

SULIT



LEMBAGA PEPERIKSAAN  
KEMENTERIAN PENDIDIKAN MALAYSIA

**SIJIL PELAJARAN MALAYSIA 2014**

**1449/1**

**MATHEMATICS**

**Kertas 1**

**Jun**

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

**Satu jam lima belas minit**

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**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.*

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Kertas soalan ini mengandungi 34 halaman bercetak dan 2 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 =  $\frac{\text{sum of (midpoint} \times \text{frequency)}}{\text{sum of frequencies}}$

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

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* =  $\frac{1}{2} \times \text{hasil tambah dua sisi selari} \times \text{tinggi}$

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

*Lilitan bulatan* =  $\pi d = 2\pi j$

3 Area of circle =  $\pi r^2$

*Luas bulatan* =  $\pi j^2$

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

*Luas permukaan melengkung silinder* =  $2\pi jt$

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

*Luas permukaan sfera* =  $4\pi j^2$

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* =  $\pi j^2 t$

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

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

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

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

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*

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

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

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

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

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

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

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

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

- 1 Round off 4.9086 correct to three significant figures.  
*Bundarkan 4.9086 betul kepada tiga angka bererti.*
- A 4.90  
B 4.91  
C 4.908  
D 4.909
- 2 It is given that  $0.00234 = 2.34 \times 10^n$ .  
Find the value of  $n$ .  
*Diberi bahawa  $0.00234 = 2.34 \times 10^n$ .*  
*Cari nilai  $n$ .*
- A 5  
B 3  
C -3  
D -5
- 3  $2.36 \times 10^{-4} \times 35 \times 10^{-5}$
- A  $8.26 \times 10^{-7}$   
B  $8.26 \times 10^{-8}$   
C  $8.26 \times 10^{-9}$   
D  $8.26 \times 10^{-10}$

- 4 Diagram 1 shows two plots of land,  $P$  and  $Q$ . The area of  $P$  is  $6.2 \times 10^6 \text{ m}^2$ .  $Q$  is a square.

*Rajah 1 menunjukkan dua bidang tanah,  $P$  dan  $Q$ . Luas  $P$  ialah  $6.2 \times 10^6 \text{ m}^2$ .  $Q$  ialah segi empat sama.*

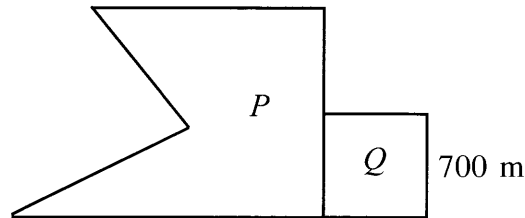


Diagram 1  
Rajah 1

Find the total area, in  $\text{m}^2$ , of the two plots of land.

*Cari jumlah luas, dalam  $\text{m}^2$ , kedua-dua bidang tanah itu.*

- A  $6.69 \times 10^6$
- B  $6.249 \times 10^6$
- C  $6.214 \times 10^6$
- D  $6.2014 \times 10^6$
- 5 Express  $5(5^2 + 4 \times 5 + 2)$  as a number in base five.
- Ungkapkan  $5(5^2 + 4 \times 5 + 2)$  sebagai satu nombor dalam asas lima.*
- A  $142_5$
- B  $241_5$
- C  $1042_5$
- D  $1420_5$

6  $110010_2 - 1011_2 =$

A  $100111_2$

B  $101011_2$

C  $111001_2$

D  $111101_2$

7 In Diagram 2,  $PQRST$  is part of a regular polygon with  $n$  sides.

*Dalam Rajah 2,  $PQRST$  ialah sebahagian daripada poligon sekata yang mempunyai  $n$  sisi.*

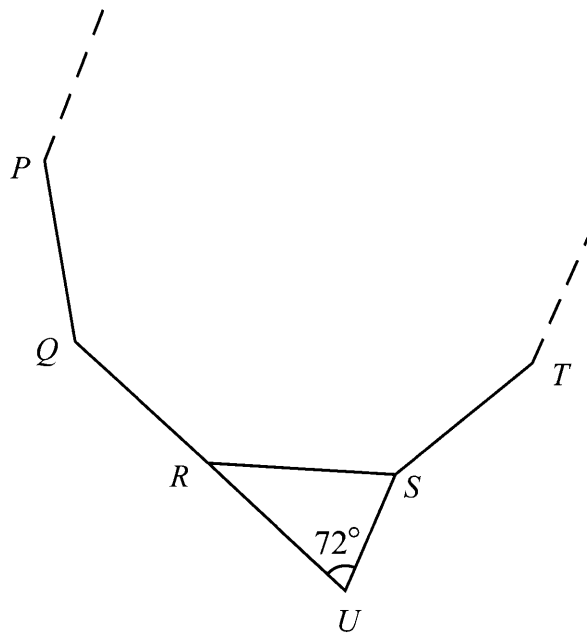


Diagram 2  
Rajah 2

It is given that  $QRU$  is a straight line and  $RS = RU$ .

Find the value of  $n$ .

*Diberi bahawa  $QRU$  ialah garis lurus dan  $RS = RU$ .*

*Cari nilai  $n$ .*

A 10

B 8

C 6

D 5

8 Diagram 3 shows two isosceles triangles,  $RUT$  and  $SVT$ .

*Rajah 3 menunjukkan dua segi tiga sama kaki,  $RUT$  dan  $SVT$ .*

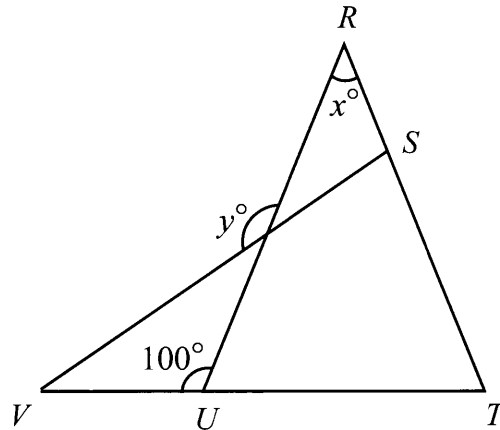


Diagram 3  
*Rajah 3*

It is given that  $RU = RT$  and  $VT = VS$ .

