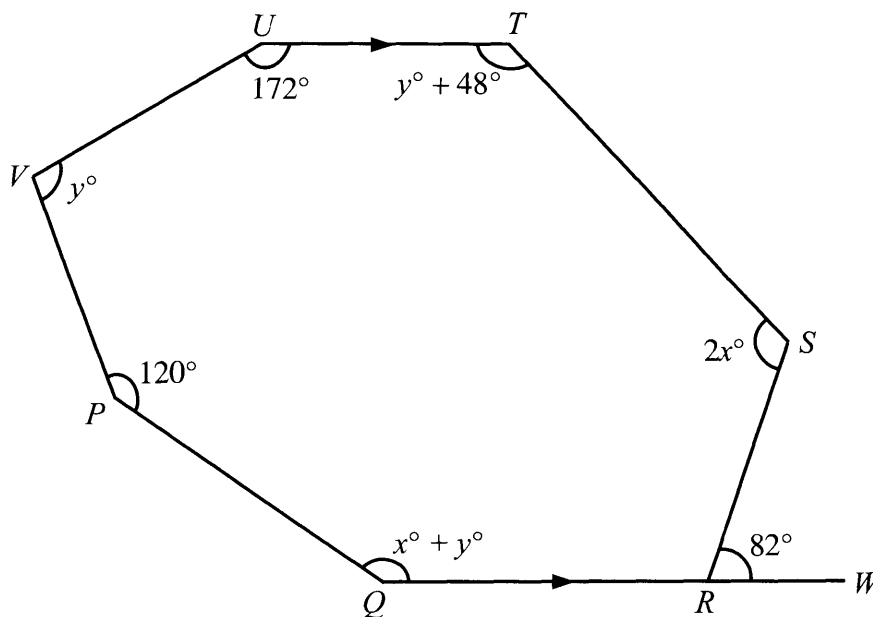


Diagram 1
Rajah 1

Find the value of $x + y$.

Cari nilai $x + y$.

A 94

B 148

C 154

D 166

- 8 In Diagram 2, $PQRSTU$ is a regular hexagon and VPQ is a straight line.
Dalam Rajah 2, $PQRSTU$ ialah heksagon sekata dan VPQ ialah garis lurus.

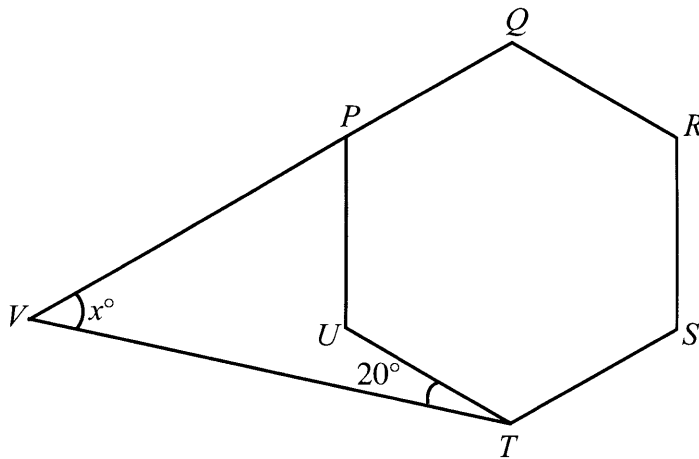


Diagram 2
Rajah 2

Find the value of x .

Cari nilai x .

- A 36
- B 40
- C 52
- D 60

- 9 In Diagram 3, PQR is a tangent to the circle $QSTU$ with centre O , at point Q .
 Dalam Rajah 3, PQR ialah tangen kepada bulatan $QSTU$ berpusat O , di titik Q .

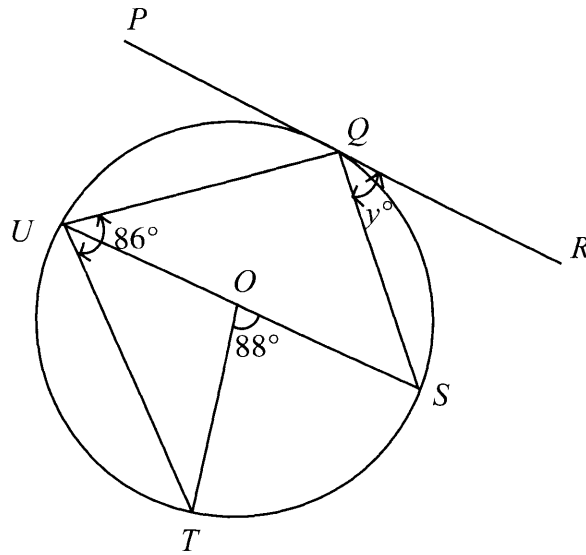


Diagram 3
Rajah 3

Find the value of y .

Cari nilai y .

- A 42
- B 43
- C 44
- D 45

10 Diagram 4 shows two triangles, P and Q , drawn on a grid of equal squares.

Rajah 4 menunjukkan dua segi tiga, P dan Q , dilukis pada grid segi empat sama yang sama besar.

