

1449/1  
Matematik  
Kertas 1  
Oktober 2021  
 $1\frac{1}{2}$  jam



**MODUL ULANGKAJI KECEMERLANGAN BERFOKUS SPM 2021**  
**SET 2**

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**MATEMATIK**

Kertas 1

Satu jam tiga puluh minit

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**JANGAN BUKA MODUL INI SEHINGGA DIBERITAHU**

1. *Modul ini mengandungi 40 soalan dalam dwibahasa.*
2. *Jawab semua soalan.*
3. *Rajah yang mengiringi soalan tidak dilukis mengikut skala kecuali dinyatakan.*
4. *Satu senarai rumus disediakan di halaman 2 dan 3.*
5. *Anda dibenarkan menggunakan kalkulator saintifik.*

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Modul ini mengandungi 25 halaman bercetak.

**RUMUS MATEMATIK**  
**MATHEMATICAL FORMULAE**

Rumus-rumus berikut boleh membantu anda untuk 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*

**PERKAITAN**  
**RELATIONS**

- |  |  |
|--|--|
| <p>1 <math>a^m \times a^n = a^{m+n}</math></p> <p>2 <math>a^m \div a^n = a^{m-n}</math></p> <p>3 <math>(a^m)^n = a^{mn}</math></p> <p>4 <math>A^{-1} = \frac{1}{ad-bc} \begin{pmatrix} d &amp; -b \\ -c &amp; a \end{pmatrix}</math></p> <p>5 Jarak / Distance = <math>\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}</math></p> <p>6 Titik Tengah / midpoint <math>(x, y) = \left( \frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)</math></p> <p>7 Purata laju = <math>\frac{\text{jarak yang dilalui}}{\text{masa yang diambil}}</math><br/>Average speed = <math>\frac{\text{distance travelled}}{\text{time taken}}</math></p> <p>8 Min = <math>\frac{\text{hasil tambah nilai data}}{\text{bilangan data}}</math><br/>Mean = <math>\frac{\text{sum of data}}{\text{number of data}}</math></p> <p>9 Min = <math>\frac{\text{hasil tambah (nilai titik tengah kelas} \times \text{kekerapan)}}{\text{hasil tambah kekerapan}}</math><br/>Mean = <math>\frac{\text{sum of (midpoint} \times \text{frequency)}}{\text{sum of frequencies}}</math></p> <p>10 Varians / Variance, <math>\sigma^2 = \frac{\Sigma(x - \bar{x})^2}{N} = \frac{\Sigma x^2}{N} - \bar{x}^2</math></p> <p>11 Varians / Variance, <math>\sigma^2 = \frac{\Sigma f(x - \bar{x})^2}{\Sigma f} = \frac{\Sigma f x^2}{\Sigma f} - \bar{x}^2</math></p> <p>12 Sisihan piawai / Standard deviation, <math>\sigma = \sqrt{\frac{\Sigma(x - \bar{x})^2}{N}} = \sqrt{\frac{\Sigma x^2}{N} - \bar{x}^2}</math></p> <p>13 Sisihan piawai / Standard deviation, <math>\sigma = \sqrt{\frac{\Sigma f(x - \bar{x})^2}{\Sigma f}} = \sqrt{\frac{\Sigma f x^2}{\Sigma f} - \bar{x}^2}</math></p> | <p>14 Teorem Pithagoras/Pythagoras Theorem<br/><math>c^2 = a^2 + b^2</math></p> <p>15 <math>P(A) = \frac{n(A)}{n(S)}</math></p> <p>16 <math>P(A') = 1 - P(A)</math></p> <p>17 <math>m = \frac{y_2 - y_1}{x_2 - x_1}</math></p> <p>18 <math>m = -\frac{\text{pintasan-y}}{\text{pintasan-x}}</math><br/><math>m = -\frac{\text{y-intercept}}{\text{x-intercept}}</math></p> <p>19 Faedah mudah / Simple interest, <math>I = Prt</math></p> <p>20 Nilai matang / Maturity value<br/><math>MV = P \left( 1 + \frac{r}{n} \right)^{nt}</math></p> <p>21 Jumlah bayaran balik / Total amount payable<br/><math>A = P + Prt</math></p> |
|--|--|

**BENTUK DAN RUANG**  
**SHAPES AND SPACE**

- 1 Luas trapezium =  $\frac{1}{2} \times \text{hasil tambah dua sisi selari} \times \text{tinggi}$   
*Area of trapezium =  $\frac{1}{2} \times \text{sum of parallel sides} \times \text{height}$*
- 2 Lilitan bulatan =  $\pi d = 2\pi r$   
*Circumference of circle =  $\pi d = 2\pi r$*
- 3 Luas bulatan =  $\pi r^2$   
*Area of circle =  $\pi r^2$*
- 4 Luas permukaan melengkung silinder =  $2\pi r h$   
*Curved surface area of cylinder =  $2\pi r h$*
- 5 Luas permukaan sfera =  $4\pi r^2$   
*Surface area of sphere =  $4\pi r^2$*
- 6 Isipadu prisma tegak = Luas keratan rentas  $\times$  panjang  
*Volume of right prism = cross sectional area  $\times$  length*
- 7 Isipadu silinder =  $\pi r^2 h$   
*Volume of cylinder =  $\pi r^2 h$*
- 8 Isipadu kon =  $\frac{1}{3} \pi r^2 h$   
*Volume of cone =  $\frac{1}{3} \pi r^2 h$*
- 9 Isipadu sfera =  $\frac{4}{3} \pi r^3$   
*Volume of sphere =  $\frac{4}{3} \pi r^3$*
- 10 Isipadu piramid tegak =  
 $\frac{1}{3} \times \text{luas tapak} \times \text{tinggi}$   
*Volume of right pyramid =  $\frac{1}{3} \times \text{base area} \times \text{height}$*
- 11 Hasil tambah sudut pedalaman poligon =  $(n - 2) \times 180^\circ$   
*Sum of interior angles of a polygon =  $(n - 2) \times 180^\circ$*
- 12  $\frac{\text{panjang lengkok}}{\text{lilitan bulatan}} = \frac{\text{sudut pusat}}{360^\circ}$   
 $\frac{\text{arc length}}{\text{circumference of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$
- 13  $\frac{\text{luas sektor}}{\text{luas bulatan}} = \frac{\text{sudut pusat}}{360^\circ}$   
 $\frac{\text{area of sector}}{\text{area of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$
- 14 Faktor skala,  $k = \frac{PA'}{PA}$   
 Scale factor,  $k = \frac{PA'}{PA}$
- 15 Luas imej =  $k^2 \times \text{luas objek}$   
*Area of image =  $k^2 \times \text{area of object}$*

Answer **all** questions.