Find the value of  $x + y$ .

*Diberi bahawa  $RU = RT$  dan  $VT = VS$ .*

*Cari nilai  $x + y$ .*

- A 1800
- B 160
- C 140
- D 120



- 9 In Diagram 4,  $HKJ$ ,  $HLM$  and  $MNJ$  are tangents to a circle at points  $K$ ,  $N$  and  $L$ .  
*Dalam Rajah 4,  $HKJ$ ,  $HLM$  dan  $MNJ$  ialah tangen-tangen kepada bulatan di  $K$ ,  $N$  dan  $L$ .*

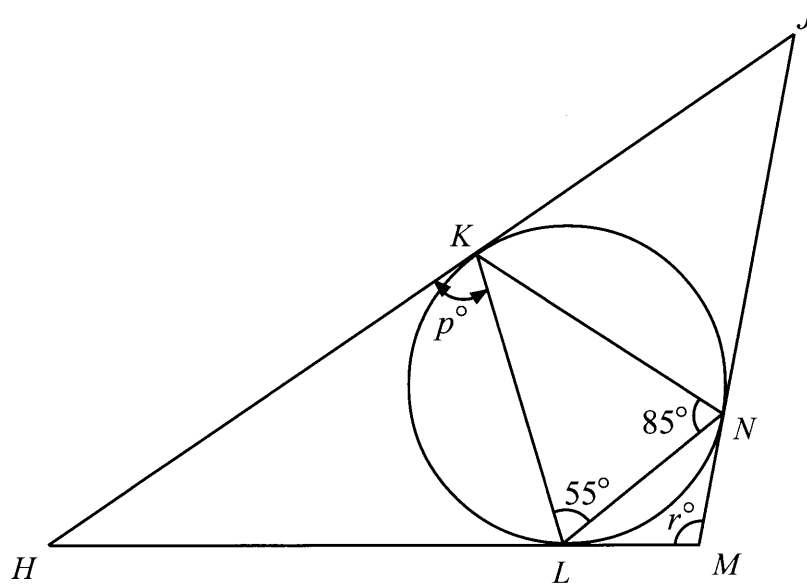


Diagram 4  
*Rajah 4*

Find the value of  $p$  and of  $r$ .

*Cari nilai  $p$  dan nilai  $r$ .*

- A**  $p = 55$ ,  $r = 100$   
**B**  $p = 55$ ,  $r = 110$   
**C**  $p = 85$ ,  $r = 100$   
**D**  $p = 85$ ,  $r = 110$

- 10 Diagram 5 shows two triangles,  $P$  and  $Q$ , drawn on a Cartesian plane. Triangle  $Q$  is the image of triangle  $P$  under a rotation.

Rajah 5 menunjukkan dua segi tiga,  $P$  dan  $Q$ , dilukis di atas satah Cartes. Segi tiga  $Q$  adalah imej bagi segi tiga  $P$  di bawah suatu putaran.

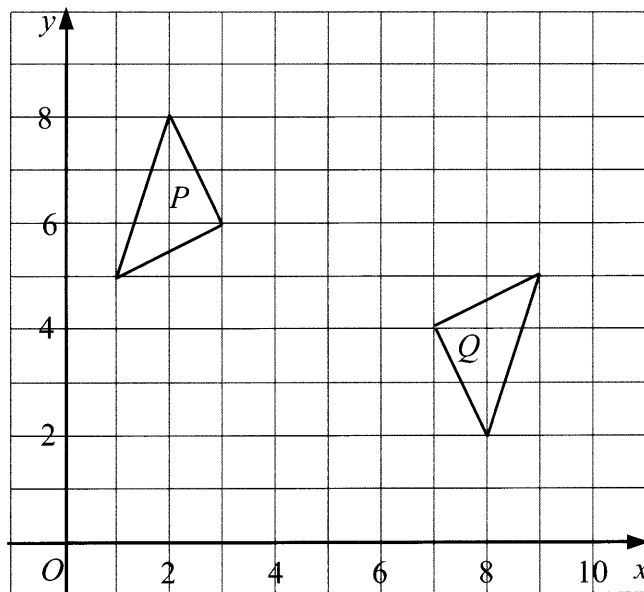


Diagram 5  
Rajah 5

Find the centre and the angle of the rotation.

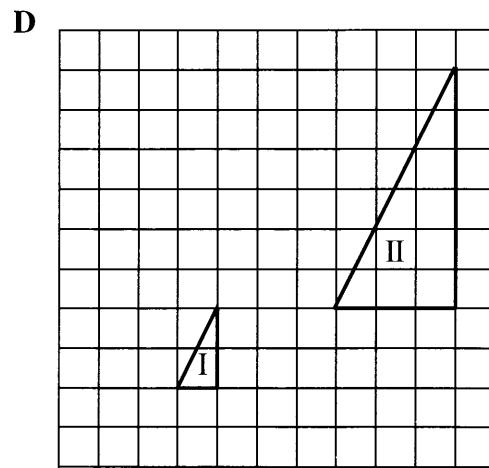
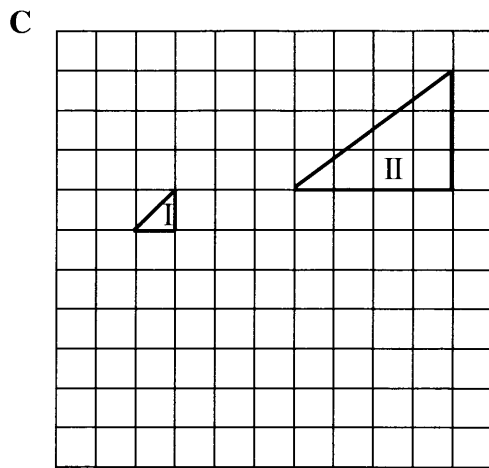
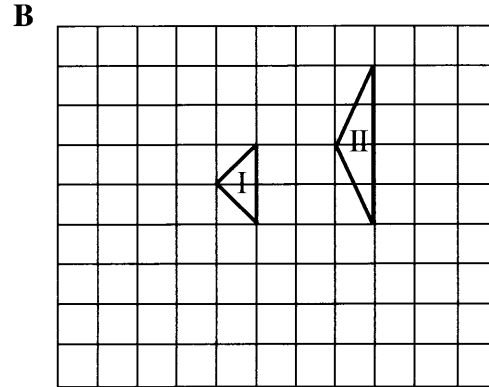
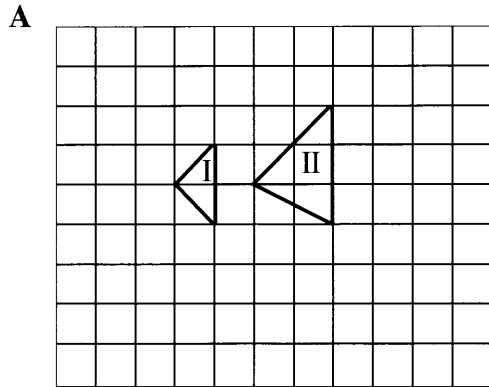
Cari pusat putaran dan sudut putaran itu.