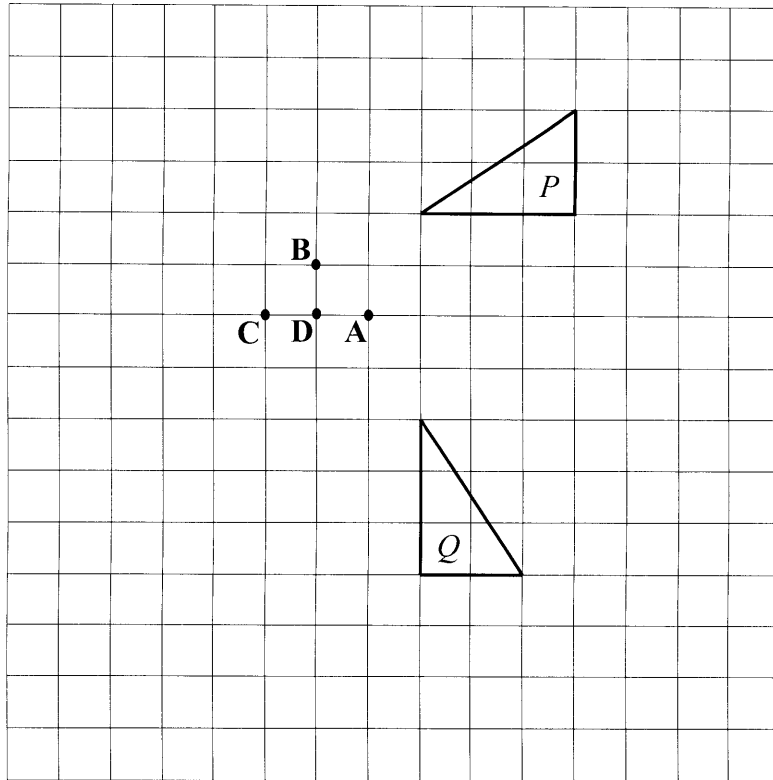


Diagram 4
Rajah 4

Triangle Q is the image of triangle P under a clockwise rotation of 90° .

Which of the points, A , B , C or D , is the centre of the rotation?

Segi tiga Q adalah imej bagi segi tiga P di bawah putaran 90° ikut arah jam.

Antara titik A , B , C dan D , yang manakah pusat putaran itu?

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- 11 Diagram 5 shows a straight line, TR drawn on a Cartesian plane. Point T is the image of point $R(3, 8)$ under a translation $\begin{pmatrix} h \\ k \end{pmatrix}$.

Rajah 5 menunjukkan suatu garis lurus, TR dilukis pada satu satah Cartesian.

Titik T ialah imej bagi titik $R(3, 8)$ di bawah satu translasi $\begin{pmatrix} h \\ k \end{pmatrix}$.

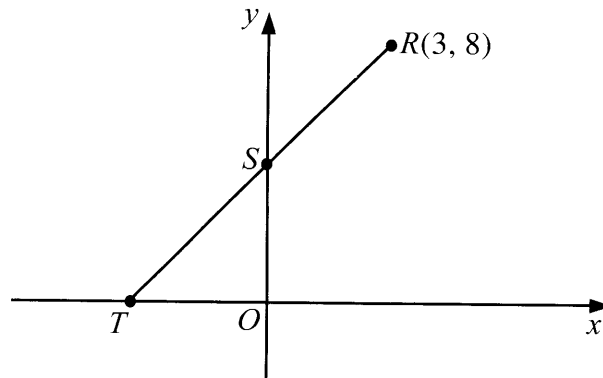


Diagram 5
Rajah 5

Given S is a midpoint of TR , find $\begin{pmatrix} h \\ k \end{pmatrix}$.

Diberi S ialah titik tengah TR , cari $\begin{pmatrix} h \\ k \end{pmatrix}$.

A $\begin{pmatrix} 6 \\ 8 \end{pmatrix}$

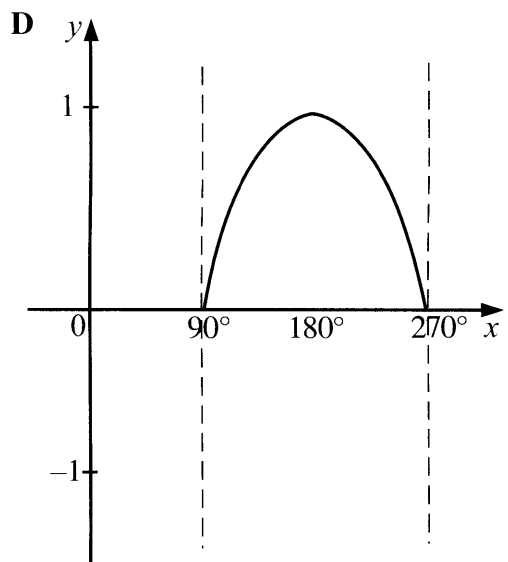
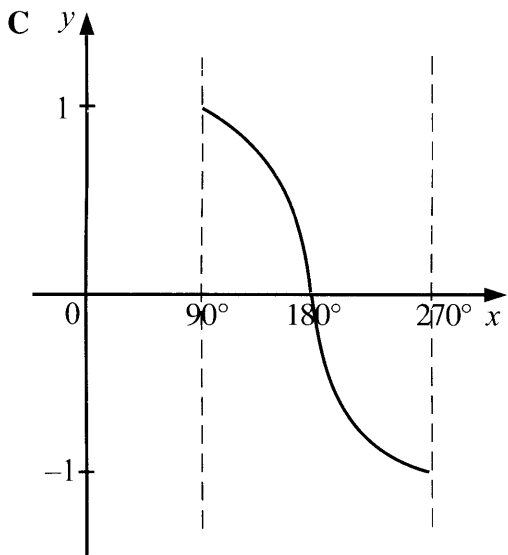
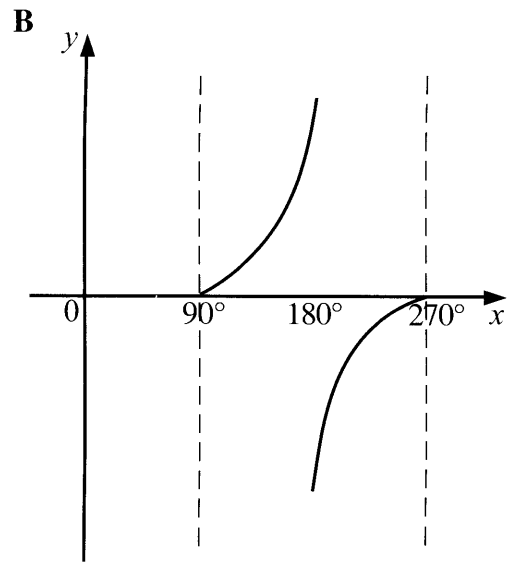
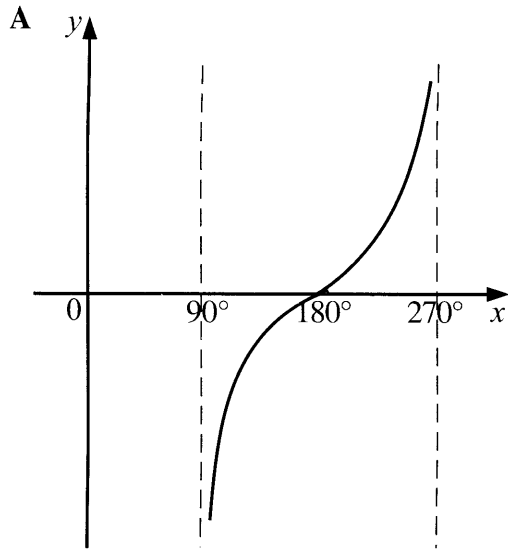
B $\begin{pmatrix} 3 \\ 8 \end{pmatrix}$