*Jawab semua soalan.*

1. Apakah nilai digit bagi digit 2 dalam  $2134_6$ ?  
*What is the digit value of digit 2 in  $2134_6$ ?*

**A** 36  
**B** 432  
**C** 216  
**D** 48

2. Antara berikut, yang manakah benar?  
*Which of the following is true?*

**A**  $53_{10} > 107_9$   
**B**  $53_{10} > 110110_2$   
**C**  $53_{10} > 53_8$   
**D**  $53_{10} > 2100_3$

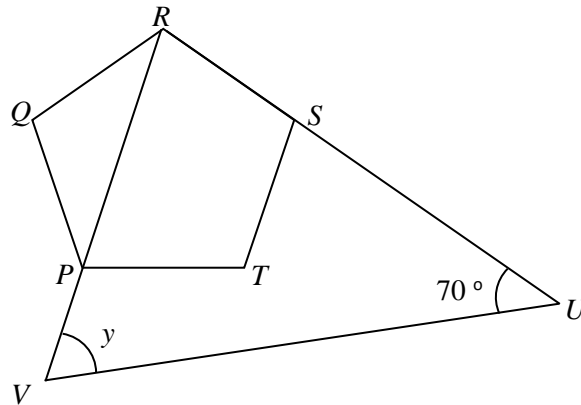
3. Bundarkan 0.0234567 betul kepada tiga angka bererti.  
*Round off 0.0234567 correct to three significant figures.*

**A** 0.023  
**B** 0.0230  
**C** 0.0234  
**D** 0.0235

4. Luas sebuah bendera Malaysia gergasi untuk perarakan kemerdekaan ialah  $9.9 \times 10^3 \text{ m}^2$ . Lebar bendera tersebut ialah 9000 cm. Hitung panjang, dalam cm, bendera tersebut.  
*The area of the giant Malaysia flag for the independence march is  $9.9 \times 10^3 \text{ m}^2$ . The width of the flag is 9000 cm. Calculate the length in, cm of the flag.*

**A**  $1.1 \times 10^3$   
**B**  $1.1 \times 10^4$   
**C**  $1.1 \times 10^5$   
**D**  $1.1 \times 10^6$

5. Dalam Rajah 1,  $PQRST$  ialah sebuah pentagon sekata,  $RSU$  dan  $RPV$  ialah garis lurus.  
*In Diagram 1,  $PQRST$  is a regular pentagon,  $RSU$  and  $RPV$  are straight lines.*

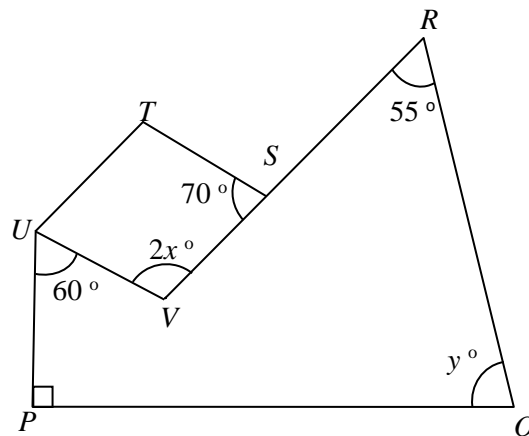


Rajah 1  
 Diagram 1

Hitung nilai bagi  $y$ .  
*Calculate the value of  $y$ .*

- A** 38  
**B** 50  
**C** 72  
**D** 105

6. Dalam Rajah 2,  $STUV$  ialah sebuah rombus dan  $RSV$  ialah garis lurus.  
*In Diagram 2,  $STUV$  is a rhombus and  $RSV$  is a straight line.*

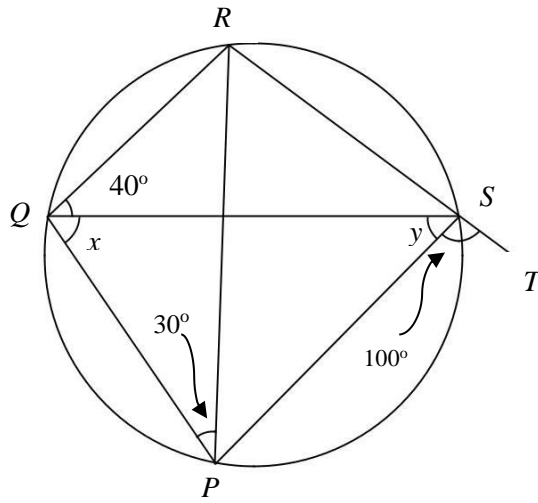


Rajah 2  
 Diagram 2

Hitung nilai of  $x + y$ .  
*Calculate the value  $x + y$ .*

- A** 115  
**B** 130  
**C** 135  
**D** 140

7. Dalam rajah 3,  $RST$  ialah garis lurus.  
*In diagram 3,  $RST$  is a straight line.*



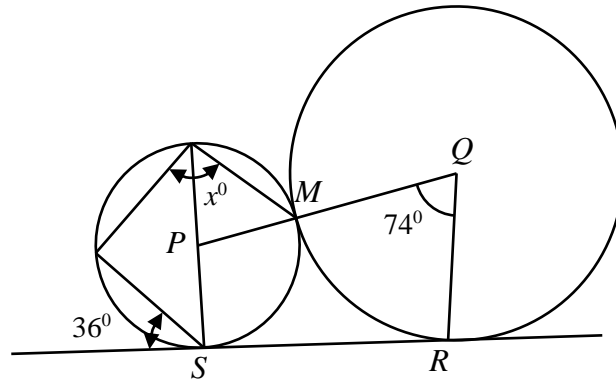
Rajah 3  
 Diagram 3

Calculate the value of  $x + y$   
 Hitung nilai bagi  $x + y$

- A** 60  
**B** 80  
**C** 110  
**D** 140

8. Rajah 4 menunjukkan dua bulatan dengan pusat  $P$  dan  $Q$  bersentuh di  $M$ .  $SR$  adalah tangen sepunya kepada kedua-dua bulatan masing-masing di  $S$  dan  $R$ .