	Centre of rotation <i>Pusat putaran</i>	Angle of rotation <i>Sudut putaran</i>
A	(4, 3)	$90^\circ$
B	(4, 3)	$180^\circ$
C	(5, 5)	$90^\circ$
D	(5, 5)	$180^\circ$

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11 Which of the following diagram shows that triangle II is the image of triangle I under an enlargement?

*Antara rajah berikut, manakah menunjukkan segi tiga II adalah imej bagi segi tiga I di bawah suatu pembesaran?*



12 Diagram 6 shows a right angled triangle  $PQR$ .  $PRS$  is a straight line.

*Rajah 6 menunjukkan sebuah segi tiga bersudut tegak  $PQR$ .  $PRS$  ialah garis lurus.*

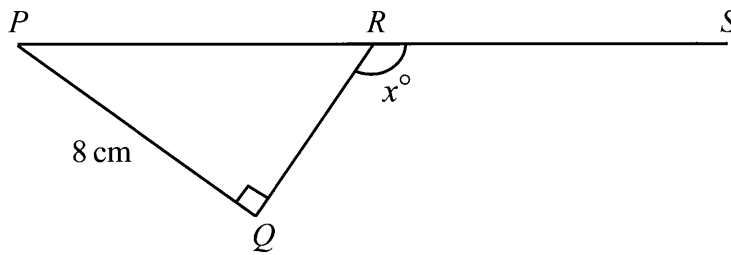


Diagram 6  
*Rajah 6*

Given that  $PS = 20\text{ cm}$  and  $PR = RS$ .

Find the value of  $\tan x^\circ$ .

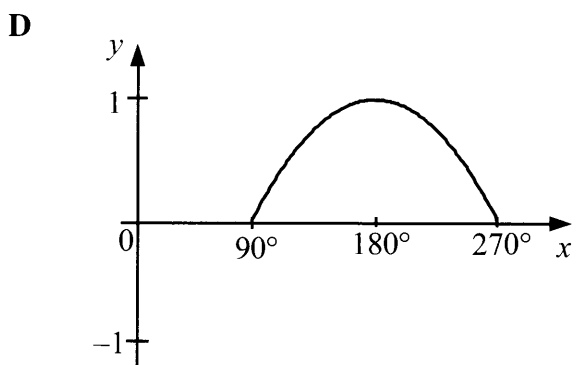
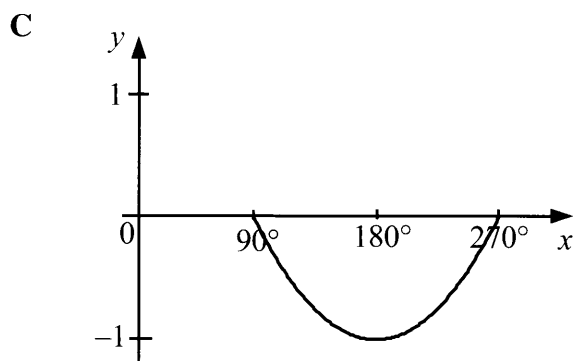
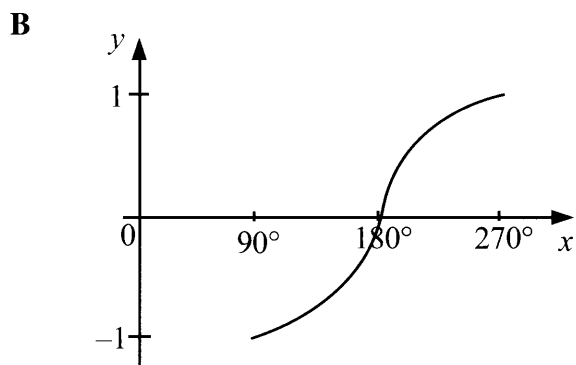
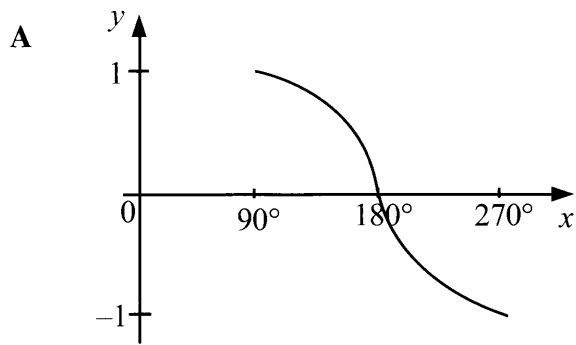
*Diberi bahawa  $PS = 20\text{ cm}$  dan  $PR = RS$ .*

*Cari nilai  $\tan x^\circ$ .*

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

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- 13 Which graph represents  $y = \cos x$ , for  $90^\circ \leq x \leq 270^\circ$  ?  
*Graf manakah mewakili  $y = \cos x$ , bagi  $90^\circ \leq x \leq 270^\circ$  ?*