C $\begin{pmatrix} -3 \\ -8 \end{pmatrix}$

D $\begin{pmatrix} -6 \\ -8 \end{pmatrix}$

12 Which graph represents $y = \tan x$ for $90^\circ \leq x \leq 270^\circ$?

Graf manakah yang mewakili $y = \tan x$ bagi $90^\circ \leq x \leq 270^\circ$?



- 13 Diagram 6 shows five polygons, *P*, *A*, *B*, *C* and *D*, drawn on a grid of equal squares. *Rajah 6* menunjukkan lima poligon, *P*, *A*, *B*, *C* dan *D*, yang dilukis pada grid segi empat sama yang sama besar.

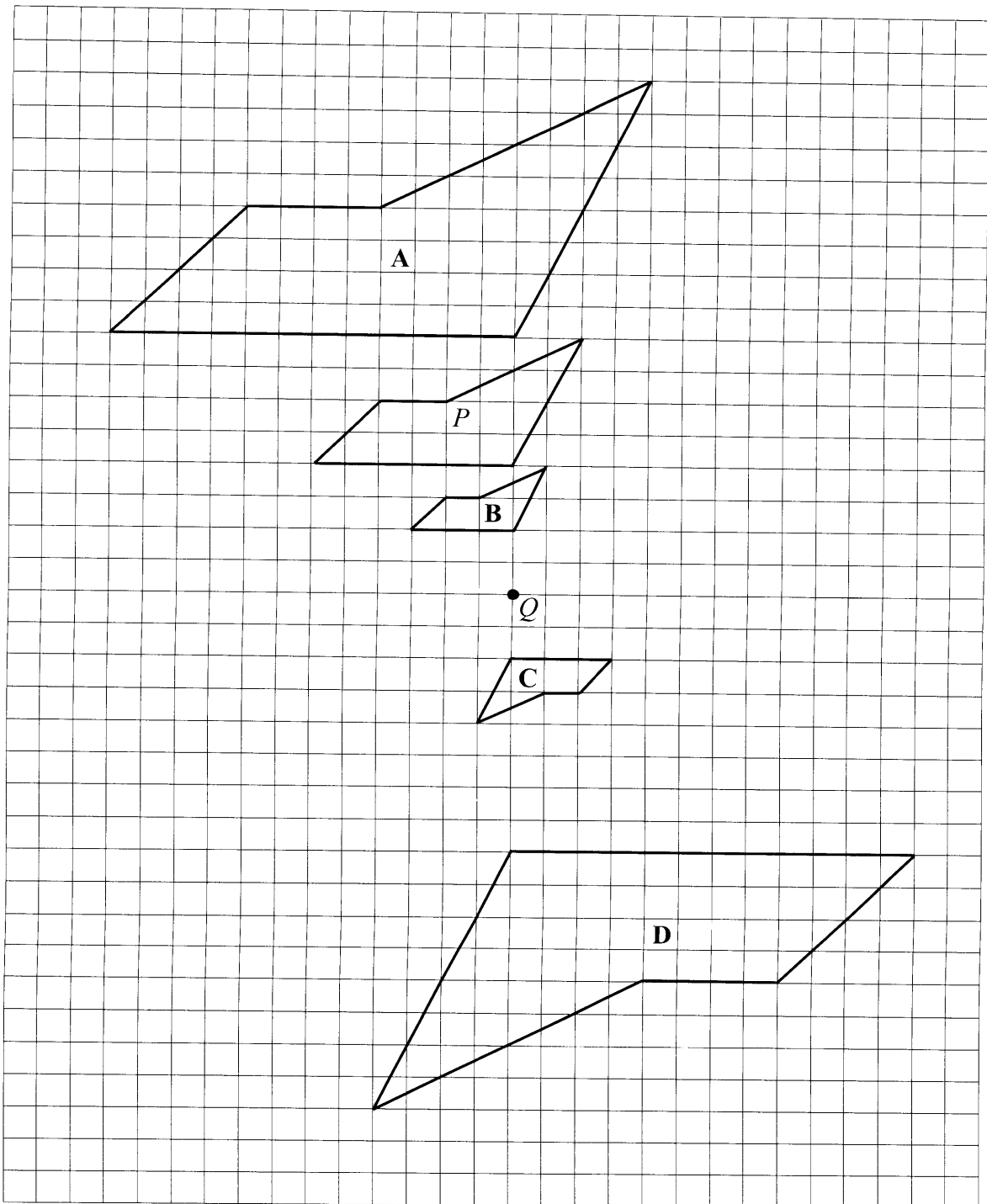


Diagram 6
Rajah 6

Which of the polygons, **A**, **B**, **C** or **D**, is the image of polygon P under an enlargement with centre Q and scale factor $\frac{1}{2}$?

*Antara poligon **A**, **B**, **C** dan **D**, yang manakah imej bagi poligon P di bawah suatu pembesaran dengan pusat Q dan faktor skala $\frac{1}{2}$?*

- 14** In Diagram 7, QUP and QTR are right angled triangles and QRS is a straight line.
Dalam Rajah 7, QUP dan QTR ialah segi tiga bersudut tegak dan QRS ialah garis lurus.