*Diagram 4 shows two circles with centres  $P$  and  $Q$  touching at  $M$ .  $SR$  is the common tangents to the circle at  $S$  and  $R$  respectively.*



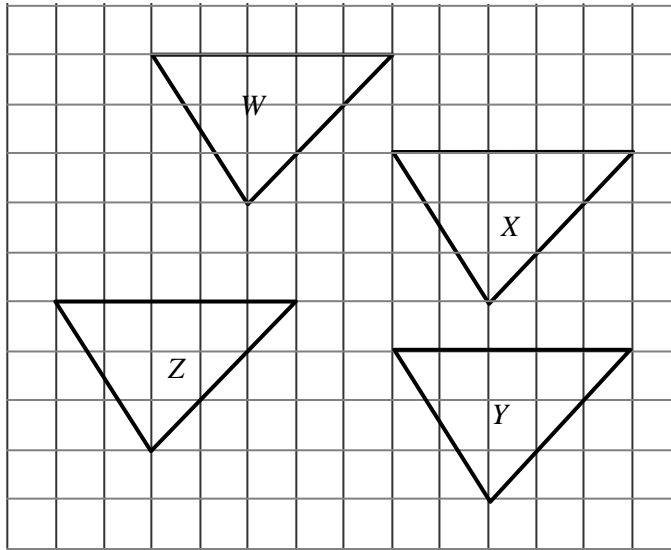
Rajah 4  
Diagram 4

Cari nilai  $x$ .

*Find the value of  $x$ .*

- A** 72
- B** 81
- C** 89
- D** 110

9. Rajah 5 menunjukkan empat segitiga,  $W$ ,  $X$ ,  $Y$  dan  $Z$ , dilukis pada grid segiempat sama. *Diagram 5 shows four triangles,  $W$ ,  $X$ ,  $Y$  and  $Z$ , drawn on the square grids.*



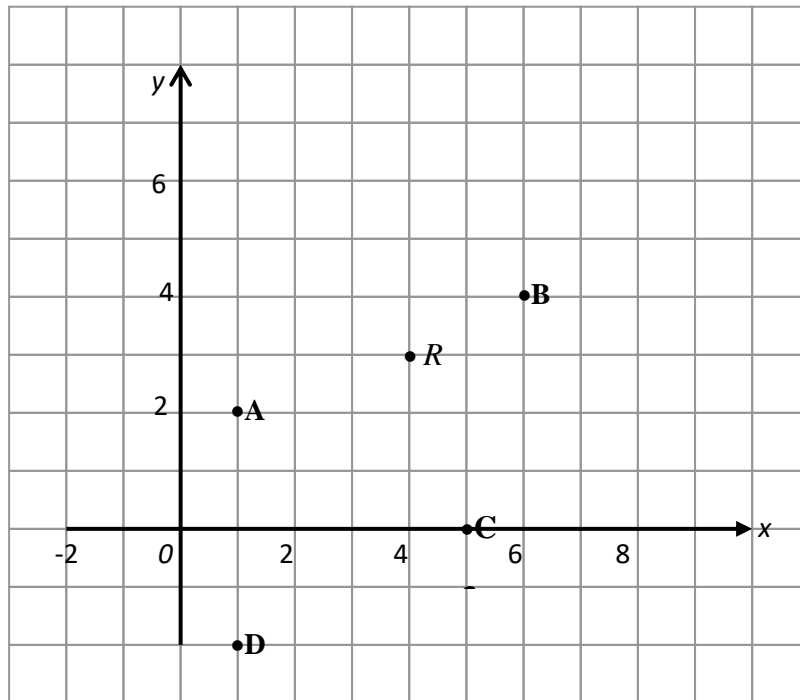
Rajah 5  
Diagram 5

Antara yang berikut, yang manakah translasi yang betul?  
*Which of the following is the correct translation?*

	<b>Segitiga</b> <i>Triangle</i>	<b>Imej</b> <i>Image</i>	<b>Vektor translasi</b> <i>Vector of translation</i>
<b>A</b>	$W$	$X$	$\begin{pmatrix} 5 \\ 2 \end{pmatrix}$
<b>B</b>	$X$	$Y$	$\begin{pmatrix} 0 \\ 4 \end{pmatrix}$
<b>C</b>	$Y$	$Z$	$\begin{pmatrix} -2 \\ 1 \end{pmatrix}$
<b>D</b>	$Z$	$W$	$\begin{pmatrix} 2 \\ 5 \end{pmatrix}$



10. Dalam Rajah 6, menunjukkan titik-titik yang di plot pada satah Cartes.  
*In the Diagram 6, shows points plotted on Cartesian plane.*



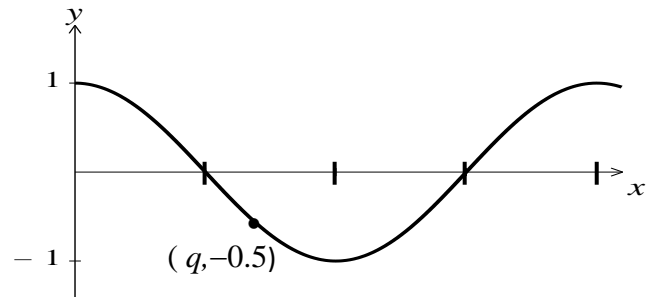
Rajah 6  
 Diagram 6

Tentukan samada titik **A**, **B**, **C** atau **D** merupakan imej bagi titik **R** di bawah putaran  $90^\circ$  lawan arah jam pada pusat  $(3, 1)$ .

*Determine which of the point, **A**, **B**, **C** or **D**, is the image of point **R** under a  $90^\circ$  anticlockwise rotation about the centre  $(3, 1)$ .*

11. Rajah 7 menunjukkan graf  $y = \cos x^\circ$ .

Diagram 7 shows the graph of  $y = \cos x^\circ$ .