14 Diagram 7 shows a cuboid with a horizontal base  $LMNP$ .

*Rajah 7 menunjukkan sebuah kuboid dengan tapak mengufuk  $LMNP$ .*

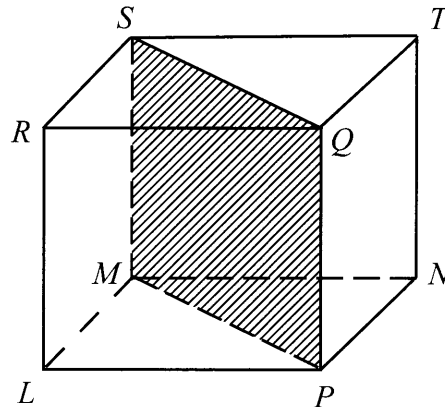


Diagram 7  
*Rajah 7*

Name the angle between the plane  $RSML$  and the plane  $MSQP$ .

*Namakan sudut di antara satah  $RSML$  dengan satah  $MSQP$ .*

- A  $\angle RSQ$
- B  $\angle RSP$
- C  $\angle RMQ$
- D  $\angle RMP$

15 Diagram 8 shows two vertical poles,  $TS$  and  $PR$ , on a horizontal plane.

*Rajah 8 menunjukkan dua tiang tegak,  $TS$  dan  $PR$  yang terletak pada satah mengufuk.*

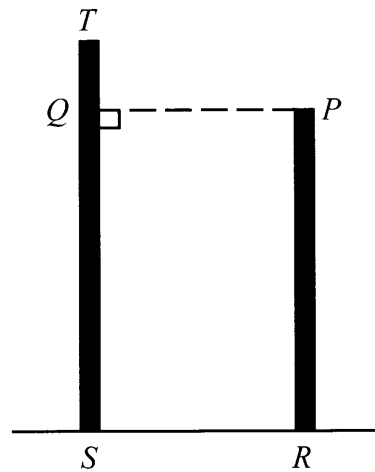


Diagram 8  
*Rajah 8*

Name the angle of elevation of  $P$  from  $S$ .

*Namakan sudut dongakan  $P$  dari  $S$ .*

- A  $\angle PSR$
- B  $\angle QSP$
- C  $\angle QPS$
- D  $\angle SPR$

- 16 In Diagram 9,  $R$ ,  $S$  and  $P$  are three points on a horizontal plane.  $PQ$  is vertical pole with a height of 16.41 m.

*Dalam Rajah 9,  $R$ ,  $S$  dan  $P$  adalah tiga titik yang terletak di atas satah mengufuk.  $PQ$  ialah sebatang tiang dan mempunyai tinggi 16.41 m.*

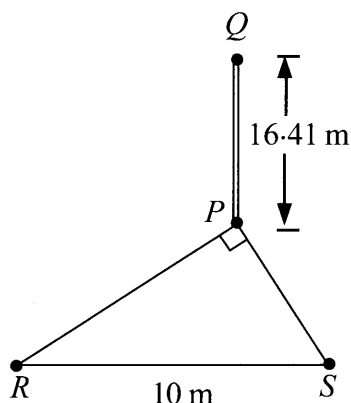


Diagram 9  
Rajah 9

The angle of depression of  $R$  from  $Q$  is  $64.01^\circ$  and  $\angle RPS = 90^\circ$ .

Calculate the angle of elevation of  $Q$  from  $S$ .

*Sudut tunduk  $R$  dari  $Q$  ialah  $64.01^\circ$  dan  $\angle RPS = 90^\circ$ .*

*Hitung sudut dongak  $Q$  dari  $S$ .*

- A  $25.99^\circ$
- B  $36.87^\circ$
- C  $58.64^\circ$
- D  $69.92^\circ$



- 17 Diagram 10 shows three points  $P$ ,  $Q$ , and  $R$  on a horizontal plane. Given that  $PQ = QR = RP$  and  $R$  due south of  $P$ .

*Rajah 10 menunjukkan tiga titik  $P$ ,  $Q$  dan  $R$  pada suatu satah mengufuk. Diberi bahawa  $PQ = QR = RP$  dan  $R$  berada ke selatan  $P$ .*

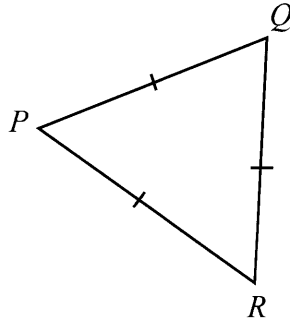


Diagram 10  
Rajah 10

Find the bearing  $R$  from  $Q$ .

*Cari bearing  $R$  dari  $Q$ .*

- A  $030^\circ$
- B  $060^\circ$
- C  $210^\circ$
- D  $240^\circ$

- 18 In Diagram 11,  $P$  is a point on the earth.  $N$  is the North Pole,  $S$  is the South Pole and  $NOS$  is the axis of the earth.

*Dalam Rajah 11,  $P$  ialah titik di atas permukaan bumi.  $U$  ialah Kutub Utara,  $S$  ialah Kutub Selatan dan  $UOS$  ialah paksi bumi.*