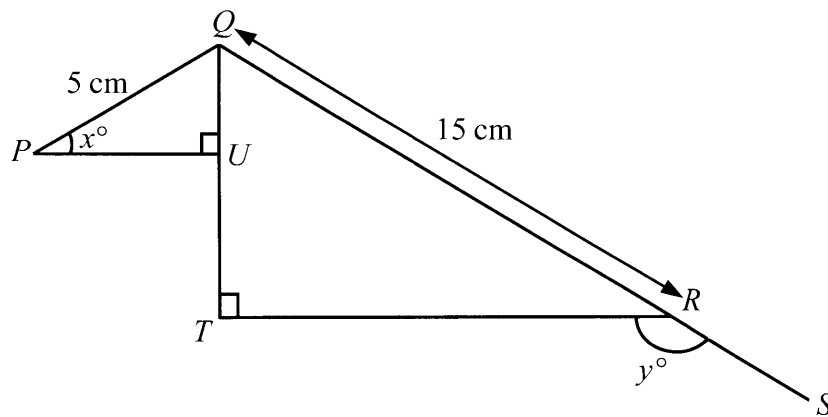


Diagram 7
Rajah 7

Given $\tan x^\circ = \frac{3}{4}$ and $\sin y^\circ = \frac{4}{5}$, find the length, in cm, of UT .

Diberi $\tan x^\circ = \frac{3}{4}$ dan $\sin y^\circ = \frac{4}{5}$, cari panjang, dalam cm, bagi UT .

- A** 4
- B** 6
- C** 8
- D** 9

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15 Diagram 8 shows a right prism with a rectangular base $PQRS$.

Rajah 8 menunjukkan sebuah prisma tegak dengan tapak segi empat tepat PQRS.

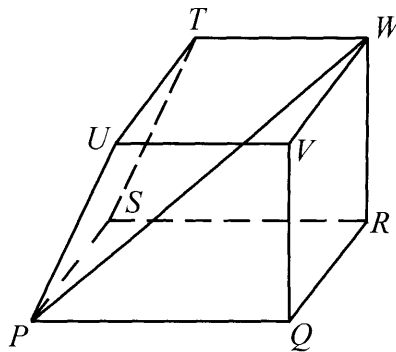


Diagram 8
Rajah 8

Name the angle between the line PW and the plane $RSTW$.

Namakan sudut di antara garis PW dengan satah $RSTW$.

- A $\angle PWR$
- B $\angle PWS$
- C $\angle WPR$
- D $\angle WPS$

- 16 Diagram 9 shows two vertical poles, PQ and UT , on the horizontal ground. Given that the angle of depression of point P from point U is 42° .

Rajah 9 menunjukkan dua tiang tegak, PQ dan UT , yang terletak pada tanah mengufuk. Diberi bahawa sudut tunduk titik P dari titik U ialah 42° .