Rajah 7  
Diagram 7

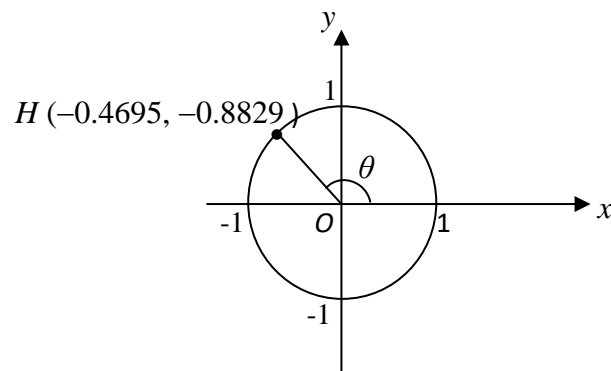
Cari nilai  $q$ .

Find the value of  $q$ .

- A  $90^\circ$
- B  $120^\circ$
- C  $150^\circ$
- D  $210^\circ$

12. Rajah 8,  $O$  ialah pusat bagi satu bulatan.

Diagram 8,  $O$  is the centre of a unit circle.



Rajah 8  
Diagram 8

Cari nilai  $\sin \theta$ .

Find the value of  $\sin \theta$ .

- A  $-0.8829$
- B  $-0.4695$
- C  $0.8829$
- D  $0.4695$

13. Antara yang berikut, yang manakah merupakan kelemahan penggunaan kad kredit?  
*Which of the following is the weakness of using card credit?*

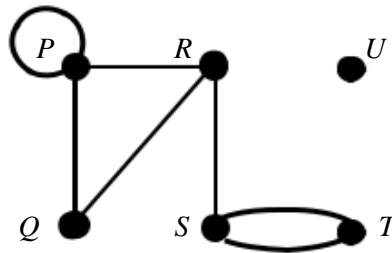
- I. Mudah untuk pembelian atas talian  
*Easy to purchase online*
  - II. Boleh dikenakan faedah dan caj-caj.  
*May incur interest and charges*
  - III. Memberi tempoh bayar balik tanpa faedah.  
*Provide an interest-free repayment period.*
  - IV. Mudah berbelanja melebihi kemampuan.  
*Easy to shop beyond ability*
- A I dan / *and* II  
B I dan / *and* III  
C II dan / *and* III  
D II dan / *and* IV

14. Encik Malek menyimpan sebanyak RM6500 di sebuah bank dengan kadar faedah mudah 3.5% setahun. Hitung jumlah simpanan Encik Malek pada akhir tahun keempat.  
*Mr Malek deposits RM6500 in a bank which pays a simple interest rate of 3.5% per annum. Calculate the total savings of Mr Malek at the end of the fourth year.*

- A RM 910  
B RM 6910  
C RM 7410  
D RM 15600

15. Rajah 9 menunjukkan sebuah graf.

*Diagram 9 shows a graph.*



Rajah 9  
Diagram 9

*Which of the following statement is true about the graph?*

Antara pernyataan berikut, yang manakah benar mengenai graf itu?

- A** Graf ini ialah graf terarah.  
*This graph is a directed graph.*
- B** Bilangan darjah bagi bucu  $Q$  ialah 3.  
*The degree of vertex  $Q$  is 3.*
- C** Bilangan darjah graf itu ialah 13.  
*The sum of degree of the graph is 13.*
- D**  $V = \{P, Q, R, S, T, U\}$  dan / and  $E = \{(P, P), (P, Q), (P, R), (R, Q), (R, S), (S, T), (S, T)\}$

16. Antara bilangan darjah berikut, yang manakah boleh dilukis sebagai satu graf?

*Which of the following sum of degrees can be drawn as a graph?*

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

17. Jadual 1 menunjukkan pendapatan bulanan Encik Muthu.

*Table 1 shows Mr Muthu income in a month.*

Gaji / Salary	RM 2810
Elaun / Allowance	RM 330
Sewa Diterima / Rental received	RM 510
Bonus / Bonus	RM 270

Jadual 1

Table 1

Hitung pendapatan aktif Encik Muthu.

*Calculate active income of Mr. Muthu.*

- A** RM 2810
- B** RM 3140
- C** RM 3410
- D** RM 3920

18. Jadual 2 menunjukkan pelan kewangan Encik Adam.

*Table 2 shows Mr Adam's financial plan.*

<b>Pendapatan / Income</b>	<b>Pelan Kewangan / Financial plan (RM)</b>	
Pendapatan bersih / <i>Net income</i>	3500	
Pendapatan pasif / <i>Passive income</i>	250	
Jumlah pendapatan bulanan / <i>Total monthly income</i>	3750	
Tolak simpanan dana kecemasan / <i>Minus emergency fund savings</i>	150	
Baki pendapatan / <i>Remaining income</i>	3600	

<b>Perbelanjaan tetap bulanan / Monthly fixed expenses</b>	<b>Pelan Kewangan / Financial plan (RM)</b>	
Pinjaman perumahan / <i>Housing loan</i>	750	
Pinjaman kereta / <i>Car loan</i>	450	
Perbelanjaan tetap bulanan / <i>Monthly fixed expenses</i>	1000	
Jumlah perbelanjaan tetap bulanan / <i>Total monthly fixed expenses</i>	2200	

<b>Perbelanjaan tidak tetap bulanan / Irregular monthly expenses</b>	<b>Pelan Kewangan / Financial plan (RM)</b>	
Makanan & Minuman / <i>Food &amp; Drinks</i>	500	
Petrol / <i>Petrol</i>	200	
Bil telefon / <i>Phone bill</i>	200	
Bil utility / <i>Utility bill</i>	300	
Pelancongan / <i>Tourism</i>	200	
Jumlah perbelanjaan tidak tetap bulanan / <i>Total irregular monthly expenses</i>	1400	

Jadual 2

*Table 2*

Antara pernyataan yang berikut, yang manakah tidak benar?

