

### F1, 1.1 NOMBOR NISBAH (INTEGER, PECAHAN, PERPULUHAN, GARIS NOMBOR, +, -, ×, ÷ & GABUNGAN OPERASI)

Trial 2023, JOHOR (SET 2), Q6, Ans: D

- 1 Apakah nilai yang sesuai diletakkan di dalam kotak di bawah?

What is the appropriate value placed in the box below?

$$5.05 + \frac{2}{5} \times (-3.5) = \boxed{\phantom{000}} \times 2.4$$

- A  $\frac{43}{16}$   
 B  $\frac{16}{16}$   
 C  $\frac{43}{48}$   
 D  $\frac{73}{48}$

### F1, 2.1 FAKTOR DAN GANDAAN (FSTB, GSTK,)

### F1, 3.1 KUASA DUA, PUNCA KUASA DUA, KUASA TIGA DAN PUNCA KUASA TIGA (+, -, ×, ÷ & GABUNGAN OPERASI)

Trial 2023, P.GUDANG (SET 1), Q2, Ans: A

- 2 Antara yang berikut, yang manakah BENAR berkaitan dengan punca kuasa dua sempurna?

Which of the following is TRUE regarding the perfect square root?

- A  $\sqrt{36} = \sqrt{6 \times 6}$   
 B  $\sqrt{64} = \sqrt{2 \times 32}$   
 C  $\sqrt{24} = \sqrt{4.9 \times 4.9}$   
 D  $\sqrt{45} = \sqrt{3 \times 15}$

### F2 4.1 NISBAH ( $a : b : c$ ), KADAR (PERTUKARAN UNIT), KADARAN (KAEDAH TERMASUK PENDARABAN SILANG DAN KAEDAH UNITARI)

Trial 2023, SMKA/SABK (SET1), Q31, Ans: C

- 3 Maklumat di bawah menunjukkan nisbah skor yang diperoleh Kumpulan P dan Kumpulan Q dalam suatu pertandingan kuiz.

The information below shows the ratio of scores obtained by Group P and Group Q in a quiz competition

Nisbah skor Kumpulan P	Nisbah skor Kumpulan Q
Cheng : Rahimi : Hussin	Nureen : Bala : Shanthy
5 : 4 : 7	3 : 2 : 1

Jumlah skor yang diperoleh Kumpulan P ialah 144 manakala jumlah skor yang diperoleh Kumpulan Q ialah 168. Cari hasil tambah skor Rahimi dan Nureen.

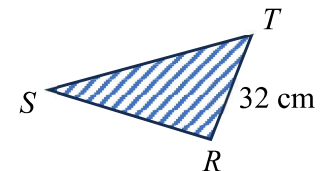
The total score obtained by Group P is 144 while the total score obtained by Group Q is 168. Find the sum of the scores of Rahimi and Nureen.

- A 60  
 B 84  
 C 120  
 D 147

Trial 2023, SBP, Q11, Ans: C

- 4 Rajah 7 menunjukkan sebuah segi tiga RST.

Diagram 7 shows a triangle RST.



Diberi nisbah  $RS : ST : TR = 1 : 2 : \frac{1}{2}$ . Hitung perimeter, dalam cm, segi tiga RST.

Given ratio  $RS : ST : TR = 1 : 2 : \frac{1}{2}$ . Calculate the perimeter, in cm, of triangle RST.

- A 104  
 B 112  
 C 224  
 D 256

### F1, 5.1 UNGKAPAN ALGEBRA

Trial 2023, SBP, Q22, Ans: C

- 5 Azman membeli 8 biji kek coklat dengan harga RM $y$  setiap satu, 4 potong kek strawbri dengan jumlah harga RM16 dan 4 biji kek tiramisu dengan harga RM4 $y$  setiap satu.

Ungkapkan jumlah harga kek yang dibayar dalam sebutan  $y$ .

Azman bought 8 chocolate cakes at the price of RM $y$  each, 4 slices of strawberry cakes at the price of RM16 and 4 tiramisu cakes at the price of RM4 $y$  each. Express the total price of cakes in terms of  $y$ .

- A  $12y + 16$   
 B  $12y + 64$   
 C  $24y + 16$   
 D  $24y + 64$

Trial 2023, JUJ Pahang, Q28, Ans: A

- 6 Diberi  $3p - 4q = \frac{8+pq}{5}$ , ungkapkan  $q$  dalam sebutan  $p$ .  
Given that  $3p - 4q = \frac{8+pq}{5}$ , express  $q$  in terms of  $p$ .
- A  $q = \frac{15p-8}{20+p}$
- B  $q = \frac{8-15p}{p+20}$
- C  $q = \frac{15p+8}{p+20}$
- D  $q = \frac{8+15p}{20-p}$

Trial 2023, UD3 Melaka, Q6, Ans: B

- 7 Diberi  $5r^2 = 3t + 4s$ . Ungkapkan  $t$  dalam sebutan  $r$  dan  $s$ .  
Given  $5r^2 = 3t + 4s$ . Express  $t$  in term of  $r$  and  $s$ .
- A  $t = \frac{5r^2+4s}{3}$
- B  $t = \frac{5r^2-4s}{3}$
- C  $t = \frac{5r^2}{3} - 4s$
- D  $t = \frac{5r^2}{3} + 5r^2$

Trial 2023, JOHOR (SET 2), Q18, Ans: B

- 8 Diberi bahawa  $8 - \frac{2}{r^3} = 2s$ . Ungkapkan  $r$  dalam sebutan  $s$ .  
Given that  $8 - \frac{2}{r^3} = 2s$ . Express  $r$  in terms of  $s$ .
- A  $\sqrt[3]{\frac{1}{s-4}}$
- B  $\sqrt[3]{\frac{1}{4-s}}$
- C  $\sqrt[3]{4-s}$
- D  $\sqrt[3]{s-4}$

### F1, 6.1 PERSAMAAN LINEAR

Trial 2023, SMKA/SABK (SET1), Q3, Ans: D

- 9 Diberi  $\frac{x+1}{5} = \frac{2x-1}{2}$ , hitung nilai  $x$ .  
Given  $\frac{x+1}{5} = \frac{2x-1}{2}$ , calculate the value of  $x$
- A  $\frac{1}{4}$
- B  $\frac{3}{4}$
- C  $\frac{7}{9}$

D  $\frac{7}{8}$

Trial 2023, SABK/SMKA (SET 2), Q16, Ans: C

- 10 Jadual 1 menunjukkan maklumat bagi buku yang dibeli oleh Muhd Fauzi.  
The table 1 shows the information of books bought by Muhd Fauzi.

Mata Pelajaran Subject	Harga sebuah buku Price per book
Matematik/ Mathematics	RM 12.70
Sains/ Science	RM 8.50

Muhd Fauzi telah membeli 7 buah buku dan membayar dengan sekeping wang kertas RM100. Dia mendapat pulangan baki sebanyak RM23.70. Berapakah jumlah buku matematik yang dibeli oleh Muhd Fauzi?

Muhd Fauzi bought 7 books and paid with a RM100 note. He got the balance of RM23.70. How many mathematics books did Muhd Fauzi buy?

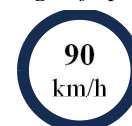
- A 2
- B 3
- C 4
- D 5

### F1, 6.2 PERSAMAAN LINEAR SERENTAK (TANPA KAEDAH MATRIKS)

### F1, 7.1 KETAKSAMAAN LINEAR (GARIS NOMBOR, SIFAT AKAS, TRANSITIF, SONGSANGAN TERHADAP PENAMBAHAN/PENDARABAN)

Trial 2023, SMKA/SABK (SET1), Q17, Ans: D

- 11 Rajah 4 menunjukkan satu papan had laju.  
Diagram 4 shows a sign of speed limit



Diberi  $x$  menandakan kelajuan, dalam km/j, bagi sebuah kenderaan yang dibenarkan. Antara berikut, yang manakah adalah benar?

Given  $x$  represents speed limit, in km/h, for an authorized vehicle. Which of the following is correct?

- A  $x = 90$
- B  $x > 90$
- C  $x < 90$
- D  $x \leq 90$

Trial 2023, JOHOR (SET 2), Q36, Ans: A

- 12 Antara titik berikut, yang manakah memuaskan  $2x - 5y < 11$ ?  
Which of the following points satisfies  $2x - 5y < 11$ ?
- A (2, -1)  
B (3, -2)  
C (5, -1)  
D (6, -4)

Trial 2023, SABK/SMKA (SET 2), Q21, Ans: C

- 13 Senaraikan semua integer  $x$  yang memuaskan ketaksamaan linear  $5 - 2x \leq 7$  dan  $5(x - 3) < x + 5$ .  
List all the integers  $x$  that satisfy the inequalities  $5 - 2x \leq 7$  and  $5(x - 3) < x + 5$ .
- A 0, 1, 2, 3, 4  
B 0, 1, 2, 3, 4, 5  
C -1, 0, 1, 2, 3, 4  
D -1, 0, 1, 2, 3, 4, 5

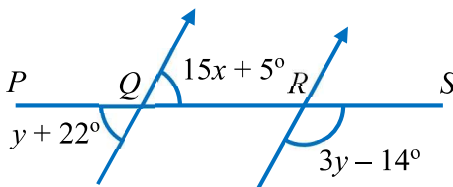
Trial 2023, PERLIS Q25, Ans: B

- 14 Senaraikan semua integer  $k$  yang memuaskan ketaksamaan linear  $k + 3 > 0$  dan  $9k - 20 \leq 16$ .  
List all the integers  $k$  that satisfy the linear inequalities  $k + 3 > 0$  and  $9k - 20 \leq 16$ .
- A -3, -2, -1, 0, 1, 2, 3, 4  
B -2, -1, 0, 1, 2, 3, 4  
C -3, -2, -1, 0, 1, 2, 3  
D -2, -1, 0, 1, 2, 3

### F1, 8.1 GARIS & SUDUT (JENIS & SIFAT KONJUGAT, PENGENAP, PELENGKAP, GARIS BERSILANG/ BERSERENJANG/ SELARI)

Trial 2023, SABK/SMKA (SET 2), Q13, Ans: C

- 15 Dalam Rajah 9,  $PQRS$  ialah garis lurus.  
In Diagram 9,  $PQRS$  is a straight line.



Cari nilai  $y - x$ .

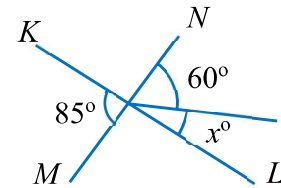
Find the value of  $y - x$ .

- A  $47^\circ$   
B  $43^\circ$   
C  $39^\circ$   
D  $28^\circ$

Trial 2023, SMKA/SABK (SET1), Q10, Ans: C

- 16 Rajah 3 menunjukkan dua garis lurus  $KL$  dan  $MN$ .

Diagram 3 shows two straight lines  $KL$  and  $MN$



Cari nilai  $x$ .

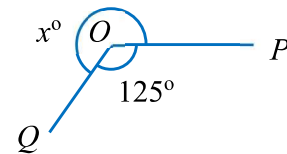
Find the value of  $x$ .

- A  $15^\circ$   
B  $20^\circ$   
C  $25^\circ$   
D  $30^\circ$

Trial 2023, P.GUDANG (SET 1), Q4, Ans: D

- 17 Dalam Rajah 2,  $PO$  dan  $OQ$  ialah dua garisan yang dihubungkan oleh satu sudut  $125^\circ$ .

In Diagram 2,  $PO$  and  $OQ$  are two lines connected by an angle of  $125^\circ$ .



Apakah nama bagi sudut yang bertanda  $x$ ?

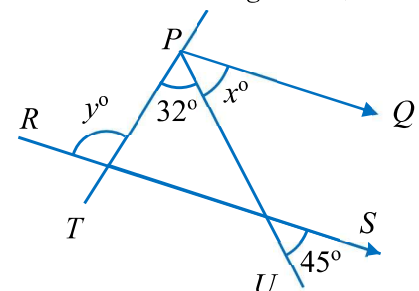
What is the name for the angle marked  $x$ ?

- A Sudut tegak/ Right angle  
B Sudut tirus/ Acute Angle  
C Sudut putaran lengkap/ Complete turning angle  
D Sudut Refleks/ Reflex Angle

Trial 2023, JUJ Pahang, Q39, Ans: C

- 18 Rajah 16 menunjukkan dua garis lurus,  $PT$  dan  $PU$ .

Diagram 16 shows two straight lines,  $PT$  and  $PU$



Cari nilai  $x$  dan  $y$ .

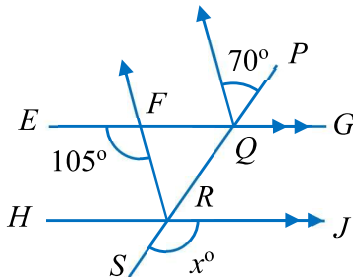
Find the value  $x$  and  $y$ .

- A**  $x = 45^\circ, y = 88^\circ$   
**B**  $x = 48^\circ, y = 88^\circ$   
**C**  $x = 45^\circ, y = 77^\circ$   
**D**  $x = 48^\circ, y = 77^\circ$

Trial 2023, UD3 Melaka, Q9, Ans: D

- 19** Dalam Rajah 1,  $PQRS$ ,  $EFQG$  dan  $HRJ$  ialah garis lurus.

In Diagram 1,  $PQRS$ ,  $EFQG$  and  $HRJ$  are straight lines.



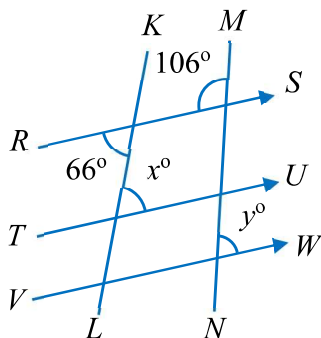
Cari nilai  $x$ .

Find the value of  $x$

- A** 35  
**B** 75  
**C** 125  
**D** 145

Trial 2023, PERLIS Q30, Ans: B

- 20** Rajah 13 menunjukkan tiga garis selari,  $RS$ ,  $TU$  dan  $VW$ .  $KL$  dan  $MN$  ialah garis lurus.  
 Diagram 13 shows three parallel lines,  $RS$ ,  $TU$  and  $VW$ .  $KL$  and  $MN$  is a straight line.



Hitung nilai  $x + y$ .