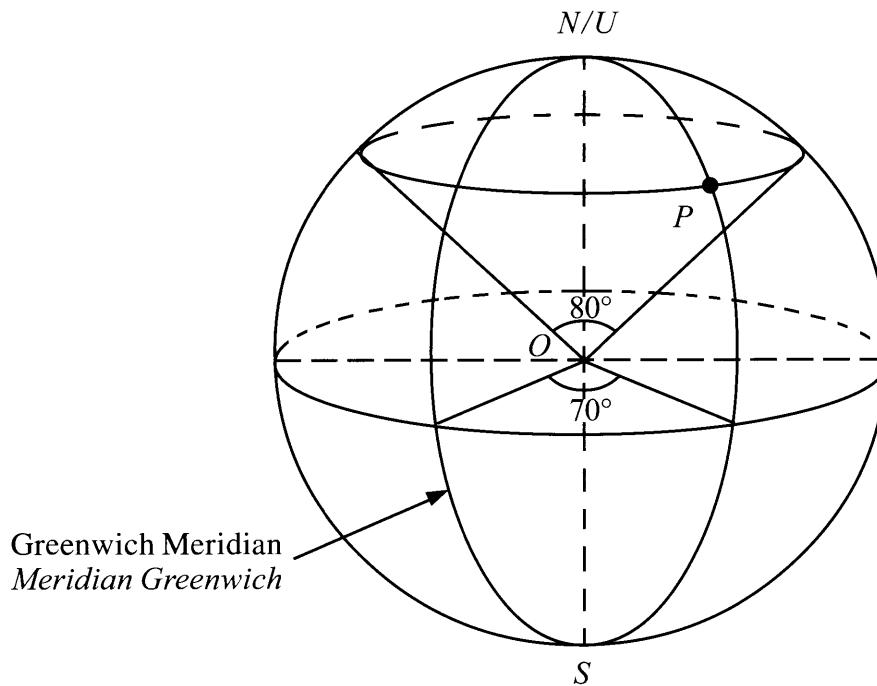


Diagram 11  
Rajah 11

Find the location of point  $P$ .

*Cari kedudukan titik  $P$ .*

- A** (  $50^{\circ}N$  ,  $70^{\circ}E$  )  
(  $50^{\circ}U$  ,  $70^{\circ}T$  )
- B** (  $50^{\circ}N$  ,  $70^{\circ}W$  )  
(  $50^{\circ}U$  ,  $70^{\circ}B$  )
- C** (  $80^{\circ}N$  ,  $70^{\circ}E$  )  
(  $80^{\circ}U$  ,  $70^{\circ}T$  )
- D** (  $80^{\circ}N$  ,  $70^{\circ}W$  )  
(  $80^{\circ}U$  ,  $70^{\circ}B$  )

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19  $(x - 3y)^2 - 2xy =$

A  $x^2 - 8xy + 9y^2$

B  $x^2 - 2xy - 9y^2$

C  $x^2 - 8xy + 3y^2$

D  $x^2 - 2xy - 3y^2$

20 Express  $\frac{v+w}{vw} - \frac{3-2w}{4w}$  as a single fraction in its simplest form.

Ungkapkan  $\frac{v+w}{vw} - \frac{3-2w}{4w}$  sebagai satu pecahan tunggal dalam bentuk termudah.

A  $\frac{v+3w-3}{4vw}$

B  $\frac{4v+w-3}{4vw}$

C  $\frac{v+4w-2wv}{4vw}$

D  $\frac{v+4w+2wv}{4vw}$

- 21 Given  $p = \frac{2-k}{k}$ , express  $k$  in terms of  $p$ .

Diberi  $p = \frac{2-k}{k}$ , ungkapkan  $k$  dalam sebutan  $p$ .

A  $\frac{2}{p-1}$

B  $\frac{2}{p+1}$

C  $\frac{p+1}{2}$

D  $\frac{p-1}{2}$

- 22 Solve the linear equation for  $\frac{x}{3} - 3 = 12$ .

Selesaikan persamaan linear bagi  $\frac{x}{3} - 3 = 12$ .

A 11

B 13

C 39

D 45

- 23 Find the solution for  $x + 2 \leq 3x + 6$ .

Cari penyelesaian bagi  $x + 2 \leq 3x + 6$ .

A  $x \leq 1$

B  $x \geq 1$

C  $x \leq -2$

D  $x \geq -2$

24 Simplify:

Ringkaskan:

$$2\left(\frac{m^2 n}{m}\right)^6 \times \left(3m^{\frac{1}{2}} n^3\right)^2$$

- A  $6m^7 n^4$
- B  $6m^{12} n^{12}$
- C  $18m^7 n^{12}$
- D  $18m^{12} n^4$

25 Which of the following satisfies the inequalities  $\frac{x}{3} - 1 \leq x$ ?

Antara berikut yang manakah memuaskan ketaksamaan  $\frac{x}{3} - 1 \leq x$ ?

- A  $x \leq -\frac{3}{2}$
- B  $x \leq -2$
- C  $x \geq -\frac{3}{2}$
- D  $x \geq -2$

26 Find the solution for  $\frac{2x}{3} - 1 \leq 5$  and  $3 - x < -2$ .

Cari penyelesaian bagi  $\frac{2x}{3} - 1 \leq 5$  dan  $3 - x < -2$ .

- A  $-5 < x \leq 9$
- B  $-5 < x \leq 7$
- C  $5 < x \leq 7$
- D  $5 < x \leq 9$

27 Diagram 12 shows a pie chart represents the time spent in a day by a student.

*Rajah 12 menunjukkan carta pai yang mewakili masa yang digunakan dalam sehari oleh seorang murid.*

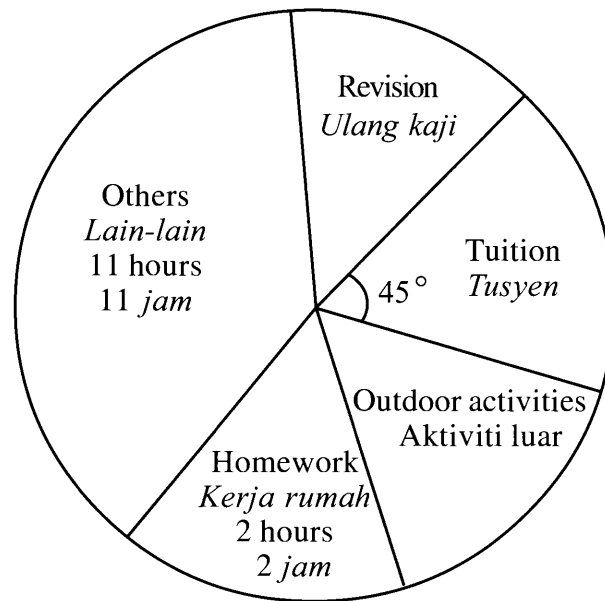


Diagram 12  
*Rajah 12*

It is given that the time spent for revision and outdoor activities are same.