*Which of the following statements is not true?*

- A** Tiada lebihan pendapatan bagi Encik Adam  
*There is no excess income for Mr Adam*
- B** Encik Adam perlu kurangkan perbelanjaan bil telefon, bil utiliti dan pelancongan  
*Mr Adam needs to cut down on telephone bills, utility bills and tourism*
- C** Encik Adam boleh membeli telefon baharu yang berharga RM3000  
*Mr Adam can buy a new phone worth RM3000*
- D** Encik Adam perlu menambah pendapatan pasif beliau.  
*Mr. Adam needs to increase his passive income.*

19.  $3p(p - q) - (2p - q)^2 =$

- A**  $-p^2 + 7pq - q^2$   
**B**  $-p^2 - 7pq + q^2$   
**C**  $-p^2 - pq + q^2$   
**D**  $-p^2 + pq - q^2$

20. Ungkapkan  $\frac{2}{3n} - \frac{3-2n}{6n^2}$  sebagai satu pecahan tunggal dalam bentuk termudah.

*Express  $\frac{2}{3n} - \frac{3-2n}{6n^2}$  as a single fraction in its simplest form.*

- A**  $-\frac{1}{n}$   
**B**  $\frac{n-3}{n^2}$   
**C**  $\frac{n-2}{2n^2}$   
**D**  $\frac{2n-1}{2n^2}$

21. Diberi  $6x - \frac{y}{2} = 2x - 3y$ , ungkapkan  $x$  dalam sebutan  $y$ .

*Given  $6x - \frac{y}{2} = 2x - 3y$ , express  $x$  in terms of  $y$ .*

- A**  $x = -10y$   
**B**  $x = -\frac{5}{2}y$   
**C**  $x = -\frac{7}{8}y$   
**D**  $x = -\frac{5}{8}y$

22.  $\left(-\frac{r}{s}\right)k^{-2}$  boleh ditulis sebagai  
 $\left(-\frac{r}{s}\right)k^{-2}$  can be written as

- A**  $-\frac{rk^2}{s}$   
**B**  $-\frac{r}{sk^2}$   
**C**  $-\frac{sk^2}{r}$   
**D**  $-\frac{s}{rk^2}$

23. Ringkaskan yang berikut.  
*Simplify the following.*

$$\frac{(27n^3)^{\frac{1}{3}} \times n^2p^{-3}}{27p}$$

- A  $\frac{n^3}{p^4}$   
 B  $\frac{n^5}{9p^4}$   
 C  $\frac{n^3}{9p^4}$   
 D  $\frac{n^5}{p^4}$
24. Remy telah menjalani pembedahan hidung dengan kos perubatan sebanyak RM 6800. Polisi insurans perubatan dan kesihatan yang diambil oleh Remy Ishak ialah seperti berikut.

*Remy has undergone nose surgery with a medical cost of RM 6800. The medical and health insurance's policy taken by him is as following:*

Deduktibel/ *Deductible*: RM 800

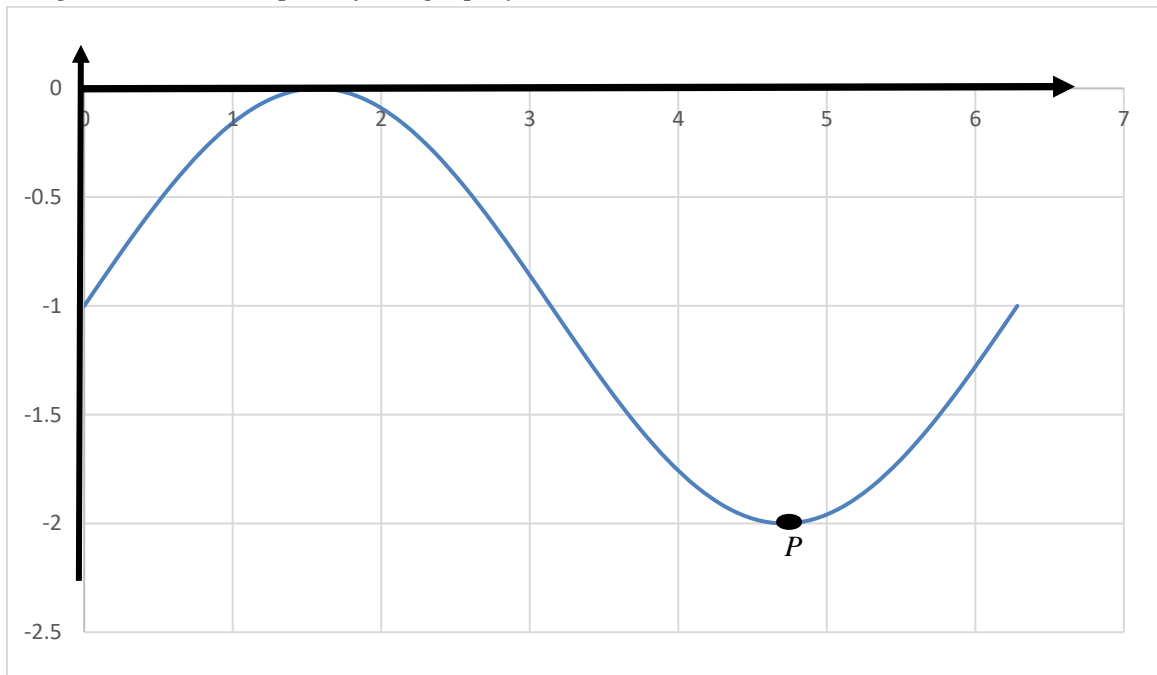
Ko-insurans / *co-insurance*: 60/40

Berapakah wang yang perlu dibayar oleh Remy kepada pihak hospital?  
*How much money does Remy has to pay to the hospital?*