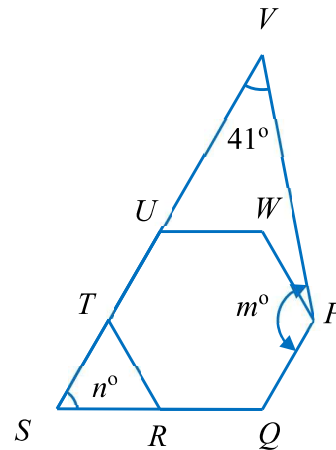
Calculate the value of  $x + y$ .

- A** 114  
**B** 140  
**C** 172  
**D** 188

## F1, 9.1 POLIGON ASAS (SIFAT, SUDUT PELUARAN/ PEDALAMAN, PEPENJURU)

Trial 2023, UD3 Melaka, Q10, Ans: C

- 21** Dalam Rajah 2,  $PQRTUW$  ialah heksagon sekata.  $STUV$  dan  $SRQ$  ialah garis lurus.  
 In Diagram 2,  $PQRTUW$  is a regular hexagon.  $STUV$  and  $SRQ$  are straight lines



Hitung nilai  $m + n$ .

Calculate the value of  $m + n$

- A** 140  
**B** 169  
**C** 199  
**D** 219

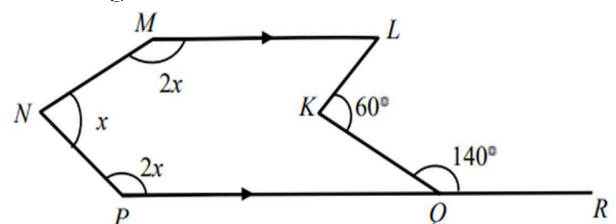
Trial 2023, P.GUDANG (SET 1), Q8, Ans: C

- 22** Hitung jumlah satu sudut peluaran bagi heksagon sekata dan oktagon sekata.  
 Calculate the sum of one exterior angle of a regular hexagon and a regular octagon.

- A**  $45^\circ$   
**B**  $60^\circ$   
**C**  $105^\circ$   
**D**  $255^\circ$

Trial 2023, SABK/SMKA (SET 2), Q6, Ans: C

- 23** Rajah 2 menunjukkan sebuah poligon  $KLMNPQ$ .  $PQR$  ialah garis lurus.  
 Diagram 2 shows a polygon  $KLMNPQ$ .  $PQR$  is a straight line.



Cari nilai  $x$ .

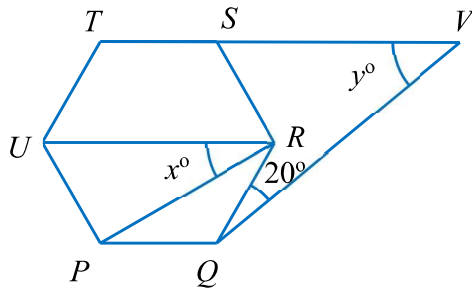
Find the value of  $x$ .

- A  $28^\circ$   
 B  $70^\circ$   
 C  $72^\circ$   
 D  $74^\circ$

Trial 2023, SABK/SMKA (SET 2), Q7, Ans: D

- 24 Rajah 3 menunjukkan sebuah heksagon sekata  $PQRSTU$  dan sebuah sisiempat  $QRSV$ .  $TSV$  adalah garis lurus

Diagram 3 shows a regular hexagon  $PQRSTU$  and a quadrilateral  $QRSV$ .  $TSV$  is a straight line



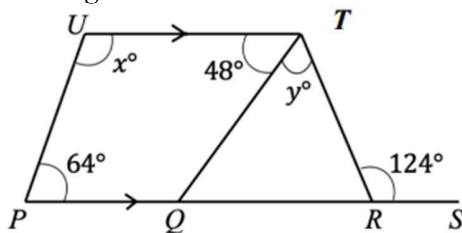
Cari nilai  $x + y$ .

Find the value of  $x + y$

- A 30  
 B 40  
 C 60  
 D 70

Trial 2023, JOHOR (SET 2), Q7, Ans: C

- 25 Dalam rajah 1 di bawah,  $PQRTU$  adalah sebuah trapezium.  $PQRS$  ialah garis lurus. In diagram 1 below,  $PQRTU$  is a trapezoid.  $PQRS$  is a straight line.



Cari nilai  $x^\circ + y^\circ$ .

Find the value of  $x^\circ + y^\circ$ .

- A  $104^\circ$   
 B  $116^\circ$   
 C  $192^\circ$   
 D  $206^\circ$

## F1 10.1 LUAS & PERIMETER

Trial 2023, SMKA/SABK (SET1), Q4, Ans: D

- 26 Luas segi empat sama ialah  $289 \text{ cm}^2$ . Cari perimeter dalam cm, segiempat sama itu  
 The area of a square is  $289 \text{ cm}^2$ .

Find perimeter, in cm, of the square.

- A 17  
 B 34  
 C 60  
 D 68

Trial 2023, SMKA/SABK (SET1), Q7, Ans: C

- 27 Rajah 1 berikut menunjukkan sebuah dewan dan dua buah kelas.

Diagram 1 below shows a hall and two classrooms.



Diberi panjang dan lebar dewan masing-masing ialah 56 m dan 42 m, manakala lebar sebuah kelas ialah  $\frac{2}{3}$  lebar dewan. Jika luas dewan adalah sama dengan luas dua buah kelas, hitung panjang, dalam m, bagi sebuah kelas.

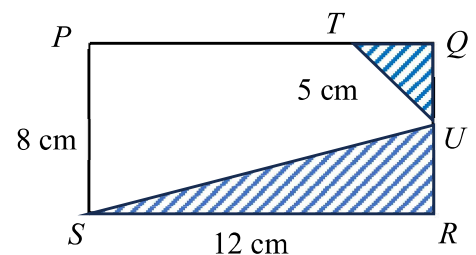
Given that the length and the width of the hall are 56 m and 42 m respectively, while the width of a classroom is  $\frac{2}{3}$  of the width of the hall. If the area of the hall is the same as the area of two classrooms, find the length, in m, of a classroom.

- A 56 m  
 B 37 m  
 C 42 m  
 D 28 m

Trial 2023, SBP, Q23, Ans: D

- 28 Rajah 14 menunjukkan sebuah segi empat tepat  $PQRS$ .

Diagram 14 shows a rectangle  $PQRS$ .



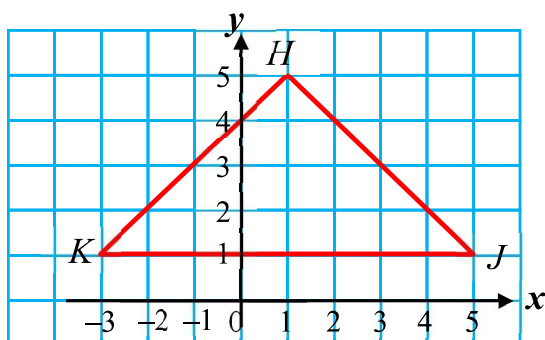
Diberi  $U$  ialah titik tengah bagi  $QR$ . Hitung luas, dalam  $\text{cm}^2$ , kawasan yang tidak berlorek. *Given  $U$  is a midpoint of  $QR$ . Calculate the area, in  $\text{cm}^2$ , of unshaded region.*

- A 30
- B 36
- C 60
- D 66

**Trial 2023, UD3 Melaka, Q33, Ans: C**

29 Rajah 9 menunjukkan segi tiga sama kaki  $HKJ$ .

*Diagram 9 shows an isosceles triangle  $HKJ$*



Hitung perimeter segi tiga tersebut.

*Calculate the perimeter of the triangle.*

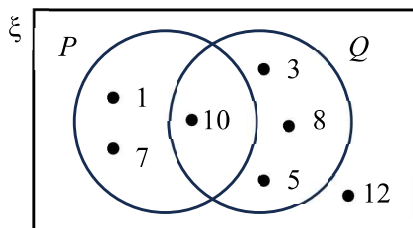
- A 5.657
- B 11.314
- C 19.314
- D 21.667

**F1, 11.1 PENGENALAN SET (PERWAKILAN SET, UNSUR, VENN, SIMBOL, TATATANDA)**

**Trial 2023, SABK/SMKA (SET 2), Q28, Ans: D**

30 Rajah 14 di bawah ialah suatu gambar rajah Venn yang menunjukkan unsur bagi set  $P$ , set  $Q$  dan set semesta  $\xi$

*In Diagram 14 below is a Venn diagram showing the elements of set  $P$ , set  $Q$  and the universal set  $\xi$ .*



Senaraikan semua unsur bagi set  $P'$ .

*List down all the elements of set  $P'$ .*

- A {1, 7}
- B {1, 7, 10}

- C {3, 5, 8}
- D {3, 5, 8, 12}

**Trial 2023, PERLIS Q16, Ans: A**

31 Sempena Kejohanan Sukantara Sekolah, 55 orang murid diminta mendaftar untuk menyertai dua jenis acara sukan. 28 orang murid memilih lompat jauh, 21 orang murid memilih 100 m dan 12 orang murid tidak berjaya mendaftar sebarang acara. Berapakah bilangan murid yang memilih kedua – dua acara sukan tersebut?

*In conjunction of the School Standard Sport Day, 55 students were asked to register to participate in two types of sports events. 28 students chose long jump, 21 students chose 100 m and 12 students failed to register any event. How many students chose both sports events?*

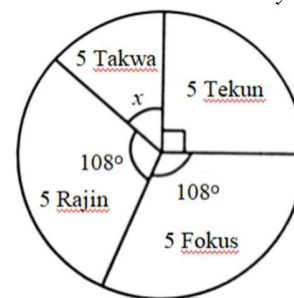
- A 6
- B 7
- C 43
- D 55

**F1, 12.1 PENGENALAN DATA (ANALISIS DATA, PERWAKILAN)**

**Trial 2023, JOHOR (SET 2), Q35, Ans: C**

32 Carta pai pada Rajah 11 menunjukkan bilangan murid Tingkatan 5 yang telah mengikuti kursus komputer secara dalam talian pada suatu hari tertentu.

*The pie chart on Diagram 11 shows the number of Form 5 students who have attended an online computer course on a certain day*



Diberi bilangan murid dari kelas 5 Tekun yang mengikuti kursus komputer dalam talian ialah 20 orang. Hitung bilangan murid dari kelas 5 Takwa yang mengikuti kursus tersebut.

*Given the number of students from 5 Tekun who attended the online computer course is 20. Calculate the number of students from 5 Takwa who attended that course.*

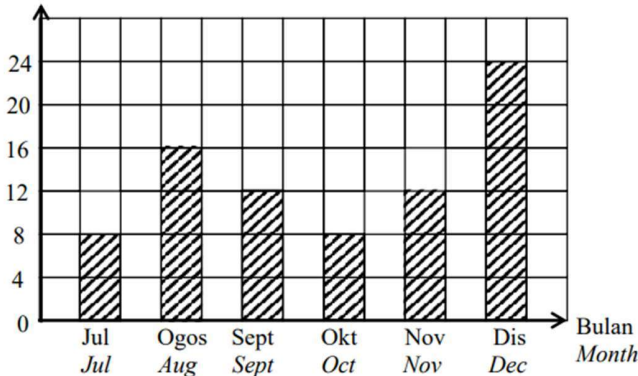
- A 4
- B 8
- C 12
- D 16

**Trial 2023, SABK/SMKA (SET 2), Q25, Ans: D**

**33** Rajah 13 ialah carta palang yang menunjukkan bilangan telefon pintar yang dijual oleh Daniel pada bulan Julai hingga Disember 2022.

Diagram 13 is a bar chart showing the number of smartphones sold by Daniel from July to December 2022.

Bilangan telefon pintar dijual  
Number of smartphones sold



Bilangan telefon pintar yang dijual pada bulan Julai hingga Disember adalah 2.5% kurang daripada bilangan telefon pintar yang dijual pada bulan Januari hingga Jun. Keuntungan yang diperoleh Daniel bagi sebuah telefon pintar ialah RM350. Hitungkan jumlah keuntungan yang diperoleh Daniel dalam tahun itu

The number of smartphones sold from July to December is 2.5% less than the number of smartphones sold from January to June. The profit earned by Daniel for each smartphone sold was RM350. Calculate the total profit earned by Daniel in that year.

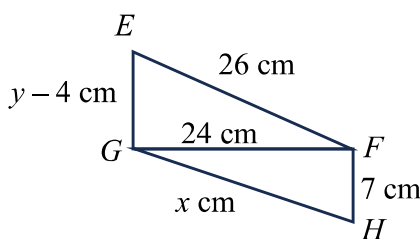
- A RM27 300
- B RM28 000
- C RM55 300
- D RM56 700

**F1, 13.1 TEOREM PYTHAGORAS & AKAS**

**Trial 2023, SBP, Q12, Ans: D**

**34** Rajah 8 menunjukkan dua segi tiga bersudut tegak, EFG dan HGF.

Diagram 8 shows two right-angled triangles, EFG and HGF.



Hitung  $x - y$ .

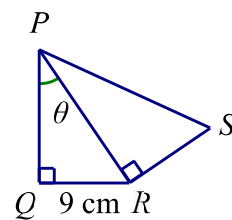
Calculate the value of  $x - y$ .

- A 19 cm
- B 15 cm
- C 12 cm
- D 11 cm

**Trial 2023, SMKA/SABK (SET1), Q19, Ans: D**

**35** Rajah 6 berikut menunjukkan segitiga bersudut tegak PQR dan PRS. Diberi bahawa  $\tan \theta = \frac{3}{4}$  dan  $PS = \frac{5}{3} PR$

Diagram 6 shows right-angled triangles PQR and PRS. Given that  $\tan \theta = \frac{3}{4}$  and  $PS = \frac{5}{3} PR$



Hitung, dalam cm, panjang PS.

Calculate, in cm, the length of PS.