Calculate the time spent for revision.

*Diberi bahawa masa yang digunakan untuk ulang kaji dan masa yang digunakan untuk aktiviti luar adalah sama.*

*Hitung masa yang digunakan untuk ulang kaji.*

- A 2 hours 30 minutes  
*2 jam 30 minit*
- B 3 hours 40 minutes  
*3 jam 40 minit*
- C 4 hours  
*4 jam*
- D 6 hours  
*6 jam*

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- 28 Diagram 13 is a bar chart showing the number of boys and the number of girls in four Form Five classes. The bar for the number of girls in Form 5R is not shown.

*Rajah 13 ialah carta palang yang menunjukkan bilangan murid lelaki dan bilangan murid perempuan dalam empat kelas Tingkatan Lima. Palang yang menunjukkan bilangan murid perempuan dalam Tingkatan 5R tidak ditunjukkan.*

Number of students  
*Bilangan murid*

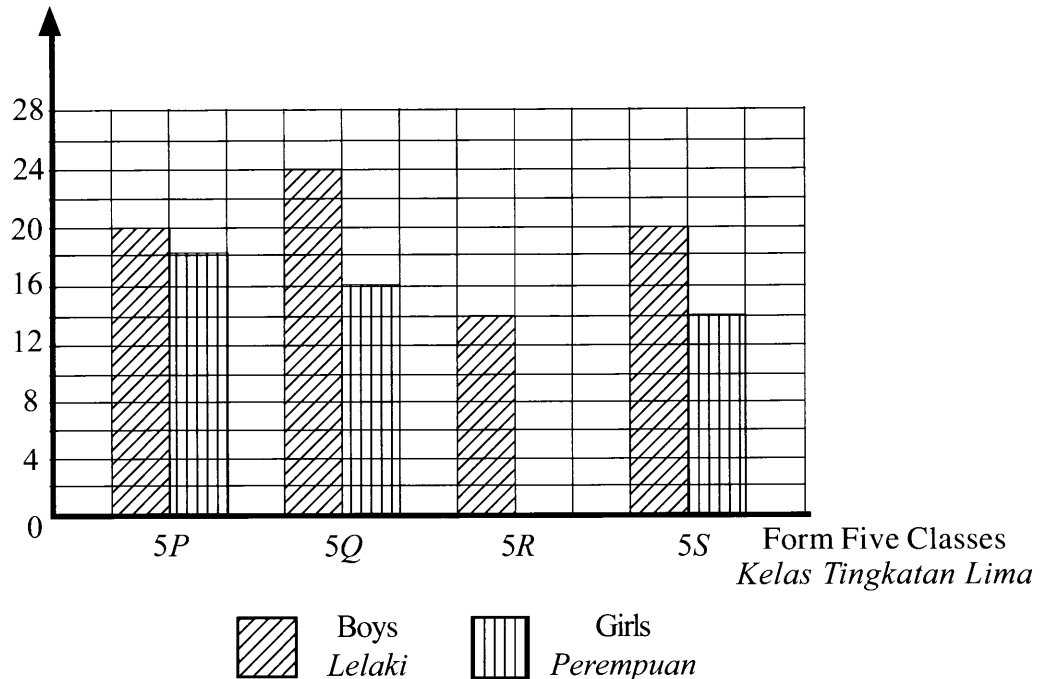


Diagram 13  
*Rajah 13*

Given that the ratio of the number of boys to the number of girls in four Form Five classes is 6 : 5.

Find the number of girls in Form 5R.

*Diberi bahawa nisbah bilangan murid lelaki kepada bilangan murid perempuan dalam empat kelas Tingkatan Lima ialah 6 : 5.*

*Cari bilangan murid perempuan dalam Tingkatan 5R.*

- A 13
- B 17
- C 24
- D 30

29 Diagram 14 shows a set of eleven numbers where  $m$  is an integer.

Rajah 14 menunjukkan satu set sebelas nombor dengan keadaan  $m$  ialah integer.

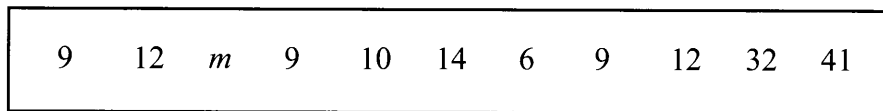
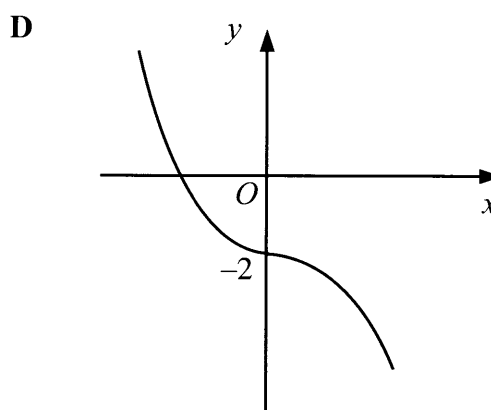
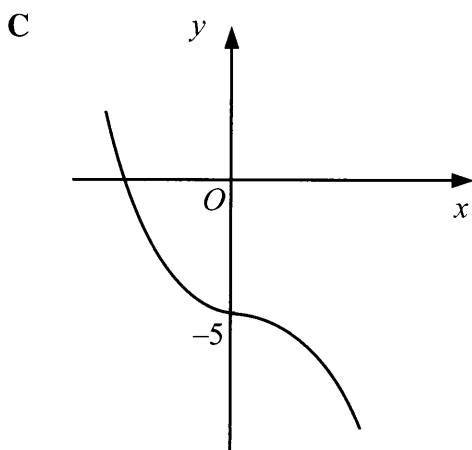
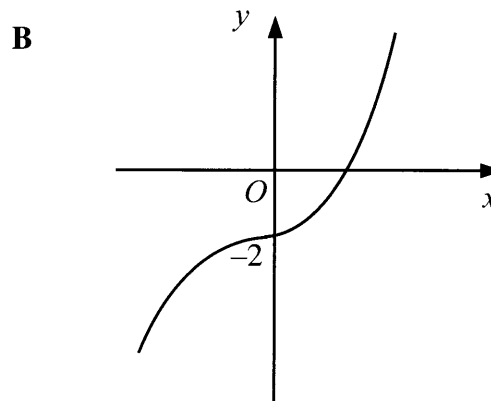
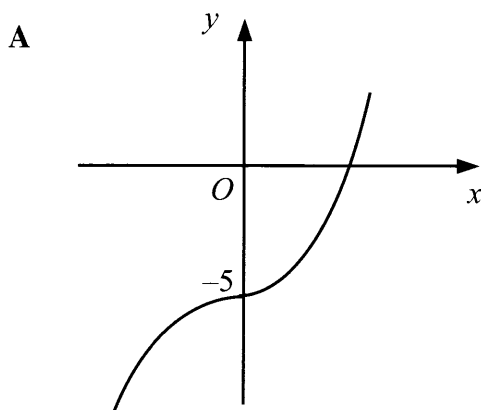