- A RM 2400  
 B RM 3200  
 C RM 3600  
 D RM 4400

25. Rajah 10 menunjukkan sebahagian dari graf  $y = \sin x - 1$ .

*Diagram 10 shows a part of the graph  $y = \sin x - 1$*



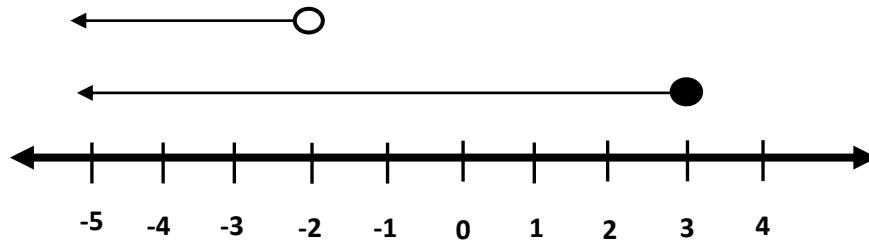
*Rajah 10*  
*Diagram 10*

Koordinat  $P$  ialah  
*Coordinate of  $P$  is*

- A**  $(270^\circ, -2)$
- B**  $(180^\circ, -2)$
- C**  $(90^\circ, -2)$
- D**  $(45^\circ, -2)$



26. Rajah 11 mewakili dua ketaksamaan linear serentak pada satu garis nombor.  
*Diagram 11 represents two simultaneous linear inequalities in a number line.*



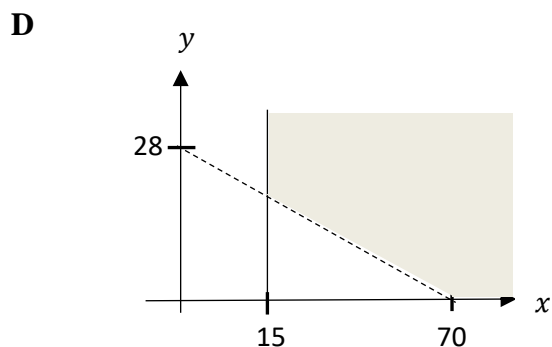
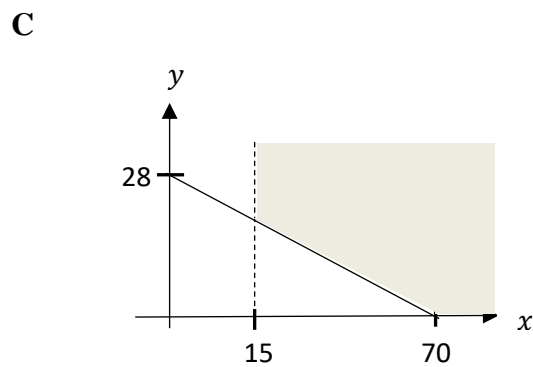
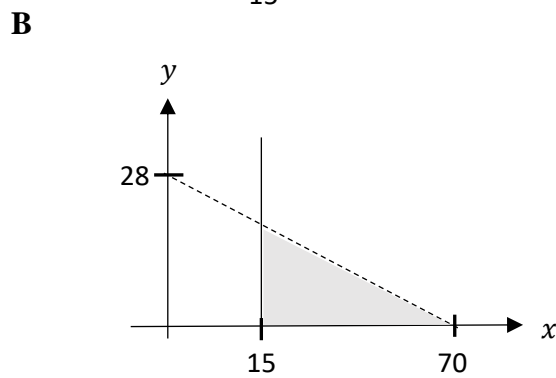
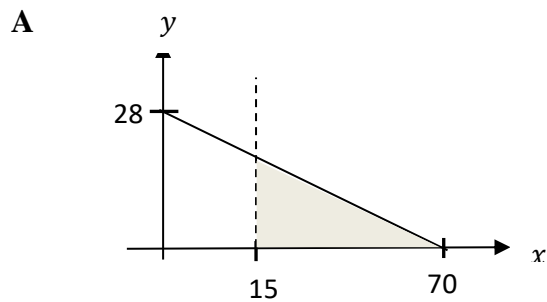
Rajah 11  
*Diagram 11*

Antara yang berikut, yang manakah mewakili bahagian sepunya kedua-dua ketaksamaan itu?  
*Which of the following inequality represents the common part of both the inequalities?*

- A**  $x \leq 3$
- B**  $x < 3$
- C**  $x \leq -2$
- D**  $x < -2$

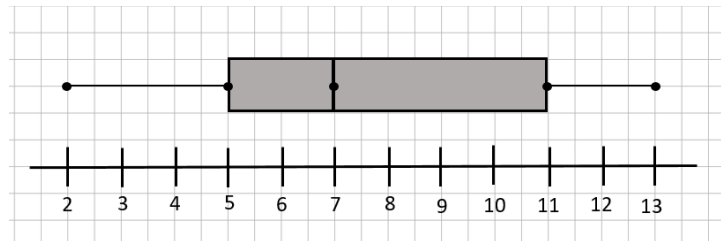
27. Puan Zaida menjual tudung dan telekung untuk mengumpul dana untuk disumbangkan kepada petugas barisan hadapan. Harga bagi sehelai tudung ialah RM 10 dan harga bagi sepasang telekung ialah RM 25. Puan Zaida perlu menjana sekurang-kurangnya RM 700. Puan Zaida tahu dia akan menjual lebih daripada 15 helai tudung. Antara kawasan berlorek berikut, yang manakah mewakili penyelesaian yang memuaskan situasi Puan Zaida itu?

*Madam Zaida sells hijab and prayer rope to collect the fund for donation for the frontliner officers. The price for the hijab is RM 10 and the price for a pair of prayer rope is RM 25. Madam Zaida need to generate at least RM 700. Madam Zaida knows she will sell more than 15 pieces of hijab. Which of the following shaded region represent the solution that satisfies the Madam Zaida's situation?*



28. Rajah 12 menunjukkan plot kotak bagi masa kuarantin bagi 200 pesakit positif Covid-19 daerah Pasir Gudang.

*Diagram 12 shows a box plot of quarantine duration for 200 positive Covid-19 patients at Pasir Gudang Johor.*



Rajah 12

Diagram 12

Cari julat antara kuartil bagi masa kuarantin pesakit positif covid-19.