- A 9 cm
- B 15 cm
- C 22 cm
- D 25 cm

**Trial 2023, PERLIS Q32, Ans: D**

**36** Dalam satu pertandingan mencari harta karun, Siti bergerak dari Stesen A ke utara menuju Stesen B sejauh 93 m. Dia kemudian bergerak ke timur menuju ke Stesen C sejauh 37 m. Seterusnya, Siti bergerak pulang ke Stesen A. Dengan mengangap semua pergerakan Siti dalam garis lurus, hitung jarak, dalam m, Stesen A ke Stesen C

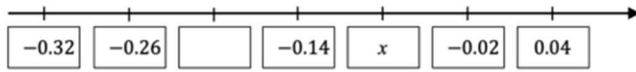
In a treasure hunt competition, Siti moves from Station A to the north towards Station B for a distance of 93 m. He then moves east towards Station C for a distance of 37 m. Next, Siti moves back to Station A. Assuming all of Siti's movements are in a straight line, calculate the distance, in m, from Station A to Station C.

- A 64.50
- B 85.32
- C 100.08
- D 100.09

**F2, 1.1 POLA & JUJUKAN**

Trial 2023, P.GUDANG (SET 1), Q1, Ans: B

- 37 Garis nombor pada Rajah 1 menunjukkan turutan mengikut pola menaik.  
The number line on Diagram 1 shows the sequence in an ascending pattern



Manakah nombor perpuluhan yang sesuai menggantikan  $x$ ?

Which decimal number is suitable to replace  $x$ ?

- A -0.20  
B -0.08  
C 0.08  
D 0.20

### F2, 2.1, PEMFAKTORAN DAN PECAHAN ALGEBRA

Trial 2023, PERLIS Q26, Ans: B

38 
$$\frac{m-n}{3m+n} \div \frac{(m-n)^2}{6m+2n} =$$

- A  $\frac{2}{m+n}$   
B  $\frac{2}{m-n}$   
C  $\frac{(m-n)^3}{18m^2+12mn+2n^2}$   
D  $\frac{6m+2n}{3m^2-2mn-n^2}$

Trial 2023, SBP, Q21, Ans: B

39 Ringkaskan/ Simplify:  
$$\frac{pt+tu}{16t^2-1} \div \frac{p^2-u^2}{16t^2-16t+3}$$

- A  $\frac{pt-tu}{(4t-1)(4t-3)}$   
B  $\frac{4t^2-3t}{(4t+1)(p-u)}$   
C  $\frac{(tp+tu)(4t-3)}{(4t-1)(p-u)}$   
D  $\frac{4t^2+3t}{(4t-1)(p+u)}$

Trial 2023, SABK/SMKA (SET 2), Q20, Ans: A

- 40 Fateh menerima wang saku sebanyak RM( $k^2 - 25$ ) untuk ( $k + 5$ ) hari. Nukman pula menerima wang saku sebanyak RM( $k + 5$ )<sup>2</sup> untuk ( $k^2 - 5^2$ )

hari. Hitung hasil darab wang saku harian Fateh dan Nukman.

Fateh received pocket money of RM( $k^2 - 25$ ) for ( $k + 5$ ) days. Nukman received pocket money of RM( $k + 5$ )<sup>2</sup> for ( $k^2 - 5^2$ ) days. Calculate the product of Fateh and Nukman's daily pocket money.

- A RM( $k + 5$ )  
B RM( $k - 5$ )  
C RM( $k^2 - 5$ )  
D RM( $k^2 - 25$ )

### F2, 3.1, RUMUS ALGEBRA

Trial 2023, SMKA/SABK (SET1), Q6, Ans: C

- 41 Diberi  $t = \frac{2}{3} + \frac{m}{4}$ , ungkapkan  $m$  dalam sebutan  $t$ .

Given  $t = \frac{2}{3} + \frac{m}{4}$ , Express  $m$  in terms of  $t$ .

- A  $m = \frac{3t-2}{3}$   
B  $m = \frac{3t+3}{3}$   
C  $m = \frac{4(3t-2)}{3}$   
D  $m = \frac{4(2+3t)}{3}$

Trial 2023, SABK/SMKA (SET 2), Q18, Ans: C

- 42 Diberi  $L = \sqrt{4M + 3}$ , ungkapkan  $M$  dalam sebutan  $L$ .

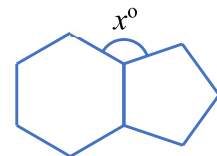
Given  $L = \sqrt{4M + 3}$ , express  $M$  in terms of  $L$ .

- A  $M = \frac{\sqrt{L}-3}{4}$   
B  $M = \sqrt{L} + 3$   
C  $M = \frac{L^2-3}{4}$   
D  $M = \frac{L^2+3}{4}$

### F2, 4.1, POLIGON

Trial 2023, JUJ Pahang, Q7, Ans: A

- 43 Rajah 1 menunjukkan gabungan sebuah heksagon sekata dan sebuah pentagon sekata. Diagram 1 shows a combination of a regular hexagon and a regular pentagon.



Tentukan nilai  $x$ .

Determine the value of  $x$ .

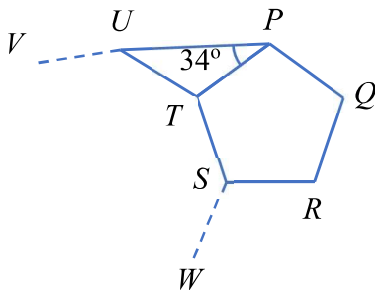


- A  $132^\circ$   
 B  $145^\circ$   
 C  $150^\circ$   
 D  $154^\circ$

**Trial 2023, PERLIS Q31, Ans: B**

- 44 Rajah 14 menunjukkan sebuah pentagon sekata  $PQRST$  dan sebuah segi tiga sama kaki  $PTU$ .  $WSTUV$  ialah sebahagian daripada sebuah poligon sekata

Diagram 14 shows a regular pentagon  $PQRST$  and an isosceles triangle  $PTU$ .  $WSTUV$  is part of a regular polygon.



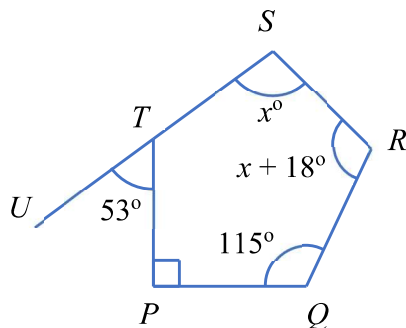
Cari bilangan sisi bagi poligon sekata yang tidak lengkap itu.

Find the number of sides of the incomplete regular polygon.

- A 8  
 B 9  
 C 10  
 D 11

**Trial 2023, JUJ Pahang, Q34, Ans: C**

- 45 Rajah 14 menunjukkan sebuah pentagon  $PQRST$  dan  $UTS$  ialah suatu garis lurus. Diagram 14 shows a pentagon  $PQRST$  and  $UTS$  is a straight line.



Cari nilai  $x$ .

Find the value of  $x$ .

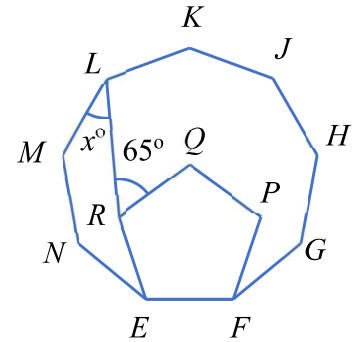
- A 85  
 B 90

- C 95  
 D 100

**Trial 2023, SBP, Q4, Ans: C**

- 46 Rajah menunjukkan dua poligon sekata,  $EFGHJKLMN$  dan  $EFPQR$ .

Diagram shows two regular polygons,  $EFGHJKLMN$  and  $EFPQR$ .



Tentukan nilai  $x$ .

Determine the value of  $x$ .

- A  $29^\circ$   
 B  $40^\circ$   
 C  $41^\circ$   
 D  $56^\circ$

**Trial 2023, SMKA/SABK (SET1), Q8, Ans: C**

- 47 Antara pernyataan berikut, yang manakah benar mengenai poligon sekata?

Which of the following statements is true about a regular polygon?

A Sebuah poligon sekata mempunyai sisi yang tidak sama panjang  
 A regular polygon has irregular sides.

B Saiz sudut pedalaman poligon sekata adalah tidak sama.

The interior angles of a regular polygon are unequal.

C Bilangan paksi simetri bagi sebuah poligon sekata adalah sama dengan bilangan sisi poligon itu.

The number of axes of symmetry of a regular polygon is equal to the number of sides of the polygon.

D Hasil tambah sudut peluaran dan sudut pedalaman sebuah poligon sekata ialah  $360^\circ$

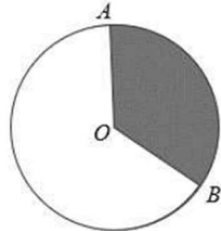
The sum of exterior angles and interior angles of a regular polygon is  $360^\circ$

## F2, 5.1, PANJANG LENGKOK & LUAS SEKTOR

Trial 2023, UD3 Melaka, Q21, Ans: C

- 48 Rajah 4 menunjukkan sebuah bulatan berpusat di  $O$  dengan diameter 98 cm. Diberi luas sektor minor  $AOB$  ialah  $2829.75 \text{ cm}^2$ .

*Diagram 4 shows a circle with centre  $O$  with diameter 98 cm. Given the area of minor sector  $AOB$  is  $2829.75 \text{ cm}^2$ .*



Guna  $\pi = \frac{22}{7}$ , Cari sudut major AOB.

Use  $\pi = \frac{22}{7}$ , Find the major angle AOB.

- A 120
- B 135
- C 225
- D 310

## F2, 6.4 BENTUK GEOMETRI TIGA DIMENSI (ISI PADU PEPEJAL)

Trial 2023, P.GUDANG (SET 1), Q3, Ans: C

- 49 Seketul bongkah besi yang berisipadu  $8 \text{ cm}^3$  mempunyai jisim 23.6 g. Cari ketumpatan besi itu dalam  $\text{g/cm}^3$ .

*A block of iron with a volume of  $8 \text{ cm}^3$  has a mass of 23.6 g. Find the density of the iron in  $\text{g/cm}^3$ .*

- A 188.8
- B 31.6
- C 2.95
- D 0.34

Trial 2023, SBP, Q3, Ans: D

- 50 Sebanyak 20 pepejal logam berbentuk kubus, dengan sisi 5 m, telah dileburkan untuk membentuk 400 buah pepejal sfera yang sama. Hitung isi padu, dalam  $\text{cm}^3$ , setiap pepejal sfera itu.

*A total of 20 solid metal cubes, with side 5 m, were melted in order to form 400 identical solid spheres. Calculate the volume, in  $\text{cm}^3$ , of each sphere.*

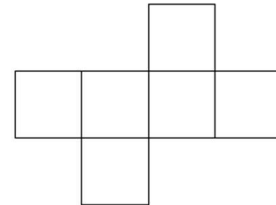
- A  $3.125 \times 10^{-7}$
- B  $3.125 \times 10^5$

- C  $6.25 \times 10^{-6}$
- D  $6.25 \times 10^6$

Trial 2023, SABK/SMKA (SET 2), Q3, Ans: C

- 51 Rajah 1 menunjukkan bentangan sebuah kubus.

*Diagram 1 shows the net of a cube.*



Diberi bahawa isi padu bagi kubus itu ialah  $4096 \text{ m}^3$ . Hitung jumlah luas permukaan, dalam  $\text{cm}^2$ , bentangan itu.

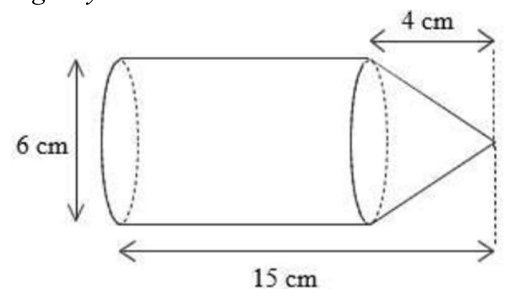
*It is given that the volume of the cube is  $4096 \text{ m}^3$ . Calculate the total surface area, in  $\text{cm}^2$ , of the net.*

- A  $1.536 \times 10^3$
- B  $1.536 \times 10^5$
- C  $1.536 \times 10^7$
- D  $1.536 \times 10^9$

Trial 2023, UD3 Melaka, Q25, Ans: B

- 52 Rajah 7 menunjukkan sebuah gabungan pepejal yang terbentuk daripada cantuman sebuah silinder dan sebuah kon.

*Diagram 7 shows a composite solid formed by joining a cylinder and a cone*



(Guna / Use  $\pi = 3.142$ )

Cari jumlah luas permukaan, dalam  $\text{cm}^2$ , gabungan pepejal tersebut.

*Find the total surface area, in  $\text{cm}^2$ , of the composite solid.*

- A 273.35
- B 282.78
- C 311.06
- D 339.34

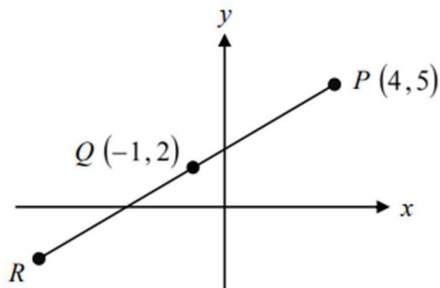
Trial 2023, JOHOR (SET 2), Q19, Ans: C

- 53** Sebuah silinder berjari 2.1 cm dikeluarkan dari sebuah pepejal berbentuk kuboid yang berukuran panjang 6.8 cm, lebar 5.9 cm dan tinggi 4.7 cm. Silinder tersebut mempunyai ketinggian yang sama seperti kuboid. Hitung isi padu dalam  $\text{cm}^3$  pepejal yang tinggal.  $\pi = \frac{22}{7}$   
*A cylinder with a radius 2.1 cm is taken out from a solid cuboid with the length 6.8 cm, width of 5.9 cm and height of 4.7 cm. The cylinder has the same height as the cuboid. Calculate the volume, in  $\text{cm}^3$ , the remaining solid  $\pi = \frac{22}{7}$*
- A** 104.42  
**B** 107.24  
**C** 123.42  
**D** 158.24

**F2, 7.1, KOORDINAT**

Trial 2023, PERLIS Q10, Ans: B

- 54** Rajah 3 menunjukkan suatu satah Cartes dengan garis lurus PQR. Q ialah titik tengah bagi garis PR  
*Diagram 3 shows a Cartesian plane with a straight line PQR. Q is the midpoint of straight line PR.*



Cari koordinat R.  
 Find the coordinate R.