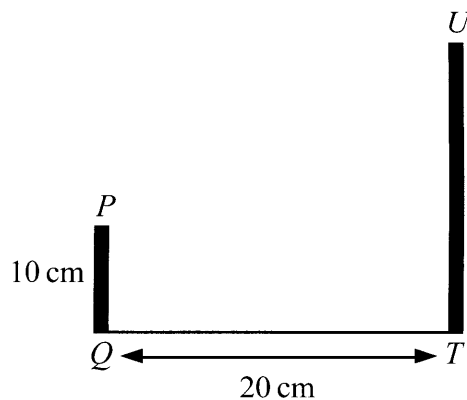


Diagram 9
Rajah 9

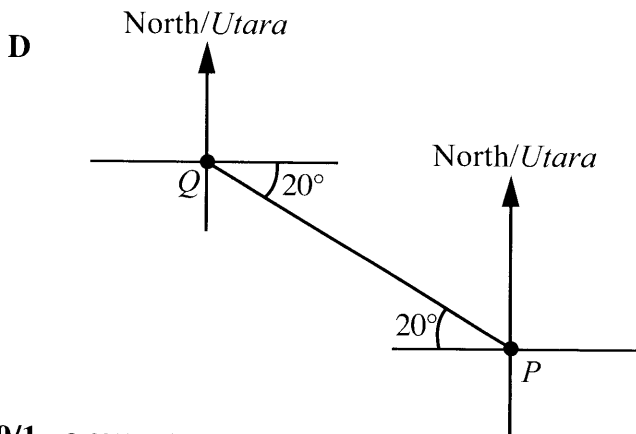
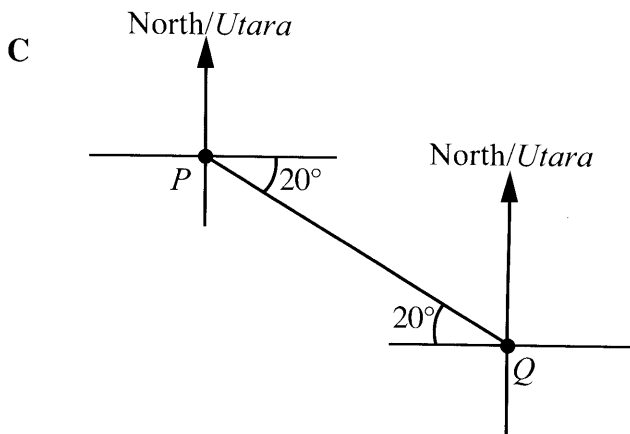
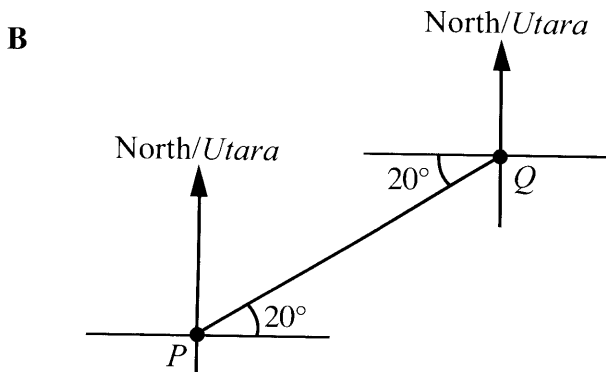
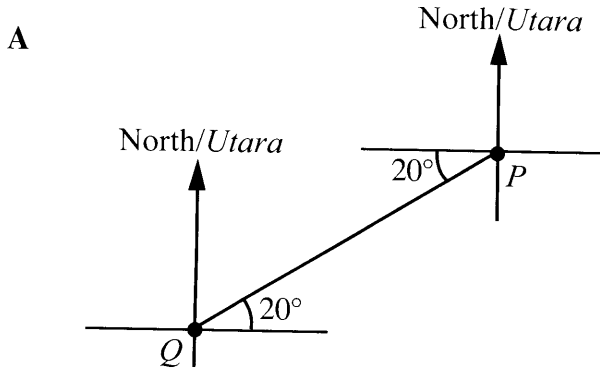
Calculate the height, in cm, of UT .

Hitung tinggi, dalam cm, bagi UT .

- A 23.38
- B 24.86
- C 28.01
- D 32.21

17 Points P and Q lie on a horizontal plane. The bearing of P from Q is 070° . Which diagram shows the positions of P and Q ?

Titik P dan titik Q terletak pada satah mengufuk. Bearing P dari Q ialah 070° . Antara rajah berikut, yang manakah menunjukkan kedudukan P dan Q ?



- 18 $P(50^\circ S, 120^\circ E)$ and Q are two points on the earth.

Given PQ is the diameter of the earth, find the location of Q .

$P(50^\circ S, 120^\circ E)$ dan Q adalah dua titik pada permukaan bumi.

Diberi PQ ialah diameter bumi, cari kedudukan Q .

- A $(50^\circ S, 60^\circ E)$
 $(50^\circ S, 60^\circ T)$
- B $(50^\circ S, 60^\circ W)$
 $(50^\circ S, 60^\circ B)$
- C $(50^\circ N, 60^\circ E)$
 $(50^\circ U, 60^\circ T)$
- D $(50^\circ N, 60^\circ W)$
 $(50^\circ U, 60^\circ B)$

- 19 Express $\frac{p^2 - q^2}{mn} \div (p - q)$ as a single fraction in its simplest form.

Ungkapkan $\frac{p^2 - q^2}{mn} \div (p - q)$ sebagai satu pecahan tunggal dalam bentuk termudah.

- A $\frac{p+q}{mn}$
- B $\frac{p-q}{mn}$
- C $\frac{mn}{p+q}$
- D $\frac{mn}{p-q}$

- 20 Given $\frac{3}{2}mn - m = 2nk$, express n in terms of m and k .

Diberi $\frac{3}{2}mn - m = 2nk$, ungkapkan n dalam sebutan m dan k .

A $n = \frac{m}{3m - k}$

B $n = \frac{m}{3m - 4k}$

C $n = \frac{2m}{3m - 2k}$

D $n = \frac{2m}{3m - 4k}$

- 21 Solve the linear equation $\frac{3(2x-1)}{3-x} = 4$.

Selesaikan persamaan linear bagi $\frac{3(2x-1)}{3-x} = 4$.

A $\frac{13}{7}$

B $\frac{5}{3}$

C $\frac{3}{2}$

D $\frac{13}{10}$

22 Simplify:

Ringkaskan:

$$\left(hg^{\frac{1}{3}}\right)^3 \times (hg^2)^2$$

A h^2g^5

B h^3g^3

C h^5g^3

D h^5g^5

23 $\left(\frac{1}{a^m}\right)^n =$

A $\sqrt[m]{a^n}$

B $\sqrt[n]{a^m}$

C $\frac{1}{\sqrt[m]{a^n}}$

D $\frac{1}{\sqrt[n]{a^m}}$

24 Solve $\frac{1}{3}(x+5) < x-7$.

Selesaikan $\frac{1}{3}(x+5) < x-7$.