Diagram 14  
Rajah 14

Given the median is  $m$ , find the minimum value of  $m$ .

Diberi  $m$  ialah median, cari nilai minimum bagi  $m$ .

- A 9  
B 10  
C 12  
D 14
- 30 Which graph represents  $y = -5x^3 - 2$ ?  
Graf manakah yang mewakili  $y = -5x^3 - 2$ ?



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- 31 Diagram 15 is a Venn diagram showing the number of students in set  $P$ , set  $T$  and set  $S$ . It is given that set  $P = \{\text{students who play ping pong}\}$ , set  $T = \{\text{students who play tennis}\}$ , set  $S = \{\text{students who play soccer}\}$  and the universal set,  $\xi = P \cup T \cup S$ .

Rajah 15 ialah gambar rajah Venn yang menunjukkan bilangan murid dalam set  $P$ , set  $T$  dan set  $S$ . Diberi bahawa set  $P = \{\text{murid yang bermain ping pong}\}$ , set  $T = \{\text{murid yang bermain tenis}\}$ , set  $S = \{\text{murid yang bermain bola sepak}\}$  dan set semesta,  $\xi = P \cup T \cup S$ .

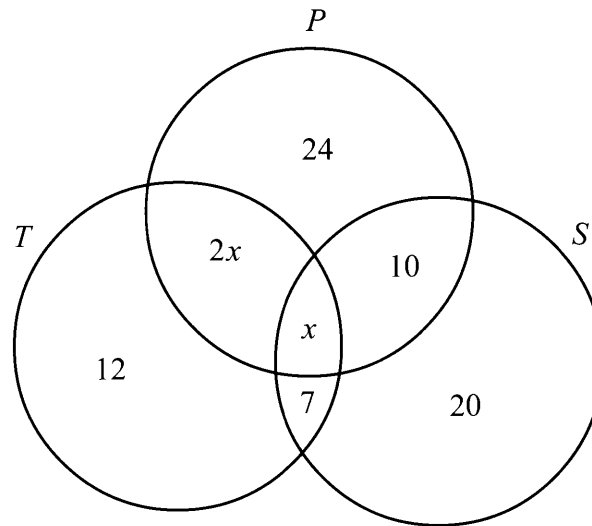


Diagram 15  
Rajah 15

Given  $n(\xi) = 100$ , find the number of students who play only two games.

Diberi  $n(\xi) = 100$ , cari bilangan murid yang main hanya dua permainan sahaja.

- A 27
- B 35
- C 44
- D 56

32 Diagram 16 is a Venn diagram with the universal set,  $\xi = J \cup K \cup L$ .

Rajah 16 ialah gambar rajah Venn dengan set semesta,  $\xi = J \cup K \cup L$ .

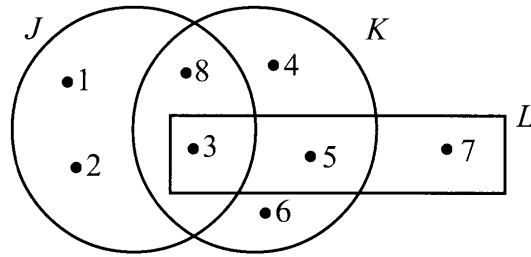


Diagram 16  
Rajah 16

Find  $n(J \cap K \cup L)$ .

Cari  $n(J \cap K \cup L)$ .

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

- 33 In Diagram 17,  $PQ$  is a straight line.  $RQ$  parallel to  $x$ -axis.  
*Dalam Rajah 17,  $PQ$  ialah garis lurus.  $RQ$  selari dengan paksi- $x$ .*

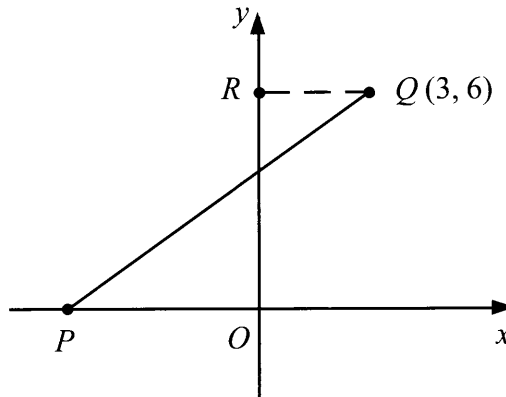


Diagram 17  
Rajah 17

Given  $PQ = 10$  units, find the gradient of  $PR$ .  
*Diberi  $PQ = 10$  unit, cari kecerunan  $PR$ .*

- A  $\frac{3}{4}$
- B  $\frac{5}{6}$
- C  $\frac{6}{5}$
- D  $\frac{4}{3}$

34 Diagram 18 shows two straight lines,  $PQ$  and  $PR$ , drawn on a Cartesian plane.

*Rajah 18 menunjukkan dua garis lurus,  $PQ$  dan  $PR$  yang dilukis pada suatu satah Cartes.*

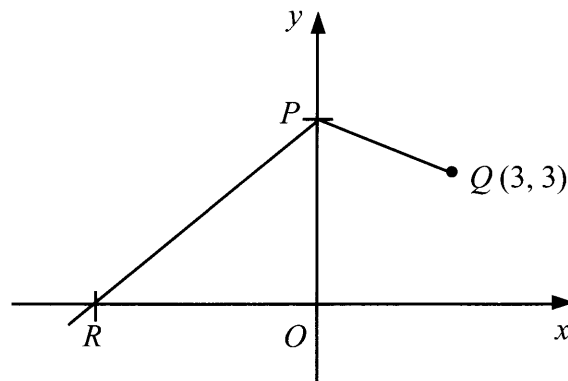


Diagram 18  
*Rajah 18*

It is given that the gradient of  $PQ = -3$  and  $PR$  is 15 units.