*Find the interquartile range for the quarantine period for positive covid-19 patients.*

- A 6 pesakit / patients
  - B 7 pesakit / patients
  - C 11 pesakit / patients
  - D 13 pesakit / patients
29. Julat bagi satu set nombor  $y, 3y, 5y, 7y, 9y$  yang disusun secara menaik ialah 16. Cari nilai min bagi set nombor ini.
- Range for a set of number  $y, 3y, 5y, 7y, 9y$  which in an ascending order is 16. Find the mean for this set of number.*

- A 2
- B 10
- C 10.4
- D 40

30. Antara berikut yang manakah **bukan** tujuan percukaian?

*Which of the following is **not** a purpose of taxation?*

- A Untuk membiayai projek pembangunan negara.  
*To finance the country's development projects.*
- B Kawalan penjualan barangan atau perkhidmatan.  
*Control sales of good or services.*
- C Alat kewangan untuk menstabilkan ekonomi.  
*Financial tool to stabilise the economy.*
- D Mengurus perbelanjaan hidup, hutang dan komitmen sekiranya anda tidak mampu bekerja.  
*Managing living expenses debts and commitments in the event that you are unable to work.*

31. Rediwan mempunyai jumlah pendapatan tahunan sebanyak RM 63 550 pada tahun 2020. Beliau telah mendermakan sebanyak RM 500 kepada rumah anak yatim yang telah diluluskan oleh kerajaan. Jadual 3 menunjukkan pelepasan cukai yang dituntutnya.  
*Rediwan has total annual income RM 63 550 for year 2020. He donates RM 500 to the orphanage home that government-approved. Table 3 shows the tax reliefs claimed by him.*

<b>Pelepasan cukai / Tax relief</b>	<b>Amaun / Amount (RM)</b>
Individu / Individual	RM 8000
Insurans perubatan (had RM2000) <i>Medical insurance (limited to RM 2000)</i>	RM 2500
Insurans hayat dan KWSP (had RM 6500) <i>Life insurance and EPF (limited to RM6500)</i>	RM 4500

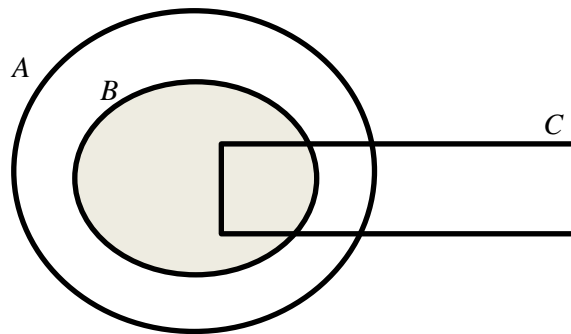
Jadual 3  
 Table 3

Hitung pendapatan bercukai bagi Rediwan  
*Calculate the chargeable income of Rediwan.*

- A RM 46550
- B RM 48050
- C RM 48550
- D RM 49050

32. Rajah 13 ialah gambar rajah Venn yang menunjukkan hubungan antara set  $A$ , set  $B$  dan set  $C$ .

*Diagram 13 is a Venn diagram that shows the relationship between set  $A$ , set  $B$  and set  $C$ .*



Rajah 13  
Diagram 13

Diberi bahawa set semesta  $\xi = A \cup B \cup C$ . Antara yang berikut yang manakah benar mewakili kawasan berlorek?

*Given that the universal set  $\xi = A \cup B \cup C$ . Which of the following is true represents the shaded region?*

- A**  $(A \cup B) \cap C'$   
**B**  $(B \cap C) \cap A$   
**C**  $(A \cap B) \cap C'$   
**D**  $(B \cup C) \cap A$
33. Diberi bahawa:  
 $\xi = \{x: 15 \leq x < 40\}$   
 $J = \{x : \text{gandaan } 5\}$   
 $K = \{x: \text{faktor bagi } 100\}$

*Given that:*

$$\xi = \{x: 15 \leq x < 40\}$$

$$J = \{x : \text{multiple of } 5\}$$

$$K = \{x: \text{factor of } 100\}$$

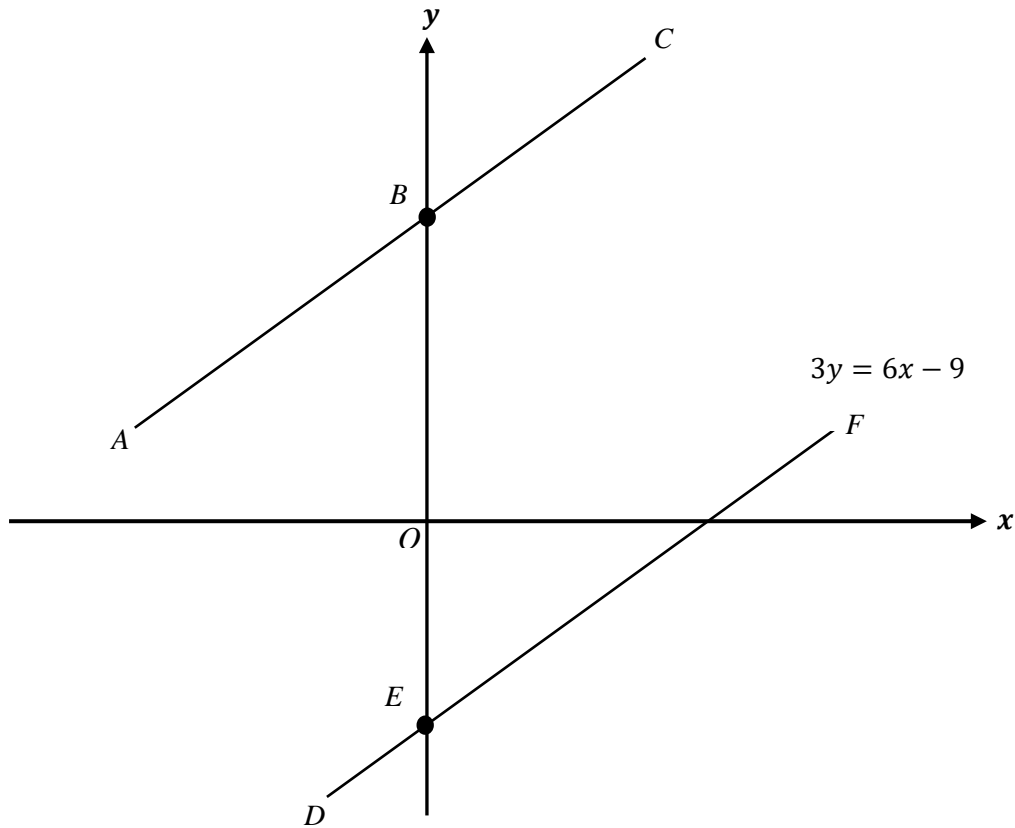
Tentukan nilai bagi  $n(J \cap K)'$

*Determine the value of  $n(J \cap K)'$ .*

- A** 23  
**B** 24  
**C** 3  
**D** 2

34. Rajah 14 menunjukkan dua garis lurus. Diberi bahawa garis  $ABC$  dan garis  $DEF$  adalah garis selari dan  $OB : OE = 2 : 1$