- A** (6, -1)  
**B** (-6, -1)  
**C** (-6, 1)  
**D** (-1, -6)

**F2, 8.1 GRAF FUNGSI**

Trial 2023, P.GUDANG (SET 1), Q7, Ans: C

- 55** Jadual 1 di bawah menunjukkan jadual nilai bagi fungsi  $y = -x^2 + 6x - 5$ .  
*Table 1 below shows the table of values for the function  $y = -x^2 + 6x - 5$*

<b>x</b>	-2	-1	0	0.5	1	1.5	2.5
<b>y</b>	-13	-10	-5	m	2	6.25	n

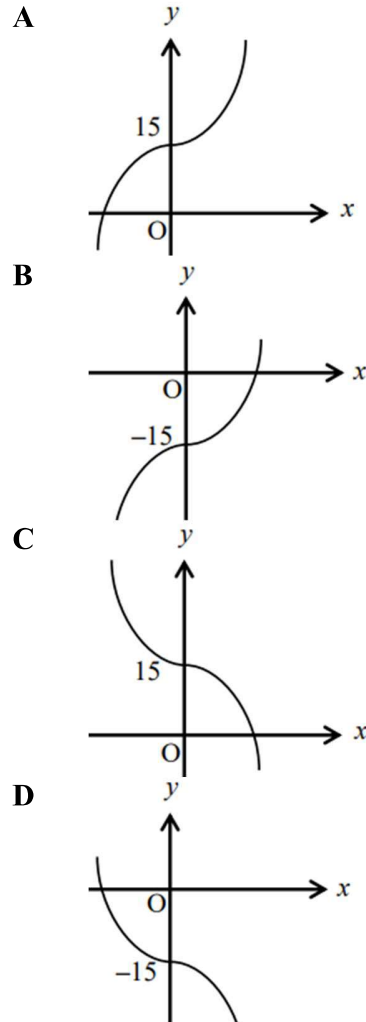
Tentukan nilai yang sesuai untuk menggantikan m dan n.  
 Determine appropriate values to replace m and n

- A**  $m = 2.25, n = -3.75$   
**B**  $m = 2.25, n = 3.75$

- C**  $m = -2.25, n = 3.75$   
**D**  $m = -2.25, n = -3.75$

Trial 2023, SABK/SMKA (SET 2), Q26, Ans: C

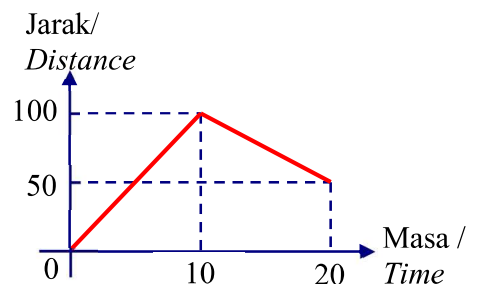
- 56** Antara graf yang berikut, manakah mewakili  $y = 15 - 2x^3$ ?  
 Which of the following graphs represents  $y = 15 - 2x^3$ ?



**F2, 9.1 LAJU DAN PECUTAN**

Trial 2023, SMKA/SABK (SET1), Q34, Ans: A

- 57** Rajah 12 menunjukkan graf jarak-masa bagi sebuah lori dalam tempoh 20 saat.  
*Diagram 12 shows the distance-time graph of a lorry in a period of 20 seconds.*



Hitung laju purata, dalam  $ms^{-1}$ , lori itu dalam tempoh 20 saat.

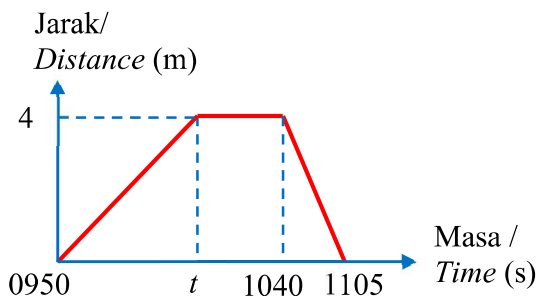
Calculate the average speed, in  $ms^{-1}$ , of the lorry in the period of 20 seconds.

- A 7.5
- B 8.0
- C 10.0
- D 20.5

Trial 2023, P.GUDANG (SET 1), Q39, Ans: B

58 Rajah 15 menunjukkan graf jarak-masa bagi perjalanan Azman dari sekolah ke bank dan balik.

Diagram 15 shows a distance-time graph of Azman's journey from school to bank and back.



Diberi laju semasa dia berjalan ke bank ialah 10 km/j. Tentukan nilai  $t$ .

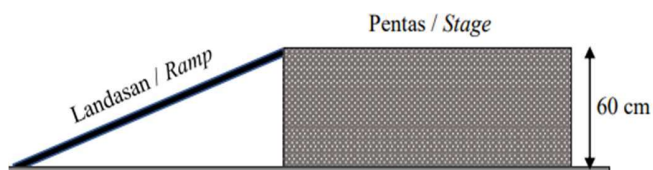
Given the speed he walks to bank is 10 km/j. Determine the value of  $t$ .

- A 1004
- B 1014
- C 1018
- D 1024

## F2, 10.1 KECERUNAN GARIS LURUS

Trial 2023, PERLIS Q23, Ans: C

59 Rajah 11 menunjukkan sebuah pentas kecil yang dibina oleh Ramlan untuk pertandingan pidato di sekolahnya dengan ketinggian 60 cm. Diagram 11 shows a small stage built by Ramlan for a speech contest at his school with a height of 60 cm.



Hitung kecerunan landasan tersebut sekiranya panjang landasan yang diperlukan ialah 134.16 cm.

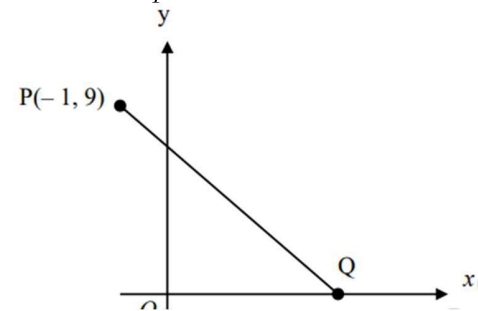
Calculate the gradient of the ramp if the required length of ramp is 134.16 cm.

- A 0.44
- B 0.45
- C 0.50
- D 2.00

Trial 2023, JUU Pahang, Q13, Ans: B

60 Rajah 5 menunjukkan garis lurus  $PQ$  yang dilukis pada satah Cartes.

Diagram 5 shows a straight line of  $PQ$  drawn on a Cartesian plane.



Diberi kecerunan garis lurus  $PQ$  ialah  $-\frac{3}{2}$ .

Cari pintasan- $x$ .

Given that gradient of the straight line  $PQ$  is  $-\frac{3}{2}$ .

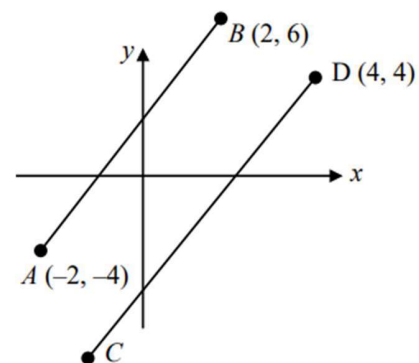
Find the  $x$ -intercept.

- A 4
- B 5
- C 6
- D 8

Trial 2023, JOHOR (SET 2), Q10, Ans: C

61 Dalam Rajah 3, Garis lurus  $AB$  adalah selari dengan  $CD$ .

In Diagram 3, Straight line  $AB$  is parallel to straight line  $CD$ .



Antara berikut, manakah persamaan bagi garis lurus  $CD$ ?

Which of the following is the equation for the straight line  $CD$ ?

- A  $y = \frac{5}{2}x + 6$
- B  $y = -\frac{5}{2}x + 6$

- C  $y = \frac{5}{2}x - 6$   
 D  $y = -\frac{5}{2}x - 6$

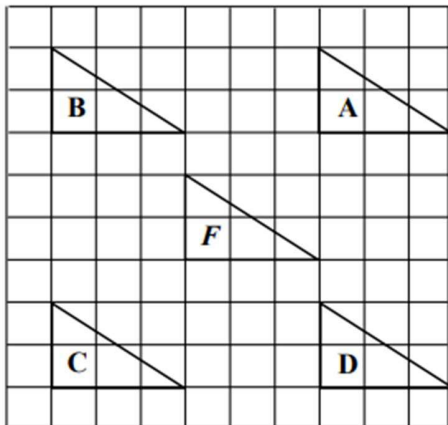
Trial 2023, JOHOR (SET 2), Q9, Ans: B

- 62 Cari kecerunan bagi garis lurus  $\frac{4}{5}y - x = 10$   
 Find the gradient of the straight line  $\frac{4}{5}y - x = 10$
- A  $-\frac{5}{4}$   
 B  $\frac{5}{4}$   
 C  $-\frac{4}{5}$   
 D  $\frac{4}{5}$

## F2, 11.1, TRANSFORMASI ISOMETRI

Trial 2023, PERLIS Q14, Ans: D

- 63 Rajah 7 menunjukkan segitiga  $F$  dilukis pada grid segi empat sama.  
 Diagram 7 shows a triangle  $F$  drawn on a square grid



Antara segitiga A, B, C, dan D, yang manakah objek bagi segitiga  $F$  di bawah suatu translasi  $\begin{pmatrix} -3 \\ 3 \end{pmatrix}$ ?

Which of the following triangles A, B, C, and D, is the object of triangle  $F$  under a translation  $\begin{pmatrix} -3 \\ 3 \end{pmatrix}$ ?

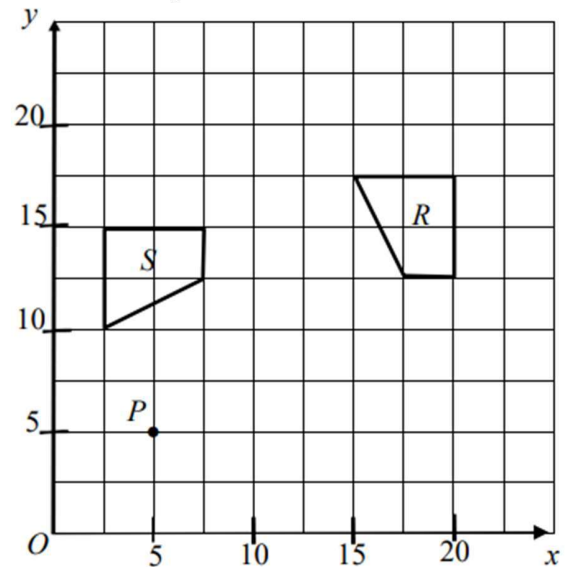
Trial 2023, UD3 Melaka, Q29, Ans: A

- 64 Objek  $M(3, 5)$  dipetakan kepada kedudukan  $M'(-2, 8)$  di bawah suatu translasi. Tentukan kedudukan imej bagi  $N(-1, 2)$  di bawah translasi yang sama.  
 Object  $M(3, 5)$  is mapped onto position  $M'(-2, 8)$  under a translation. Determine the position of image for  $N(-1, 2)$  under the same translation.
- A  $(-6, 5)$   
 B  $(-6, -1)$

- C  $(4, -1)$   
 D  $(4, 5)$

Trial 2023, SABK/SMKA (SET 2), Q9, Ans: A

- 65 Rajah 5 menunjukkan dua buah poligon,  $R$  dan  $S$  yang dilukis pada suatu satah Cartes.  
 Diagram 5 shows two polygons,  $R$  and  $S$  drawn on a Cartesian plane.



$R$  ialah imej bagi  $S$  di bawah suatu transformasi. Cari koordinat imej bagi titik  $P$  di bawah transformasi yang sama.

$R$  is the image of  $S$  under a transformation. Find the image coordinates of the point  $P$  under the same transformation.

- A  $(10, 15)$   
 B  $(15, 0)$   
 C  $(0, 10)$   
 D  $(20, 10)$

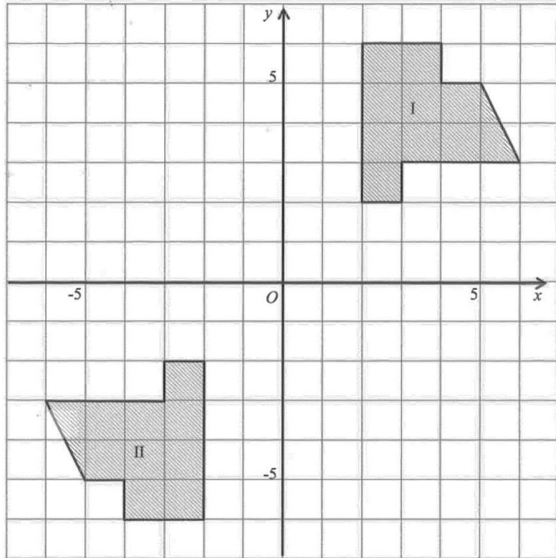
Trial 2023, UD3 Melaka, Q30, Ans: B

- 66 Titik  $P'$  ialah imej kepada titik  $P$  di bawah putaran  $180^\circ$  pada asalan. Jika koordinat  $P'$  ialah  $(-3, 2)$ , apakah koordinat bagi titik  $P$ ?  
 Point  $P'$  is the image of point  $P$  under  $180^\circ$  rotation about the origin. If the coordinates of point  $P'$  is  $(-3, 2)$ , what is the coordinates of point  $P$ ?
- A  $(3, 2)$   
 B  $(3, -2)$   
 C  $(-2, 3)$   
 D  $(2, -3)$

Trial 2023, SBP, Q6, Ans: D

- 67 Rajah 3 menunjukkan dua octagon yang dilukis pada suatu satah Cartes.

Diagram 3 shows two octagons drawn on Cartesian plane.

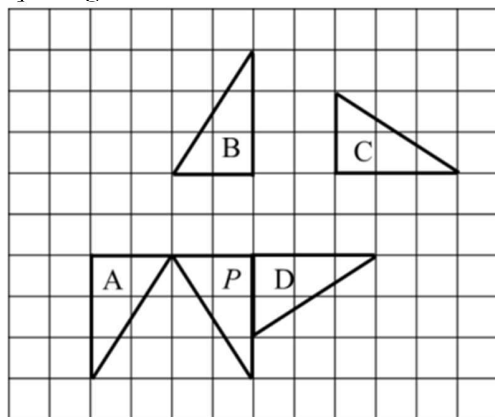


Oktagon II adalah imej bagi oktagon I di bawah suatu transformasi. Huraikan selengkapnya transformasi tersebut.  
 Octagon II is the image of octagon I under a transformation. Describe in full the transformation.