A $x > 18$

B $x > 13$



C $x > 6$

D $x > 3$

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- 25 Diagram 10 is a pictogram which shows the number of balls sold in May and July. The number of balls sold in June and August are not shown.

Rajah 10 ialah piktogram yang menunjukkan bilangan bola yang dijual dalam bulan Mei dan Julai. Bilangan bola yang dijual dalam bulan Jun dan Ogos tidak ditunjukkan.

May Mei	
June Jun	
July Julai	
August Ogos	



represents 10 balls
mewakili 10 bola

Diagram 10
Rajah 10

The number of balls sold in June was three times the number of balls sold in August. A total of 200 balls were sold in those four months.

Find the percentage of the number of balls sold in June.

Bilangan bola dijual dalam bulan Jun adalah tiga kali daripada bilangan bola dijual dalam bulan Ogos. Sejumlah 200 bola telah dijual dalam empat bulan itu.

Cari peratusan bilangan bola yang dijual dalam bulan Jun.

- A 10%
- B 20%
- C 30%
- D 50%

- 26 Diagram 11 is an incomplete bar chart showing the number of children for some families in Taman Saga. The bar representing the number of families with two children is not shown.

Rajah 11 ialah carta palang yang tidak lengkap menunjukkan bilangan anak bagi sebilangan keluarga di Taman Saga. Palang yang mewakili bilangan keluarga yang mempunyai dua orang anak tidak ditunjukkan.

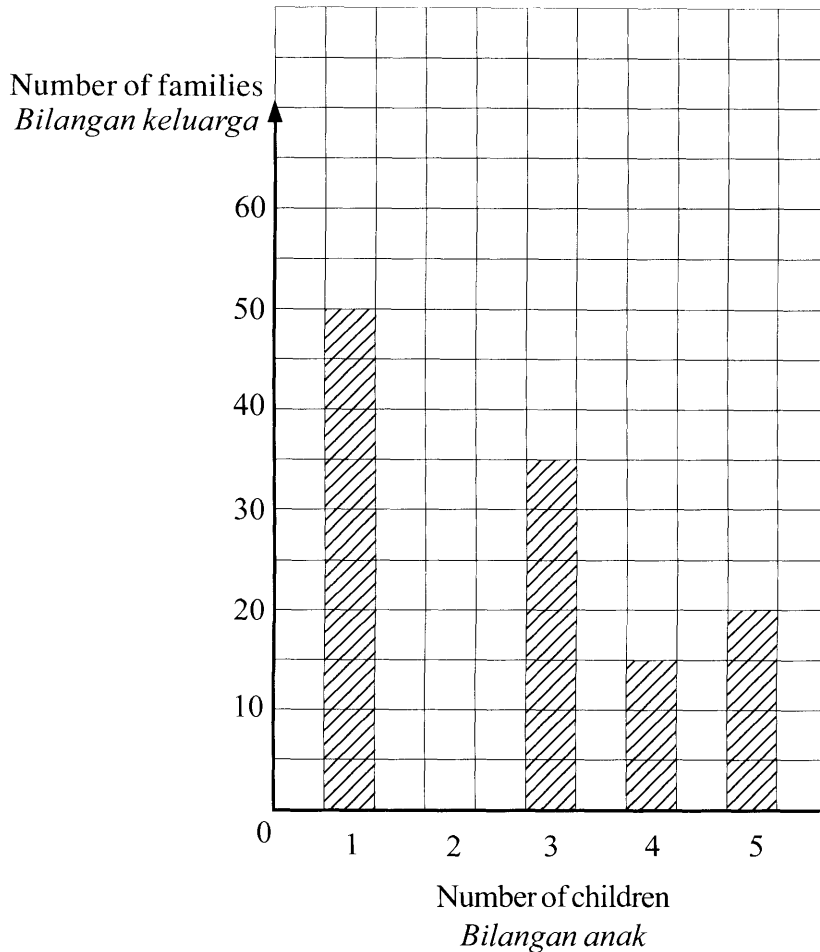


Diagram 11
Rajah 11

The number of families with four children is 10% of the total number of families.

Find the ratio of the number of families with two children to the number of families with five children.

Bilangan keluarga yang mempunyai empat orang anak ialah 10% daripada jumlah semua keluarga.

Cari nisbah bilangan keluarga yang mempunyai dua orang anak kepada bilangan keluarga yang mempunyai lima orang anak.

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

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- 27 Diagram 12 shows two jars, P and Q . The number of numbered balls to be filled in jar Q is twice the frequency of the mode of the numbered balls in jar P .

Rajah 12 menunjukkan dua balang, P dan Q . Bilangan bola bernombor yang akan dimasukkan ke dalam balang Q adalah dua kali kekerapan bagi mod bola bernombor dalam balang P .