*Diagram 14 shows two straight lines. Given that straight lines  $ABC$  and  $DEF$  are parallel to each other and  $OB : OE = 2:1$ .*

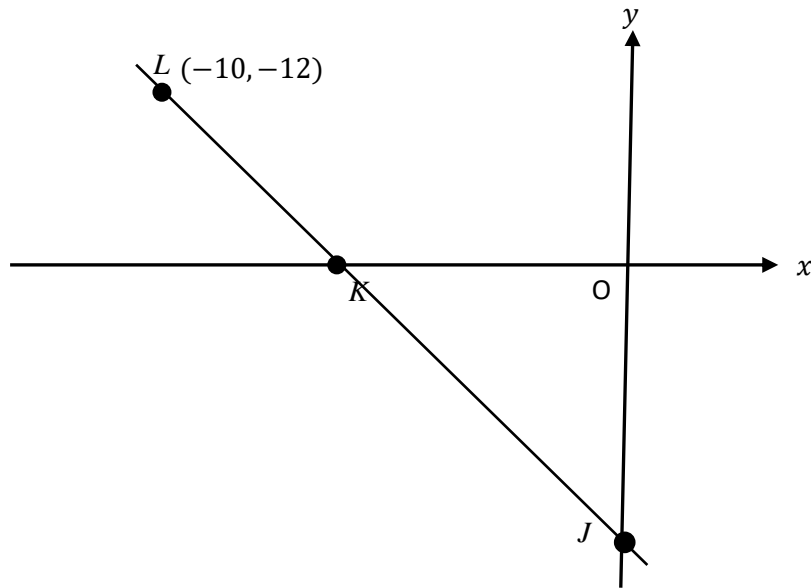


Rajah 14  
Diagram 14

Cari persamaan bagi  $ABC$   
*Find the equation for  $ABC$*

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

35. Rajah 15 menunjukkan garis lurus  $JKL$  di atas satu satah Cartes.  
*Diagram 15 shows a straight line  $JKL$  in a Cartesian plan.*



Rajah 15  
 Diagram 15

Diberi  $OJ : OK = 3 : 1$ . Cari pintasan-y bagi garis lurus  $JKL$ .  
*Given  $OJ : OK = 3 : 1$ . Find the y-intercept for straight line  $JKL$ .*

- A**      $-14$   
**B**      $-24$   
**C**      $-33$   
**D**      $-42$
36. Sebanyak 7 dari 20 alat ujian pengesanan COVID-19 dalam sebuah kotak adalah didapati rosak. Dua alat ujian pengesanan COVID-19 di ambil secara rawak daripada kotak tersebut. Hitung kebarangkalian bahawa kedua-dua alat ujian pengesanan itu dalam keadaan elok.  
*7 out of 20 COVID-19 test kit in a box are damage. Two COVID-19 test kit are randomly chosen from the box. Calculate the probability of both of the test kits are in good condition.*

- A**      $\frac{39}{100}$   
**B**      $\frac{1}{20}$   
**C**      $\frac{39}{95}$   
**D**      $\frac{169}{400}$

37. Kebarangkalian Sadiqah untuk melanjutkan pelajaran ke United Kingdom dan Australia masing-masing adalah 0.71 dan 0.63. Apakah kebarangkalian bahawa Sadiqah akan dapat melanjutkan pelajaran ke salah satu negara?

*Probability of Sadiqah to further her studies to United Kingdom and Australia are 0.71 and 0.63 respectively. What is the probability of her to further her studies in either one of the countries?*

- A** 0.4454  
**B** 0.4473  
**C** 0.797  
**D** 0.5527

38. Jadual 4 menunjukkan beberapa nilai bagi pembolehubah  $x$  dan  $y$ .

*Table 4 shows some values of variables  $x$  and  $y$*

$x$	2	4
$y$	16	$T$

Jadual 4

Table 4

Diberi bahawa  $x$  berubah secara songsang dengan punca kuasa dua  $y$ . Hitung nilai  $T$

*Given that  $x$  varies inversely as square root of  $y$ . Calculate the value of  $T$*

- A** 64  
**B** 4  
**C**  $\frac{1}{4}$   
**D**  $\frac{1}{64}$

39. Ketumpatan,  $\rho$  satu kontena berubah secara langsung dengan jisim,  $m$  dan secara songsang dengan isipadu,  $V$ . Diberi bahawa  $\rho = 500 \text{ kgm}^{-3}$ ,  $m = 100\text{kg}$  dan  $V = 25\text{m}^3$ . Hitung nilai jisim  $m$  apabila  $\rho = 150 \text{ kgm}^{-3}$  dan  $V = 50 \text{ m}^3$ .

*Density,  $\rho$  of a container varies directly as mass  $m$  and inversely as volume,  $V$ . Given that  $\rho = 500 \text{ kgm}^{-3}$ ,  $m = 100\text{kg}$  and  $V = 25\text{m}^3$ . Calculate the mass  $m$  when  $\rho = 150 \text{ kgm}^{-3}$  and  $V = 50 \text{ m}^3$ .*

- A** 375 kg  
**B** 200 kg  
**C** 60 kg  
**D** 30 kg



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

**A**  $\begin{pmatrix} -2 & -5 \end{pmatrix}$

**B**  $\begin{pmatrix} 2 & 11 \end{pmatrix}$

**C**  $\begin{pmatrix} 2 \\ -11 \end{pmatrix}$

**D**  $\begin{pmatrix} -6 \\ -5 \end{pmatrix}$

QUESTION PAPER END  
KERTAS SOALAN TAMAT