- A Pantulan pada garis  $y = -x$ .  
Reflection on the line  $y = -x$ .
- B Pantulan pada garis  $y = 0$ .  
Reflection on the line  $y = 0$ .
- C Putaran  $180^\circ$  pada pusat  $(1, 0)$ .  
Rotation of  $180^\circ$  about the centre  $(1, 0)$ .
- D Putaran  $180^\circ$  pada asalan.  
Rotation of  $180^\circ$  about the origin.

Trial 2023, JUJ Pahang, Q11, Ans: D

68 Rajah 3 menunjukkan lima buah segi tiga dilukis pada grid segi empat sama.  
 Diagram 3 shows five triangles are drawn on square grids.

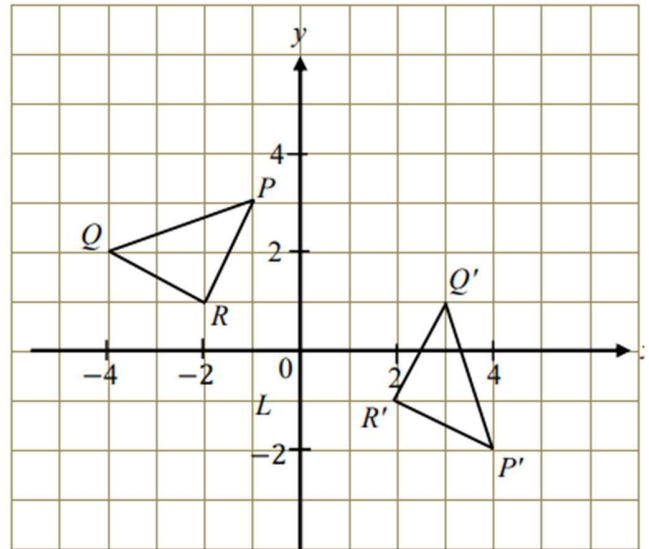


Antara segi tiga A, B, C dan D, segi tiga manakah **bukan** satu imej bagi P di bawah suatu pantulan?  
 Among the triangles A, B, C and D, which triangle is **not** an image of P under a reflection?

Trial 2023, PERLIS Q11, Ans: C

69 Rajah 4 menunjukkan dua segitiga pada satah Cartes. Segitiga  $P'Q'R'$  ialah imej bagi segitiga  $PQR$  di bawah satu putaran  $90^\circ$  ikut arah jam pada suatu pusat putaran.

Diagram 4 shows two triangles on a Cartesian plane. Triangle  $P'Q'R'$  is an image of triangle  $PQR$  under a clockwise rotation of  $90^\circ$  at a centre of rotation.



Tentukan koordinat pusat putaran tersebut.  
 Determine the coordinates of the centre of rotation.

- A  $(0, 0)$
- B  $(1, 2)$
- C  $(-1, -2)$
- D  $(-2, -1)$

**F2, 12.1, SUKATAN KECENDERUNGAN MEMUSAT**

Trial 2023, SABK/SMKA (SET 2), Q22, Ans: D

70 Jadual 2 menunjukkan skor yang diperolehi dalam suatu pertandingan.  
 Table 2 shows the scores obtained in a competition

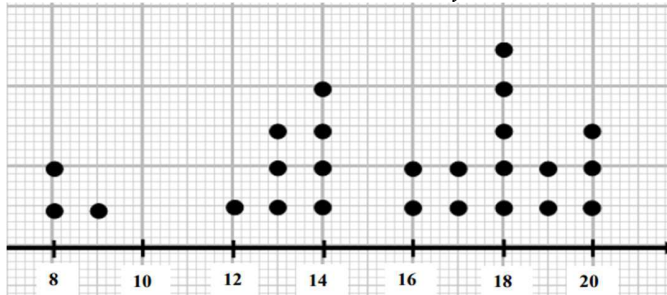
Skor Score	0	1	2	3	4	5
Kekerapan Frequency	3	4	7	6	$x$	2

Diberi median ialah 3. Antara berikut, yang manakah nilai yang mungkin bagi  $x$ ?  
 Given the median is 3. Which of the following is the possible value of  $x$ ?

- A 3
- B 4
- C 6
- D 7

**Trial 2023, PERLIS Q19, Ans: A**

71 Rajah 10 menunjukkan plot titik yang mewakili data mengenai jangka hayat, dalam jam, 25 unit bateri yang diuji dalam makmal. Diagram 10 shows a dot plot which represent a data of life expectancy, in hours, 25 units of batteries, tested in the laboratory



Jangka hayat (jam)/ Life expectancy (hours)

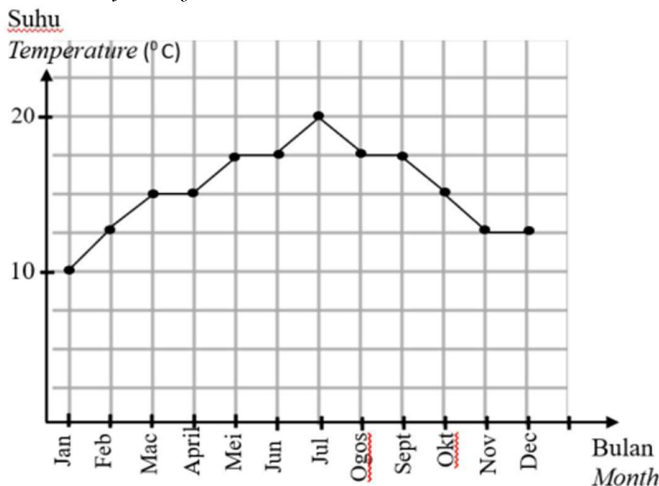
Tentukan median bagi data di atas.

Determine the median of the data above.

- A 16
- B 17
- C 18
- D 20

**Trial 2023, PERLIS Q33, Ans: C**

72 Rajah 15 menunjukkan graf garis yang mewakili purata suhu bulanan bagi bandar Taipei sepanjang tahun 2022. Diagram 15 shows a line graph represent the average monthly temperature of Taipei town for the year of 2022.



Hitung min suhu, dalam °C, bagi Bandar Taipei bagi tahun 2022.

Calculate the mean, in °C, of Taipei town for the year of 2022.

- A 15
- B 15.20
- C 15.21
- D 15.25

**Trial 2023, SBP, Q26, Ans: A**

73 Sebuah bakul mempunyai tujuh ekor ayam. Min jisim bagi seekor ayam tersebut ialah 1.6kg. seekor ayam dengan jisim 1.92kg ditambah ke dalam bakul tersebut. Hitung min jisim Baharu, dalam kg, seekor ayam.

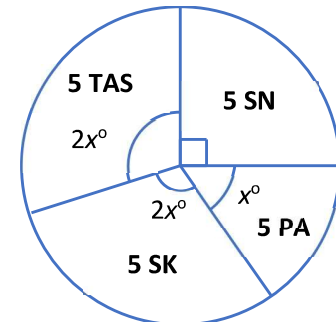
A basket has seven chickens. The mean mass of a chicken is 1.6kg. a chicken with a mass of 1.92kg is added into the basket. Calculate the new mean mass, in kg, of a chicken.

- A 1.64
- B 1.76
- C 1.87
- D 1.88

**Trial 2023, P.GUDANG (SET 1), Q12, Ans: C**

74 Carta pai dalam Rajah 5 menunjukkan bilangan murid Tingkatan 5 daripada sebuah sekolah yang telah mengikuti kelas Matematik secara atas talian pada suatu hari tertentu.

The pie chart in Diagram 5 shows the number of Form 5 students from a school who have attended an online Mathematics class on a certain day.



Diberi bilangan murid dari kelas 5 SN yang mengikuti kelas Matematik atas talian ialah 20 orang. Hitung bilangan murid dari kelas 5 PA yang mengikuti kelas atas talian tersebut.

Given the number of students from Class 5 SN who attended the online Mathematics class is 20. Calculate the number of students from Class 5 PA who attended the online class.

- A 4
- B 8
- C 12
- D 16

**F2 13.2.3 KEBARANGKALIAN MUDAH**

**Trial 2023, PERLIS Q20, Ans: D**

- 75 Sebuah kotak mengandungi  $m$  keping kad berwarna kuning dan 30 keping kad berwarna biru. Sekeping kad dipilih secara rawak daripada kotak itu. Jika kebarangkalian bahawa sekeping kad berwarna kuning dipilih ialah  $\frac{2}{5}$ , hitung nilai  $m$ .

*A box contains  $m$  yellow cards and 30 blue cards. A card is picked at random from the box. If probability of yellow card is being pick is  $\frac{2}{5}$ , calculate the value of  $m$ .*

- A 75  
B 50  
C 45  
D 20

Trial 2023, SMKA/SABK (SET1), Q24, Ans: C

- 76 Dalam satu pertandingan menembak, setiap peserta diberikan sejumlah peluru untuk menembak ke sasaran. Kebarangkalian untuk Fathi berjaya menembak tepat ke sasaran ialah  $\frac{2}{7}$ . Hitung jumlah peluru yang dibekalkan untuk setiap peserta jika 10 peluru yang ditembak oleh Fathi tidak mengena sasaran.

*In a shooting competition, each participant is given a number of bullets to shoot at a target. The probability for Fathi to successfully hit the target is  $\frac{2}{7}$ . Calculate the number of bullets supplied to each participant if 10 bullets fired by Fathi miss the target.*

- A 4  
B 5  
C 14  
D 28

Trial 2023, PERLIS Q34, Ans: D

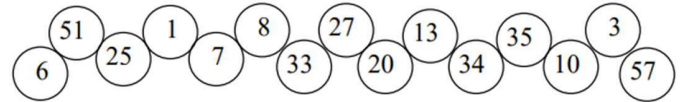
- 77 Di beri set  $W = \{x: 1 \leq x < 68, x \text{ ialah gandaan } 13\}$ . Suatu nombor dipilih secara rawak daripada set  $W$ .

Tentukan ruang sampel bagi peristiwa tersebut.  
*Given set  $W = \{x: 1 \leq x < 68, x \text{ is a multiple of } 13\}$ . A number is selected at random from set  $W$ . Determine the sample space of the event.*

- A  $\{1, 13, 26, 39, 52, 65, 68\}$   
B  $\{13, 26, 39, 52, 65, 68\}$   
C  $\{1, 13, 26, 39, 52, 65\}$   
D  $\{13, 26, 39, 52, 65\}$

Trial 2023, JUJ Pahang, Q26, Ans: D

- 78 Rajah 12 menunjukkan suatu set 15 nombor.  
*Diagram 12 shows a set of 15 cards.*



Satu kad dipilih secara rawak. Cari kebarangkalian bahawa satu kad yang dipilih ialah kad yang berlabel nombor perdana  
*A card is chosen at random. Find the probability that the number chose is a prime number*

- A  $\frac{1}{3}$   
B  $\frac{1}{5}$   
C  $\frac{4}{15}$   
D  $\frac{7}{15}$

Trial 2023, SBP, Q31, Ans: B

- 79 Jadual 2 menunjukkan jumlah jualan buah tembikai dalam masa 10 minggu.

*Table 2 shows the total sales of watermelon in 10 weeks.*

Minggu/ week	Bil. tembikai/ No. of watermelon
1	90
2	190
3	200
4	130
5	860
6	780
7	120
8	310
9	145
10	85

Hitung kebarangkalian bilangan minggu, penjual itu dapat menjual sekurang-kurangnya 200 biji buah tembikai.

*Calculate the probability of the number of weeks, the seller can sell at least 200 watermelons.*

- A  $\frac{3}{10}$   
B  $\frac{2}{5}$   
C  $\frac{3}{5}$   
D  $\frac{7}{10}$

Trial 2023, P.GUDANG (SET 1), Q9, Ans: B

- 80 Sebiji dadu adil dilambung sebanyak 300 kali. Didapati bahawa bilangan kali mendapat permukaan dengan lima titik ialah 60. Cari



kebarangkalian eksperimen mendapat permukaan dengan lima titik daripada 300 percubaan.

*A fair dice is rolled 300 times. It is found that the number of times of getting the surface with five dots is 60 times. Find the experimental probability of obtained surface with five dots from 300 trials.*

- A  $\frac{1}{6}$   
 B  $\frac{1}{5}$   
 C  $\frac{5}{6}$   
 D  $\frac{4}{5}$

**Trial 2023, JOHOR (SET 2), Q30, Ans: A**

- 81** Dalam satu latihan menembak, Amir menembak sasaran sebanyak 120 kali. Kebarangkalian tembakan Amir mengenai sasaran ialah  $\frac{2}{3}$ . Hitung bilangan tembakan yang tidak mengenai sasaran.

*In a shooting training, Amir shot at a target 120 times. The probability that Amir hits the target is  $\frac{2}{3}$ . Calculate the number of shoots that do not hit the target.*

- A 40  
 B 80  
 C 100  
 D 120

**Trial 2023, JOHOR (SET 2), Q31, Ans: A**

- 82** Dua keping kad dipilih secara rawak satu demi satu daripada sebuah beg yang mengandungi 2 keping kad merah, 4 kad biru dan 6 kad kuning. Kad pertama dikembalikan sebelum kad kedua dipilih dari beg itu. Cari kebarangkalian bahawa kad pertama ialah biru dan kad kedua ialah merah

*Two cards are picked at random one after another from a bag containing 2 red cards, 4 blue card, and 6 yellow cards. The first card is replaced before the second card is drawn at random from a bag. Find the probability that the first card is blue, and the second card is red*

- A  $\frac{1}{18}$   
 B  $\frac{1}{2}$   
 C  $\frac{1}{16}$

- D  $\frac{3}{5}$

**Trial 2023, JUJ Pahang, Q27, Ans: C**

- 83** Sebuah beg mengandungi 56 biji bola yang berwarna merah dan kuning. Kebarangkalian sebiji bola kuning dikeluarkan ialah  $\frac{3}{8}$ .

Hitung bilangan bola merah dalam beg.