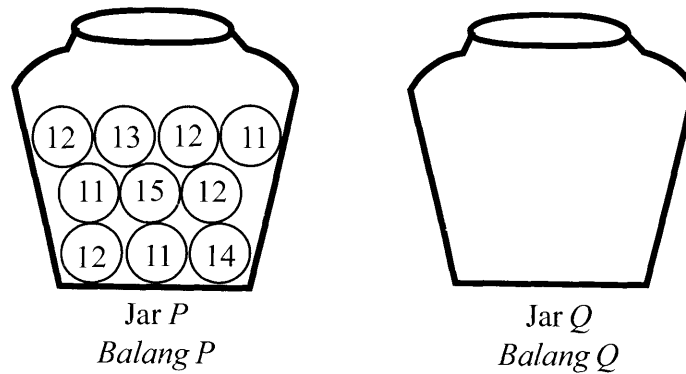


Diagram 12
Rajah 12

Find the total number of balls in jars P and Q .

Cari jumlah bilangan bola dalam balang P dan Q .

- A 16
- B 18
- C 30
- D 34

28 Diagram 13 shows a graph of $y = ax^n - 8$.

Rajah 13 menunjukkan graf $y = ax^n - 8$.

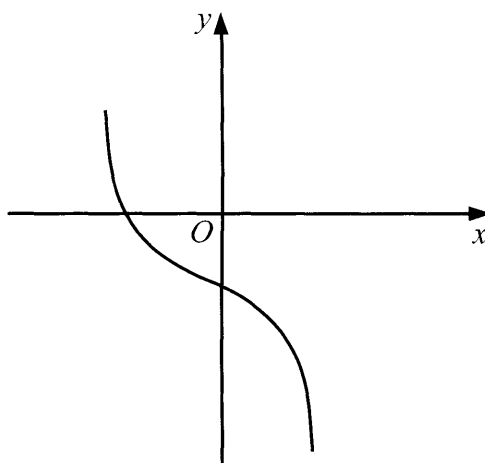


Diagram 13
Rajah 13

Which of the following are the values of a and of n ?

Antara yang berikut, yang manakah nilai a dan nilai n ?

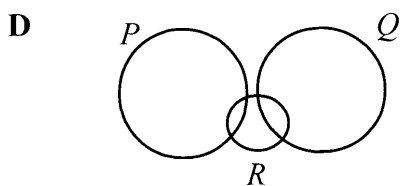
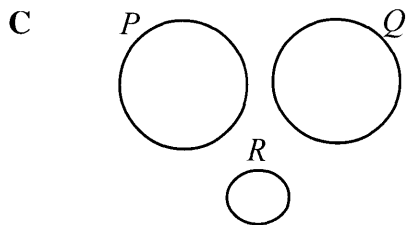
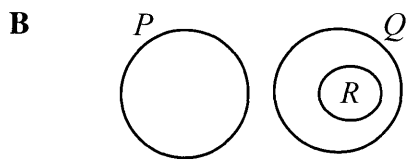
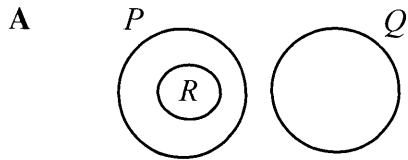
- A $a = -1$, $n = 2$
- B $a = 1$, $n = 2$
- C $a = -1$, $n = 3$
- D $a = 1$, $n = 3$

29 It is given that the universal set, $\xi = P \cup Q \cup R$, $R \subset P'$ and $R \subset Q'$.

Which of the following Venn diagram, shows the relation between sets P , Q and R ?

Diberi bahawa set semesta, $\xi = P \cup Q \cup R$, $R \subset P'$ dan $R \subset Q'$.

Antara gambar rajah Venn berikut, yang manakah menunjukkan hubungan antara set P , set Q dan set R ?



- 30 It is given that the universal set, $\xi = \{1, 2, 3, 4, 5, 6, 7, 8\}$, $P = \{1, 2, 3, 4\}$, $Q = \{3, 4, 5, 6\}$ and $R = \{1, 4, 8\}$.

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

Diberi bahawa set semesta, $\xi = \{1, 2, 3, 4, 5, 6, 7, 8\}$, $P = \{1, 2, 3, 4\}$, $Q = \{3, 4, 5, 6\}$ dan $R = \{1, 4, 8\}$.

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

- A 2
 B 4
 C 6
 D 7
- 31 Diagram 14 is a Venn diagram showing the sets F and H such that the universal set, $\xi = F \cup H$. Set $F = \{\text{Students who play football}\}$ and set $H = \{\text{Students who play hockey}\}$.

Rajah 14 ialah gambar rajah Venn yang menunjukkan set F dan set H dengan keadaan set semesta, $\xi = F \cup H$. Set $F = \{\text{Murid yang bermain bola sepak}\}$ dan set $H = \{\text{Murid yang bermain hoki}\}$.

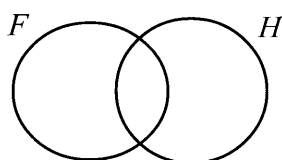


Diagram 14
 Rajah 14

It is given that $n(\xi) = 30$, $n(F) = 14$ and $n(H) = 21$.

Find the number of students who play hockey only.

Diberi bahawa $n(\xi) = 30$, $n(F) = 14$ dan $n(H) = 21$.

Cari bilangan murid yang bermain hoki sahaja.

- A 7
 B 9
 C 16
 D 19

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- 32 Diagram 15 shows two straight lines, JM and KN . It is given that $KN = 13$ cm and K is the midpoint of OJ .

Rajah 15 menunjukkan dua garis lurus JM dan KN . Diberi bahawa $KN = 13$ cm dan K ialah titik tengah OJ .