Find the  $x$ -intercept of  $PR$ .

*Diberi bahawa kecerunan  $PQ = -3$  dan  $PR$  ialah 15 unit.*

*Cari pintasan- $x$  bagi  $PR$ .*

- A -5
- B -9
- C -12
- D -15

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35 Table 1 shows number of T-shirts according to the colours and sizes, in a box.

*Jadual 1 menunjukkan bilangan baju-T mengikut saiz dan warna, di dalam sebuah kotak.*

<b>Size Saiz</b> <b>Colour Warna</b>	<b>S</b>	<b>M</b>	<b>L</b>
Yellow <i>Kuning</i>	0	2	1
Blue <i>Biru</i>	1	1	1
Green <i>Hijau</i>	0	1	2
Red <i>Merah</i>	3	0	0

Table 1  
*Jadual 1*

A T-shirt is chosen at random from the box.

Find the probability that an **L** size green T-shirt is chosen.

*Sehelai baju-T dipilih secara rawak dari kotak itu.*

*Cari kebarangkalian bahawa sehelai baju-T hijau bersaiz **L** dipilih.*

**A**  $\frac{1}{6}$

**B**  $\frac{1}{4}$

**C**  $\frac{1}{3}$

**D**  $\frac{1}{2}$

- 36 There are 40 Mathematics, Science and History books on the rack. The number of Mathematics books is 5 and the probability of choosing a Science book at random is  $\frac{2}{5}$ .

If Ali puts another 5 Mathematics and 3 History books on the rack, find the probability of picking a History book.

*Terdapat 40 buah buku Matematik, buku Sains dan buku Sejarah pada rak. Bilangan buku Matematik ialah 5 dan kebarangkalian memilih sebuah buku Sains*

*secara rawak ialah  $\frac{2}{5}$ .*

*Jika Ali meletakkan 5 buah buku Matematik dan 3 buah buku Sejarah lagi di atas rak, cari kebarangkalian memilih sebuah buku Sejarah.*

A  $\frac{19}{48}$

B  $\frac{11}{24}$

C  $\frac{19}{40}$

D  $\frac{11}{20}$

- 37 It is given that  $y$  varies directly as the square of  $x$  and  $y = 4$  when  $x = 6$ .

Express  $y$  in terms of  $x$ .

*Diberi bahawa  $y$  berubah secara langsung dengan kuasa dua  $x$  dan  $y = 4$  apabila  $x = 6$ .*

*Ungkapkan  $y$  dalam sebutan  $x$ .*

A  $y = \frac{1}{9}x^2$

B  $y = 9x^2$

C  $y = \frac{144}{x^2}$

D  $y = \frac{1}{144x^2}$

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- 38 Table 2 shows some values of the variables  $y$  and  $x$ , such that  $y$  varies inversely as cube root of  $x$ .

*Jadual 2 menunjukkan beberapa nilai bagi pembolehubah  $y$  dan  $x$ , dengan keadaan  $y$  berubah secara songsang dengan punca kuasa tiga  $x$ .*

$y$	2	4
$x$	1	$m$

Table 2  
*Jadual 2*

Calculate the value of  $m$ .

*Hitung nilai  $m$ .*

- A  $\frac{1}{64}$
- B  $\frac{1}{8}$
- C 8
- D 64
- 39  $\begin{pmatrix} 2 & 7 \\ 5 & 1 \end{pmatrix} + 2\begin{pmatrix} 3 & -4 \\ 5 & 0 \end{pmatrix} - \begin{pmatrix} -2 & 1 \\ -3 & 4 \end{pmatrix} =$
- A  $\begin{pmatrix} 6 & -2 \\ 18 & -3 \end{pmatrix}$
- B  $\begin{pmatrix} 10 & -2 \\ 18 & -3 \end{pmatrix}$
- C  $\begin{pmatrix} 10 & -2 \\ 18 & 5 \end{pmatrix}$
- D  $\begin{pmatrix} 10 & 0 \\ 18 & -3 \end{pmatrix}$

$$40 \quad 2 \begin{pmatrix} 4 & -1 & 3 \\ 3 & 0 & -1 \\ 1 & 2 & -2 \end{pmatrix} + \frac{1}{3} \begin{pmatrix} 3 & -3 & 0 \\ 6 & 3 & 6 \\ -12 & 0 & 9 \end{pmatrix} =$$

$$\mathbf{A} \quad \begin{pmatrix} 9 & -3 & 6 \\ 8 & 1 & 0 \\ -2 & 4 & -1 \end{pmatrix}$$

$$\mathbf{B} \quad \begin{pmatrix} 9 & -4 & 3 \\ 8 & 3 & 5 \\ -2 & 2 & 7 \end{pmatrix}$$

$$\mathbf{C} \quad \begin{pmatrix} 7 & -1 & 6 \\ 9 & 3 & -7 \\ 13 & 2 & -11 \end{pmatrix}$$

$$\mathbf{D} \quad \begin{pmatrix} 7 & -4 & 3 \\ 8 & 1 & 0 \\ -3 & 2 & 1 \end{pmatrix}$$

**END OF QUESTION PAPER**  
***KERTAS SOALAN TAMAT***