*A bag contains 56 balls of red and yellow colors. The probability that a yellow ball is taken out is  $\frac{3}{8}$ . Calculate the number of the red balls in the bag.*

- A 21  
 B 28  
 C 35  
 D 42

**Trial 2023, UD3 Melaka, Q12, Ans: A**

- 84** Sebuah kotak mengandungi tiga batang pen biru, lima batang pen merah dan sebatang pen hitam. Dua batang pen dipilih dari kotak secara rawak satu per satu tanpa pemulangan.

Hitung kebarangkalian bahawa kedua-dua batang pen yang dipilih adalah berwarna sama.  
*A box contains three blue pens, five red pens and one black pen. Two pens are selected from the box at random one by one without replacement. Calculate the probability that the two selected pens are the same color.*

- A  $\frac{26}{72}$   
 B  $\frac{27}{72}$   
 C  $\frac{34}{72}$   
 D  $\frac{35}{72}$

**Trial 2023, SMKA/SABK (SET1), Q25, Ans: D**

- 85** Koperasi SMK Setia menghadihkan satu plastik berisi makanan dan satu kotak minuman kepada sekumpulan sepuluh orang murid yang hadir sebagai peserta bagi Kuiz Matematik Peringkat Daerah. Di dalam plastik makanan itu mengandungi 6 biji roti coklat dan 9 biji roti jagung, manakala di dalam kotak minuman pula mengandungi 5 kotak air berperisa laici dan 7 kotak air berperisa oren.

Anis merupakan orang pertama yang mengambil makanan dan minuman tersebut. Anis mengambil satu roti dan satu kotak minuman. Apakah kebarangkalian Anis mengambil roti coklat atau air berperisa laici? *Koperasi SMK Setia is giving away a plastic bag containing foods and a box of drinks to a group of ten students who attended as participants in the District Level Mathematics Quiz. The food bag contains 6 pieces of chocolate flavored bread and 9 pieces of corn flavored bread, while the drink box contains 5 boxes of lychee flavored drink and 7 boxes of orange flavored drink. Anis is the first person that takes the food and drinks. Anis takes one piece of bread and one box of drinks. What is the probability that Anis takes one chocolate flavored bread or one lychee flavored drink?*

- A  $\frac{13}{20}$   
 B  $\frac{11}{27}$   
 C  $\frac{17}{60}$   
 D  $\frac{49}{60}$

Trial 2023, PERLIS Q6, Ans: A

86 Di dalam sebuah kotak terdapat  $11220_3$  biji guli.  $\frac{1}{4}$  daripada guli itu adalah berwarna merah,  $\frac{2}{3}$  berwarna biru dan selebihnya berwarna kuning. Hitung beza bilangan guli merah dan guli kuning, dalam asas tujuh di dalam kotak itu

*There are  $11220_3$  marbles in a box.  $\frac{1}{4}$  of the marbles are red,  $\frac{2}{3}$  are blue and the rest are yellow. Calculate the difference numbers of red marbles and yellow marbles, in base seven, in the box.*

- A  $31_7$   
 B  $22_7$   
 C  $16_7$   
 D  $13_7$

### F3, 1.1 INDEKS

Trial 2023, SABK/SMKA (SET 2), Q19, Ans: D

87 Apakah nilai  $m$  jika  $32^m = 64^{m-3}$  ?

*What is the value of  $m$  if  $32^m = 64^{m-3}$  ?*

- A  $m = 3$

- B  $m = -3$   
 C  $m = -18$   
 D  $m = 18$

Trial 2023, SMKA/SABK (SET1), Q11, Ans: A

88 Hitung nilai  $y$  bagi setiap persamaan berikut:  
*Calculate the value of  $y$  for the following equation:*

$$5^4 \div 5^{2y} = 5^{3(6y-2)}$$

- A  $\frac{1}{2}$   
 B 2  
 C  $\frac{5}{4}$   
 D  $-\frac{5}{4}$

Trial 2023, PERLIS Q21, Ans: D

89 Nyatakan salah satu nilai  $x$  yang mungkin bagi persamaan berikut.

*State one of the possible value of  $x$  for the following equations.*

$$b^{x^2} \div b^{7x} = b^x$$

- A 1  
 B -7  
 C -8  
 D 8

Trial 2023, JUJ Pahang, Q1, Ans: B

90 Permudahkan  $(m^2)^4 \div m^2$

*Simplify  $(m^2)^4 \div m^2$*

- A  $m^4$   
 B  $m^6$   
 C  $m^7$   
 D  $m^8$

Trial 2023, UD3 Melaka, Q11, Ans: B

91 Permudahkan/ Simplify:  $\frac{p^4 \times (16p^8)^{\frac{1}{4}}}{q^{-3}}$

- A  $2p^3q^{-3}$   
 B  $2p^6q^3$   
 C  $16p^3q^{-3}$   
 D  $16p^6q^3$

Trial 2023, SMKA/SABK (SET1), Q12, Ans: B

92 Diberi bahawa  $243^{2x} = 9^{x+1}$ . Cari nilai  $x$ .

Given that  $243^{2x} = 9^{x+1}$ . Find the value of  $x$

- A 4  
 B  $\frac{1}{4}$   
 C 8  
 D  $\frac{1}{8}$

Trial 2023, UD3 Melaka, Q5, Ans: A

93 Permudahkan/ Simplify :  $\frac{9x^2y^6 \times 3x^2}{27y^2}$

- A  $x^4y^4$   
 B  $x^5y^8$   
 C  $\frac{1}{3}x^4y^4$   
 D  $\frac{1}{3}x^5y^8$

Trial 2023, JOHOR (SET 2), Q23, Ans: A

94 Diberi  $8^x = \frac{512}{8^{2x}}$ , cari nilai  $x$ .

Given that  $8^x = \frac{512}{8^{2x}}$ , find the value of  $x$ .

- A 1  
 B 3  
 C 6  
 D 12

Trial 2023, SMKA/SABK (SET1), Q5, Ans: B

95 Permudahkan / Simplify :

$$\frac{3^2x^3y^5 \times (-8x^2y)}{24xy^4}$$

- A  $-3x^6y^{10}$   
 B  $-3x^4y^2$   
 C  $-\frac{3x^2}{y}$   
 D  $-\frac{3}{x^2y}$

Trial 2023, SABK/SMKA (SET 2), Q17, Ans: B

96 Permudahkan / Simplify

$$\frac{4pq^2r \times (-12r^2q)}{-16p^2q^2r^2}$$

- A  $\frac{3pq}{r}$   
 B  $\frac{3rq}{p}$

C  $3pqr$

D  $\frac{3q^2}{pr}$

Trial 2023, SBP, Q10, Ans: A

97 Ringkaskan/ Simplify:

$$\left(\frac{m^2n^4}{n^{-1}}\right)^{\frac{1}{2}} \times m^{\frac{5}{2}} \times n^{\frac{1}{2}}$$

- A  $m^{\frac{7}{2}}n^3$   
 B  $m^{\frac{9}{2}}n^3$   
 C  $m^{\frac{7}{2}}n^{\frac{7}{2}}$   
 D  $m^{\frac{9}{2}}n^{\frac{7}{2}}$

### F3, 2.1 BENTUK PIAWAI

Trial 2023, JUJ Pahang, Q2, Ans: A

98 Bundarkan 0.1534 betul kepada dua angka bererti.

Round off 0.1534 correct to two significant figures.

- A 0.15  
 B 0.1500  
 C 0.1530  
 D 0.1600

Trial 2023, SBP, Q1, Ans: D

99 Bundarkan 0.0897 kepada dua angka bererti.

Round off 0.0897 correct to two significant figures.

- A 0.1  
 B 0.9  
 C 0.10  
 D 0.090

Trial 2023, SABK/SMKA (SET 2), Q1, Ans: C

100 Ungkapkan  $4.062 \times 10^{-2}$  sebagai satu nombor tunggal yang betul kepada 3 angka bererti.

Express  $4.062 \times 10^{-2}$  as a single number correct to 3 significant figures

- A 0.04  
 B 0.040  
 C 0.0406  
 D 0.04062

Trial 2023, JUJ Pahang, Q3, Ans: A

- 101  $4.3 \times 10^{13} + 3.2 \times 10^{14} =$
- A  $3.63 \times 10^{14}$   
 B  $3.63 \times 10^{13}$   
 C  $7.50 \times 10^{14}$   
 D  $7.50 \times 10^{13}$

Trial 2023, PERLIS Q1, Ans: D

- 102 Hitung hasil darab 1.24 dan 0.034. Bundarkan jawapan kepada 3 angka bererti. Calculate the product of 1.24 and 0.034. Round off the answer correct to three significant figures.
- A 0.04  
 B 0.042  
 C 0.0421  
 D 0.0422

Trial 2023, SMKA/SABK (SET1), Q1, Ans: A

- 103 Ungkapkan  $1153.6 \times 10^3$  dalam bentuk piawai. Express  $1153.6 \times 10^3$  in standard form.
- A  $1.1536 \times 10^6$   
 B  $1.1536 \times 10^3$   
 C  $1.1536 \times 10^{-3}$   
 D  $1.1536 \times 10^{-6}$

Trial 2023, SABK/SMKA (SET 2), Q2, Ans: B

- 104 Diberi bahawa laju cahaya ialah  $3 \times 10^5$  km s<sup>-1</sup>, cari jarak, dalam km, yang dilalui oleh cahaya dalam masa 26 minit. Nyatakan jawapan dalam bentuk piawai. Given that the speed of light is  $3 \times 10^5$  km s<sup>-1</sup>, find the distance, in km, travelled by light in 26 minutes. Express the answer in standard form.
- A  $4.68 \times 10^9$   
 B  $4.68 \times 10^8$   
 C  $7.8 \times 10^6$   
 D  $1.3 \times 10^5$

Trial 2023, PERLIS Q22, Ans: D

- 105 Bundarkan 0.007106 betul kepada tiga angka bererti dan seterusnya ungkapkan jawapan tersebut dalam bentuk piawai. Round off 0.007106 correct to three significant figures and express the answer in standard form.
- A  $7.00 \times 10^3$   
 B  $7.00 \times 10^{-3}$   
 C  $7.11 \times 10^3$   
 D  $7.11 \times 10^{-3}$

Trial 2023, UD3 Melaka, Q34, Ans: C

- 106 Diberi  $m = 0.2633$  dan  $n = 0.3$ . Hitung nilai  $mn$ , seterusnya bundarkan jawapan betul kepada tiga angka bererti. Given  $m = 0.2633$  and  $n = 0.3$ . Calculate the value of  $mn$ , then round off the answer correct to three significant figures.
- A 0.0780  
 B 0.0789  
 C 0.0790  
 D 0.07899

Trial 2023, JOHOR (SET 2), Q1, Ans: B

- 107 Hitung nilai bagi  $9.74 \times 10^{-2} \div 4.32 \times 10^5$  dan berikan jawapan dalam bentuk piawai. Calculate the value of  $9.74 \times 10^{-2} \div 4.32 \times 10^5$  and give the answer in standard form.
- A  $2.25 \times 10^{-6}$   
 B  $2.25 \times 10^{-7}$   
 C  $2.25 \times 10^{-8}$   
 D  $2.25 \times 10^{-9}$

Trial 2023, P.GUDANG (SET 1), Q5, Ans: B

- 108 Hitung nilai bagi  $5.07 \times 10^7 - 3.22 \times 10^5$  dan berikan jawapan dalam bentuk piawai. Calculate the value of  $5.07 \times 10^7 - 3.22 \times 10^5$  and give the answer in standard form.
- A  $1.85 \times 10^2$   
 B  $5.04 \times 10^7$   
 C  $5.10 \times 10^7$   
 D  $8.29 \times 10^2$

Trial 2023, SMKA/SABK (SET1), Q2, Ans: B

- 109 Zuhdi mempunyai 168 kg pasir. Dia menggunakan 60% daripada pasir itu untuk membuat dinding. Baki pasir itu dibahagikan sama banyak ke dalam 3 beg. Cari jisim, dalam g, pasir di dalam setiap beg itu. Zuhdi has 168 kg of sand. He used 60% of the sand to make a wall. The remaining sand is divided equally into 3 bags. Find the mass, in g, of the sand in each bag.
- A  $2.24 \times 10^{-4}$   
 B  $2.24 \times 10^4$   
 C  $3.36 \times 10^{-4}$   
 D  $3.36 \times 10^4$

### F3, 3.1 PELABURAN, SIMPANAN, KREDIT, HUTANG

Trial 2023, SBP, Q25, Ans: D

- 110** Puan Mariah memiliki sebuah pangsapuri servis di Bayan Lepas. Anggaran bayaran sewa bagi pangsapuri itu ialah RM1 200 sebulan dan dia membayar RM322 setiap setengah tahun untuk cukai taksiran hartanah.

*Puan Mariah owns a service apartment in Bagan Lepas. The rental of the apartment is estimated at RM1 200 per month and she paid RM322 each half year for property assessment tax. Calculate the property assessment tax rate for the service apartment.*

- A 1.12%
- B 2.24%
- C 3.73%
- D 4.47%

Trial 2023, PERLIS Q2, Ans: C

- 111** Pengguna kad kredit diberi kelonggaran oleh pihak bank dengan membenarkan pengguna kad membayar dalam suatu tempoh tertentu yang dikenali sebagai tempoh tanpa faedah. Berapakah bilangan hari tempoh tanpa faedah bermula dari tarikh penyata?

*The credit card holder is given a flexibility by allowing users to pay bank wch is known as the interest free period. How many days is the interest free period starting from the statement date?*

- A 10
- B 15
- C 20
- D 30

Trial 2023, SBP, Q17, Ans: B

- 112** Noor mempunyai RM18 000 dalam akaun simpanannya. Dia mengeluarkan RM1 600 setiap bulan, selama  $n$  bulan. Tentukan ketaksamaan yang mewakili nilai  $n$  jika baki dalam akaun Noor perlu mempunyai sekurang-kurangnya RM2 000.

*Noor has RM18 000 in her saving account. She withdraws RM1 600 per month for  $n$  months. Determine the inequalities that represent the value of  $n$  if Noor needs to have at least RM2 000 balance in her account.*

- A  $n \leq 9$
- B  $n \leq 10$
- C  $n \geq 9$
- D  $n \geq 10$

Trial 2023, SMKA/SABK (SET1), Q21, Ans: A

- 113** Aiman ingin membeli sebuah kereta yang bernilai RM125 000 secara kredit. Beliau akan membayar bayaran pendahuluan sebanyak 10% dan bakinya dibayar secara ansuran selama 7 tahun. Kadar faedah sama rata yang dikenakan oleh bank ialah 4% setahun. Berapakah jumlah bayaran ansuran bulanan yang perlu dibayar oleh Aiman?