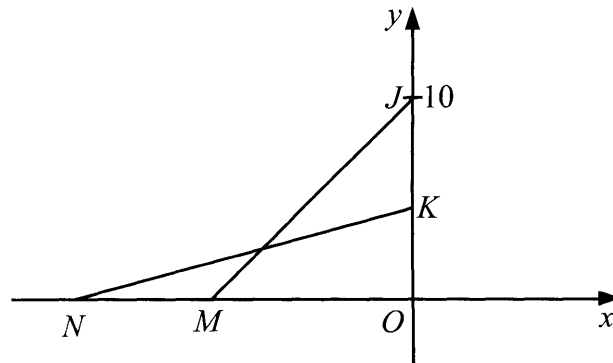


Diagram 15
Rajah 15

Find the gradient of KN .

Cari kecerunan KN .

- A $-\frac{12}{5}$
 B $-\frac{5}{12}$
 C $\frac{12}{5}$
 D $\frac{5}{12}$

- 33 A straight line passes through points $(1, 8)$ and $(4, 2)$.

Find the y -intercept of the straight line.

Suatu garis lurus melalui titik $(1, 8)$ dan $(4, 2)$.

Cari pintasan- y bagi garis lurus itu.

- A 4
 B 5
 C 8
 D 10

- 34 A box contains 36 books. There are 4 Mathematics books and a number of History and Science books in the box. The probability that a Science book is chosen at random is $\frac{2}{3}$.

Find the probability that a History book is chosen.

Sebuah kotak mengandungi 36 buah buku. Terdapat 4 buah buku Matematik dan beberapa buah buku Sejarah dan Sains di dalam kotak itu. Kebarangkalian sebuah buku Sains dipilih secara rawak ialah $\frac{2}{3}$.

Cari kebarangkalian sebuah buku Sejarah dipilih.

A $\frac{2}{9}$

B $\frac{1}{3}$

C $\frac{2}{3}$

D $\frac{7}{9}$

- 35 A box contains 24 red marbles and a number of yellow marbles. The probability that a yellow marble is chosen at random is $\frac{1}{4}$.

Calculate the total number of marbles in the box.

Sebuah kotak mengandungi 24 biji guli merah dan beberapa biji guli kuning.

Kebarangkalian sebiji guli kuning dipilih secara rawak ialah $\frac{1}{4}$.

Hitung jumlah bilangan guli yang terdapat dalam kotak itu.

A 25

B 30

C 32

D 42

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- 36 The relationship between two variables x and y is shown in the equation $\frac{y}{\sqrt{x}} = 2$.

State the relationship of x and y in words.

Hubungan antara dua pembolehubah x dan y ditunjukkan oleh persamaan $\frac{y}{\sqrt{x}} = 2$.

Nyatakan hubungan antara x dan y dalam perkataan.

- A** y varies directly as \sqrt{x}
 y berubah secara langsung dengan \sqrt{x}
- B** y varies directly as x^2
 y berubah secara langsung dengan x^2
- C** y varies inversely as \sqrt{x}
 y berubah secara songsang dengan \sqrt{x}
- D** y varies inversely as x^2
 y berubah secara songsang dengan x^2
- 37 Table 1 shows some values of the variables x and y . It is given that $y \propto \frac{1}{\sqrt{x}}$.

Jadual 1 menunjukkan sebahagian pembolehubah x dan y . Diberi bahawa $y \propto \frac{1}{\sqrt{x}}$.

y	3	2
x	4	n

Table 1
Jadual 1

Calculate the value of n .

Hitung nilai n .

- A** $\frac{9}{16}$
- B** $\frac{16}{9}$
- C** 6
- D** 9

- 38 Given that P varies directly with R and inversely with the square of Q and $P = \frac{3}{4}$,
 $Q = 2$ when $R = 5$.

Find the relation between P , Q and R .

Diberi bahawa P berubah secara langsung dengan R dan secara songsang dengan

kuasa dua Q dan $P = \frac{3}{4}$, $Q = 2$ apabila $R = 5$.

Cari hubungan antara P , Q dan R .

A $P = \frac{3R}{5Q^2}$

B $P = \frac{15R}{16Q^2}$

C $P = \frac{3Q^2}{5R}$

D $P = \frac{15Q^2}{16R}$

- 39 Given $\begin{pmatrix} 1 & 5 \\ 2 & 4 \end{pmatrix} \begin{pmatrix} 3 \\ 2 \end{pmatrix} = \begin{pmatrix} m & 4 \\ 0 & -7 \end{pmatrix} \begin{pmatrix} 1 \\ -2 \end{pmatrix}$, find the value of m .

Diberi $\begin{pmatrix} 1 & 5 \\ 2 & 4 \end{pmatrix} \begin{pmatrix} 3 \\ 2 \end{pmatrix} = \begin{pmatrix} m & 4 \\ 0 & -7 \end{pmatrix} \begin{pmatrix} 1 \\ -2 \end{pmatrix}$, cari nilai m .

- A 7
B 8
C 14
D 21

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40 Given:

Diberi:

$$A = \begin{pmatrix} -1 & 2 \\ 3 & 1 \end{pmatrix}$$

Find the product of A^2 .

Cari hasil darab A^2 .

A $\begin{pmatrix} -2 & 6 \\ 6 & 3 \end{pmatrix}$

B $\begin{pmatrix} -2 & 4 \\ 6 & 2 \end{pmatrix}$

C $\begin{pmatrix} 7 & 0 \\ 0 & 7 \end{pmatrix}$

D $\begin{pmatrix} 1 & 4 \\ 9 & 1 \end{pmatrix}$

END OF QUESTION PAPER
KERTAS SOALAN TAMAT

INFORMATION FOR CANDIDATES
MAKLUMAT UNTUK CALON

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