*Aiman wants to buy a car worth RM125 000 on credit. He will pay an advance payment of 10% and the balance will be paid in instalments over 7 years. The average interest rate charged by the bank is 4% per annum. What is the total monthly instalment that Aiman has to pay?*

- A RM 1714.29
- B RM1755.95
- C RM1863.10
- D RM1904.76

Trial 2023, SBP, Q37, Ans: B

- 114** Pada awal tahun 2023, Puan Laila menyimpan RM10 500 ke dalam akaun simpanannya. Pihak bank membayar faedah tahunan sebanyak 4% setahun dan dikompaunkan sekali setiap 4 bulan. Hitung faedah yang diterima Puan Laila pada akhir tahun kedua.

*In the beginning of year 2023, Madam Laila saves RM10 500 in her saving account. the bank pays an annual interest of 4% for a year and is compounded once every 4 months. Calculate the interest received by Madam Laila at the end of the second year.*

- A RM840.00
- B RM868.50
- C RM870.00
- D RM898.03

Trial 2023, PERLIS Q5, Ans: D

- 115** Pooja mendeposit RM6 000 ke dalam akaun simpanannya dengan kadar faedah 3% setahun dan dikompaun setiap suku tahun. Berapakah jumlah wang simpanan Pooja pada akhir tahun kelima?

*Pooja deposits RM6 000 into her savings account with an interest rate 3% per annum and is compounded quarterly. What is the amount of Pooja's savings at the end of the fifth year?*

- A RM6762.56
- B RM6900.00
- C RM6965.81
- D RM6967.10

## Trial 2023, JUJ Pahang, Q1, Ans: D

**116** Antara yang berikut, yang manakah keburukan tentang penggunaan kad kredit?

*Which of the following is the disadvantage of using credit card?*

- A** Kaedah pembayaran yang mudah  
*Easy payment method*
- B** Boleh menikmati ganjaran dalam rebat tunai atau penebusan mata  
*Can enjoy rewards in cash rebate of point redemption*
- C** Boleh digunakan untuk membuat pembayaran menggunakan mata wang yang berbeza  
*Can be used to make payment using different currency*
- D** Boleh dikenakan dengan pelbagai caj seperti caj bayaran lewat dan caj faedah pendahuluan wang tunai  
*May be subjected to various charges such as late payment charges and cash advance interest charges*

## Trial 2023, P.GUDANG (SET 1), Q14, Ans: C

**117** Puan Dila bekerja sebagai seorang juruteknik dan menerima gaji bulanan sebanyak RM3200. Dia mempunyai sebuah rumah yang disewakan kepada orang lain dan bayaran sewa yang diterima ialah RM560 sebulan. Dia menyimpan 10% daripada pendapatan bulanan sebagai simpanan tetap bulanan. Berapakah simpanan tetap bulanan yang disimpan oleh Puan Dila?

*Puan Dila works as a technician, and she receives a monthly salary of RM3 200. She has a house which rented to other people and the rental payment received is RM560 per month. She keeps 10% of his monthly income as a monthly fixed savings. How much is the monthly fixed savings saved by Puan Dila?*

- A** RM264
- B** RM320
- C** RM376
- D** RM880

## Trial 2023, JUJ Pahang, Q6, Ans: D

**118** Puan Noraiza menyimpan sebanyak RM6 500 dalam sebuah bank. Bank telah menawarkan

kadar faedah 3% setahun dan pengkompaunan setiap 3 bulan.

*Puan Noraiza saves RM6 500 in a bank. The bank has been offering an interest rate of 3% per annum and compounded every 3 months.*

Hitung nilai matang simpanannya pada akhir tahun keenam.

*Calculate the matured value of her savings at the end of the sixth year.*

- A** RM6 899.88
- B** RM6 900.39
- C** RM7 774.96
- D** RM7 776.69

## Trial 2023, SBP, Q40, Ans: A

**119** Encik Zainal membeli sebuah kereta bernilai RM90 000 secara kredit. Beliau membayar wang pendahuluan sebanyak 10% dan bakinya dibayar secara ansuran selama 7 tahu. Kadar faedah sama rata yang dikenakan oleh bank adalah sebanyak 4% setahun. Berapakah jumlah ansuran bulanan yang perlu dibayar oleh Encik Zainal?

*Mr Zainal bought a car worth RM90 000 on credit. He paid a down payment of 10% and the balance was paid in installments for 7 days. The flat interest rate charged by the bank is 4% per annum. How much is the monthly instalment amount to be paid by Mr Zainal?*

- A** RM1 234.29
- B** RM1 264.29
- C** RM1 341.43
- D** RM1 371.43

## Trial 2023, JOHOR (SET 2), Q32, Ans: B

**120** Thivya menyimpan wang sebanyak RM 6000 di sebuah bank. Hitung jumlah simpanan Thivya selepas 3 tahun jika kadar faedah yang diberikan ialah 3% setahun dan dikompaun setiap tahun.

*Thivya saves RM 6000 in a bank. Calculate the amount of saving after 3 years if the interest rate is 3% per annum and compound yearly.*

- A** RM 6565.36
- B** RM 6556.36
- C** RM 6005.36
- D** RM 13182.00

## Trial 2023, JUJ Pahang, Q37, Ans: C

**121** Encik Yap menyimpan RM8 000 dalam satu akaun bank yang menawarkan kadar faedah

4% setahun dan dikompaunkan setiap 6 bulan. Hitung jumlah faedah yang diperolehinya selepas 2 tahun

*Encik Yap deposits RM8 000 in a bank account which offers an interest rate of 4% per annum and is compounded every 6 months. Calculate the total interest earned after 2 years.*

- A RM640.00
- B RM652.80
- C RM659.46
- D RM664.40

**Trial 2023, UD3 Melaka, Q13, Ans: D**

**122** Berikut merupakan jenis akaun simpanan yang mungkin dipunyai oleh seorang peniaga runcit kecuali

*The following are the types of savings accounts that might had by a retailer except*

- A Akaun simpanan / Saving account
- B Akaun simpanan tetap/ Fixed deposit account
- C Akaun semasa / Current account
- D Akaun bank / Bank account

**Trial 2023, UD3 Melaka, Q14, Ans: A**

**123** Aminah ingin mendepositkan RM20 000 ke dalam akaun simpanan tetap selama 2 tahun.

*Aminah wishes to deposit RM20 000 in a fixed deposit account for 2 years.*

Pelan 1/ Plan 1:	Kadar faedah tahunan 3% dan dikompaun setiap 3 bulan. <i>Annual interest rate 3% and compounded every 3 months.</i>
Pelan 2/ Plan 2:	Kadar faedah tahunan 3.2% dan dikompaun setiap 6 bulan. <i>Annual interest rate 3.2% and compounded every 6 months.</i>

Berapakah perbezaan faedah yang didapati antara kedua-dua pelan tersebut?

*What is the different of interest earned between the two plans?*

- A RM79.07
- B RM800.00
- C RM1 231.98
- D RM1 311.05

**Trial 2023, UD3 Melaka, Q36, Ans: D**

**124** Jumlah pendapatan Encik Jack dan isterinya adalah sebanyak RM12 600. Mereka mempunyai tiga orang anak dan mereka ingin menyimpan dana pendidikan anak-anak mereka sebanyak RM250 000 dalam tempoh 15 tahun bermula sekarang. Berapakah jumlah minimum yang perlu disimpan setiap bulan?

*The total income of Encik Jack and his wife is RM12 600 a month. They have three children and they want to save their children's education fund of RM250 000 within 15 years from now. What is the minimum amount to save each month?*

- A RM1 340
- B RM1 360
- C RM1 380
- D RM1 400

**Trial 2023, SMKA/SABK (SET1), Q23, Ans: B**

**125** Zawawi memiliki sebuah rumah kediaman di Terengganu. Diberi bahawa nilai tahunan ialah RM6 600 dan kadar cukai pintu ialah 4%. Majlis Perbandaran Besut telah mengeluarkan bil cukai pintu yang perlu dibayar oleh Zawawi. Hitung cukai pintu yang dikenakan kepada Zawawi untuk setiap setengah tahun.

*Zawawi owns a house in Terengganu. Given that the annual value is RM6 600 and the property assessment tax rate is 4%. The Besut Municipal Council has issued a property assessment tax bill to be paid by Zawawi. Calculate the property assessment tax charged to Zawawi for every half-year.*

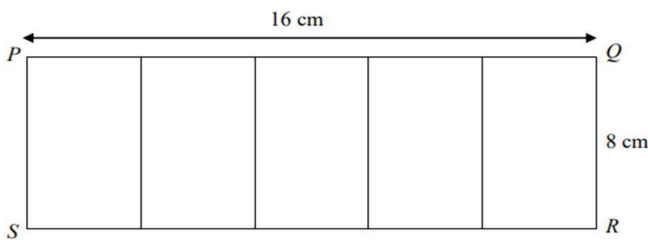
- A RM88
- B RM132
- C RM264
- D RM6 336

### F3, 4.1 LUKISAN BERSKALA

**Trial 2023, PERLIS Q36, Ans: C**

**126** Rajah 16 menunjukkan lukisan berskala bagi pelan sebidang tanah segi empat PQRS yang dibahagikan kepada lima kawasan yang sama luas.

*Diagram 16 shows a scale drawing of a plan of a rectangular land PQRS divided into five equally same areas.*



Jika panjang sebenar  $PQ$  ialah 80 m, hitung jumlah luas sebenar bagi tiga kawasan.

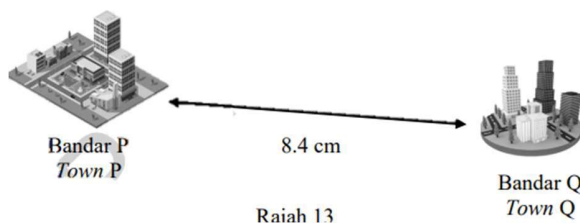
If the actual length of the  $PQ$  is 80 m, calculate the actual area of three areas

- A 160 m
- B 640 m
- C 1920 m
- D 3200 m

Trial 2023, JUJ Pahang, Q29, Ans: D

127 Rajah 13 menunjukkan dua buah bandar,  $P$  dan  $Q$  di atas sebuah peta.

Diagram 13 show the location of two towns,  $P$  and  $Q$  on a map.



Diberi bahawa jarak sebenar di antara Bandar  $P$  dan Bandar  $Q$  ialah 21 km dan jarak dalam peta ialah 8.4 cm. Cari skala yang digunakan dalam peta itu.

Given that the actual distance between Town  $P$  and Town  $Q$  is 21 km and the distance on the map is 8.4 cm. Find the scale used in that map

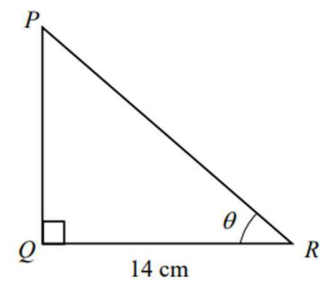
- A 1 : 250
- B 1 : 2 500
- C 1 : 25 000
- D 1 : 250 000

### F3 5.1.9 NISBAH TRIGONOMETRI (SUDUT DONGAKAN & SUDUT TUNDUK)

Trial 2023, SABK/SMKA (SET 2), Q11, Ans: D

128 Rajah 7 menunjukkan sebuah segitiga bersudut tegak  $PQR$ .

Diagram 7 shows a right-angled triangle  $PQR$



Diberi  $QR = 14$  cm dan  $\tan \theta = \frac{24}{7}$ , hitung perimeter, dalam cm, segitiga bersudut tegak itu.

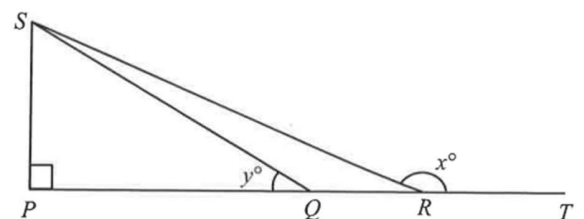
Given  $QR = 14$  cm and  $\tan \theta = \frac{24}{7}$ , find the perimeter, in cm, of the right-angled triangle

- A 56
- B 66
- C 84
- D 112

Trial 2023, SBP, Q35, Ans: A

129 Rajah 20 menunjukkan dua buah segi tiga bersudut tegak,  $PQS$  dan  $PRS$ .  $PQRT$  ialah garis lurus.

Diagram 20 shows two right-angled triangles,  $PQS$  and  $PRS$ .  $PQRT$  is a straight line.



Diberi  $QR = 8$  cm dan  $\cos y = \frac{20}{29}$ , tentukan nilai  $\tan x^\circ$ .

Given  $QR = 8$  cm and  $\cos y = \frac{20}{29}$ , determine the value of  $\tan x^\circ$ .

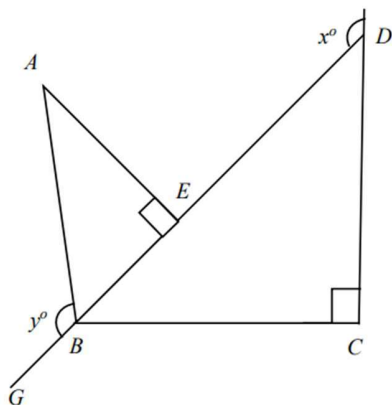
- A  $-\frac{3}{4}$
- B  $-\frac{20}{21}$
- C  $-\frac{21}{20}$
- D  $-\frac{4}{3}$

Trial 2023, JOHOR (SET 2), Q22, Ans: A

130 Rajah 7 menunjukkan,  $FDC$  dan  $GBED$  ialah satu garis lurus.

Diagram 7 shows,  $FDC$  and  $GBED$  is a straight lines.





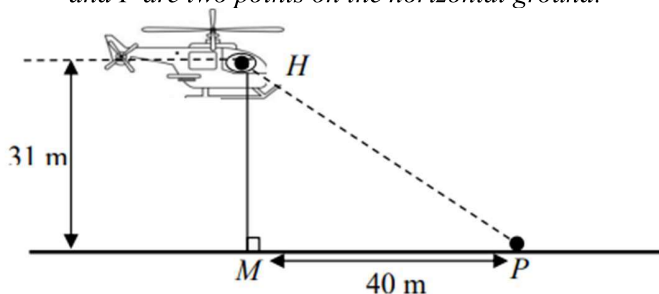
Diberi bahawa  $ED = 29$  cm,  $AB = 13$  cm,  $BC = 16$  cm dan  $\sin x^\circ = \frac{8}{17}$ , cari nilai  $\cos y^\circ$   
 Given that  $ED = 29$  cm,  $AB = 13$  cm,  $BC = 16$  cm and  $\sin x^\circ = \frac{8}{17}$ , find the value of  $\cos y^\circ$

- A  $-\frac{5}{13}$
- B  $\frac{5}{13}$
- C  $-\frac{13}{5}$
- D  $\frac{13}{5}$

Trial 2023, SABK/SMKA (SET 2), Q24, Ans: A

131 Rajah 12 menunjukkan titik H pada sebuah helikopter. M dan P ialah dua titik pada satah mengufuk.

Diagram 12 shows a point H on the helicopter. M and P are two points on the horizontal ground.



Hitung sudut tunduk titik P dari titik H.  
 Calculate the angle of depression of point P from point H.

- A  $37^\circ 47'$
- B  $39^\circ 12'$
- C  $50^\circ 48'$
- D  $52^\circ 13'$

Trial 2023, UD3 Melaka, Q15, Ans: C

132 Seorang budak lelaki dengan ketinggian 1.6 m mendapati bayang-bayang dirinya berukuran 2 m di atas tanah. Anggarkan tinggi sepon pokok jika perbezaan tinggi pokok tersebut dan bayang pokok itu adalah sebanyak 1.2 m.

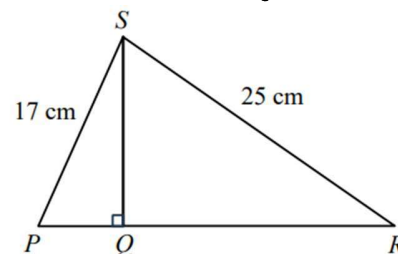
A boy with a height of 1.6 m found that his shadow is 2 m on the ground. Estimate the height of the tree if the different between the height of the tree and its shadow is 1.2 m.

- A 2.67 m
- B 0.96 m
- C 4.8 m
- D 5.6 m

Trial 2023, SMKA/SABK (SET1), Q30, Ans: B

133 Rajah 11 menunjukkan sebuah segi tiga PRS. PQR merupakan suatu garis lurus dan  $\sin \angle QRS = \frac{3}{5}$ .

Diagram 11 shows a triangle PRS. PQR is a straight line and  $\sin \angle QRS = \frac{3}{5}$ .



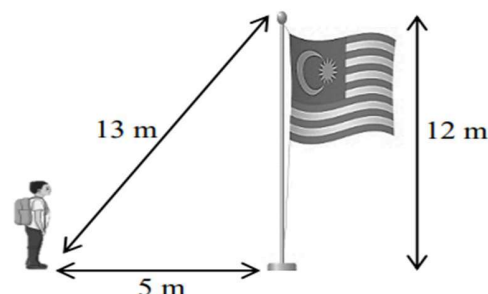
Cari Panjang PR.  
 Find the length of PR.

- A 20 cm
- B 28 cm
- C 33 cm
- D 42 cm

Trial 2023, SMKA/SABK (SET1), Q28, Ans: C

134 Rajah 10 menunjukkan Ali sedang melihat ke puncak tiang bendera.

Diagram 10 shows Ali is looking at the top of a flag pole.



Nyatakan jarak mengufuk dan jarak mencancang di antara Ali dan puncak tiang bendera.

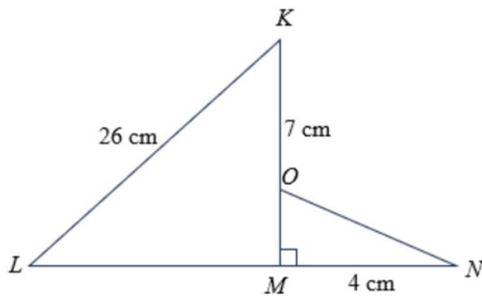
State the horizontal distance and vertical distance between Ali and the top of a flag pole.

	Jarak mengufuk <i>Horizontal distance</i> (m)	Jarak mencancang <i>Vertical distance</i> (m)
A	12	5
B	12	13
C	5	12
D	5	13

Trial 2023, UD3 Melaka, Q22, Ans: B

135 Dalam Rajah 5,  $KLM$  dan  $MNO$  ialah dua buah segi tiga bersudut tegak.

*In Diagram 5,  $KLM$  and  $MNO$  are right-angle triangles.*



Diberi  $\cos KLM = \frac{12}{13}$ , hitung panjang  $ON$ , dalam cm

*Given  $\cos KLM = \frac{12}{13}$ , calculate the length of  $ON$ , in cm.*

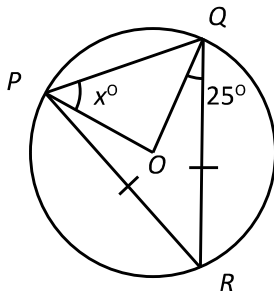
- A 3
- B 5
- C 10
- D 24

**F3, 6.1 SUDUT DAN TANGEN BAGI BULATAN**

Trial 2023, JUJ Pahang, Q8, Ans: A

136 Rajah 2 menunjukkan sebuah bulatan berpusat  $O$ .

*Diagram 2 shows a circle with centre  $O$ .*



Hitung nilai  $x$ .

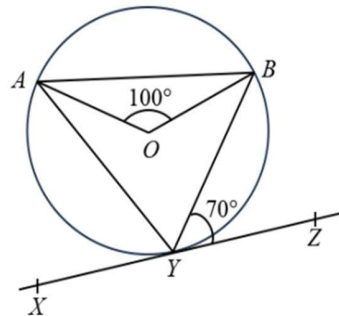
*Calculate the value of  $x$ .*

- A 40
- B 45
- C 50
- D 55

Trial 2023, SMKA/SABK (SET1), Q9, Ans: B

137 Dalam Rajah 2,  $XYZ$  ialah tangen kepada bulatan berpusat di  $O$ .

*In Diagram 2,  $XYZ$  is a tangent to the circle with centre  $O$*



Cari  $\angle ABY$ .

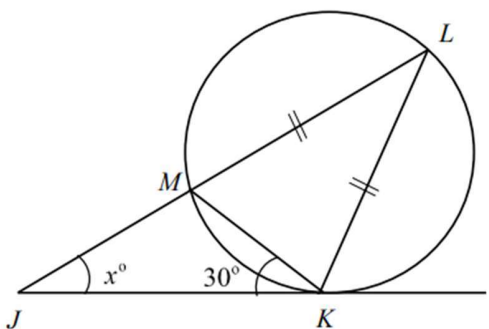
*Find  $\angle ABY$ .*

- A  $50^\circ$
- B  $60^\circ$
- C  $70^\circ$
- D  $100^\circ$

Trial 2023, SABK/SMKA (SET 2), Q8, Ans: B

138 Dalam Rajah 4,  $JK$  ialah tangen kepada bulatan  $KLM$  di  $K$  dan  $JML$  ialah garis lurus

*In Diagram 4,  $JK$  is a tangent to the circle  $KLM$  at  $K$  and  $JML$  is a straight line.*



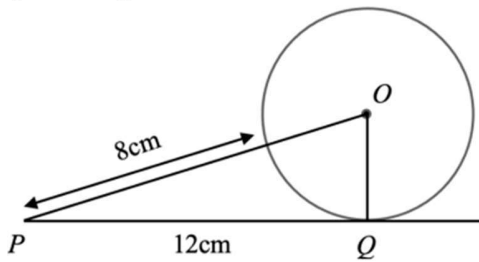
Nilai  $x$  ialah

*The value of  $x$  is*

- A 30
- B 45
- C 60
- D 75

Trial 2023, JOHOR (SET 2), Q8, Ans: A

139 Rajah 2 di bawah menunjukkan bulatan berpusat di O. PQ ialah tangen kepada bulatan. In diagram 2 below shows a circle centered at O. PQ is a tangent to the circle.

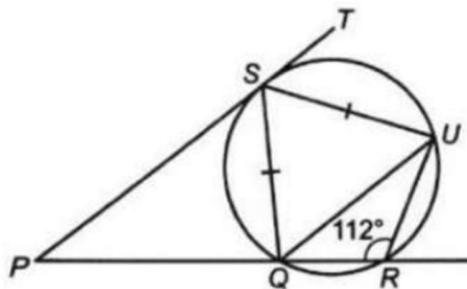


Hitung nilai, dalam cm, jejari bagi bulatan itu. Calculate the value, in cm, of the radius of the circle.

- A 5 cm
- B 7 cm
- C 10 cm
- D 13 cm

Trial 2023, UD3 Melaka, Q18, Ans: C

140 Rajah 3 menunjukkan sebuah bulatan. Diberi PST ialah tangen kepada bulatan pada titik S. SQRU ialah sebuah sisi empat kitaran. Diberi bahawa QS = SU dan PQR ialah garis lurus. Diagram 3 shows a circle. Given that PST is a tangent to a circle at point S. SQRU is a cyclic quadrilateral. Given that QS = SU and PQR is a straight line.



Hitung  $\angle TSU$ .

Find  $\angle TSU$

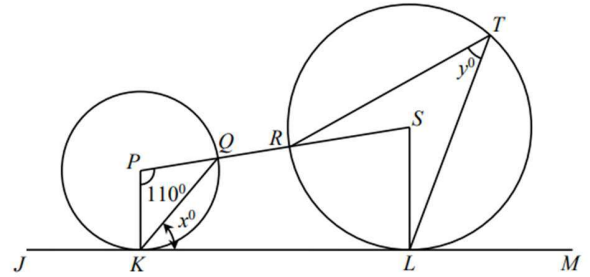
- A  $34^\circ$
- B  $48^\circ$
- C  $56^\circ$
- D  $62^\circ$

Trial 2023, P.GUDANG (SET 1), Q11, Ans: A

141 Rajah 4 menunjukkan dua bulatan yang masing-masing berpusat P dan S. JKLM ialah tangen sepunya kepada bulatan-bulatan itu

masing-masing di K dan L. PQRS ialah garis lurus

Diagram 4 shows two circles with centres P and S respectively. JKLM is a common tangent to the circles at K and L respectively. PQRS is a straight line.



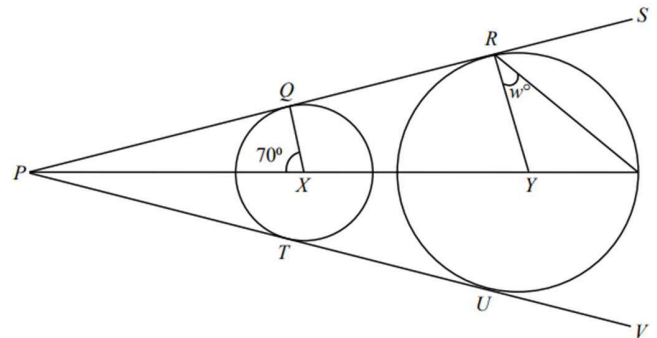
Cari nilai  $x + y$ .

Find the value of  $x + y$ .

- A  $90^\circ$
- B  $100^\circ$
- C  $110^\circ$
- D  $120^\circ$

Trial 2023, PERLIS Q29, Ans: B

142 Rajah 12 menunjukkan dua bulatan berpusat X dan Y. PQRS dan PTUV ialah tangen sepunya bagi kedua-dua bulatan itu. Diagram 12 shows two circles with center X and Y. PQRS and PTUV are the common tangents of the two circles.



Hitung nilai w.

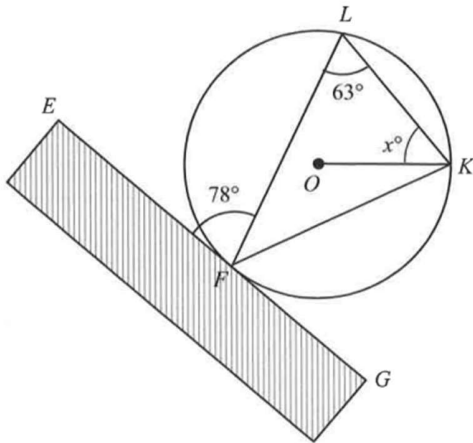
Calculate the value of w.

- A 20
- B 35
- C 55
- D 70

Trial 2023, SBP, Q5, Ans: A

143 Rajah menunjukkan pelan sebuah kolam berbentuk bulatan. Titik O merupakan pusat bulatan dan dinding lurus EFG menyentuh kolam itu pada titik F.

Diagram shows the plan of a circular pond. Point  $O$  is the centre of the circle and the straight wall  $EFG$  touches the pond at point  $F$ .



Diberi bahawa  $\angle EFL = 78^\circ$  dan  $\angle KLF = 63^\circ$ .  
Hitung nilai  $x$ .

Given that  $\angle EFL = 78^\circ$  and  $\angle KLF = 63^\circ$ .  
Calculate the value of  $x$ .

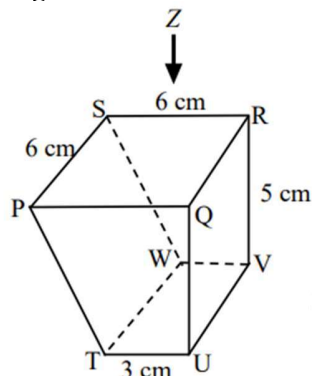
- A 51
- B 39
- C 15
- D 12

**F3 7.2.3 PELAN & DONGAKAN**

Trial 2023, JUJ Pahang, Q35, Ans: A

144 Rajah 15 menunjukkan sebuah pepejal berbentuk prisma tegak di atas permukaan mengufuk. Trapezium  $PTUQ$  ialah keratan rentas seragam pepejal itu.  $QU$  dan  $RV$  adalah garis-garis tegak.

Diagram 15 shows a solid in the shape of a right prism on a horizontal plane. Trapezium  $PTUQ$  is the uniform cross section of the solid.  $QU$  and  $RV$  are vertical edges.



Antara berikut, yang manakah unjuran ortogon pepejal itu pada satah mengufuk sebagaimana dilihat dari arah  $Z$  ?

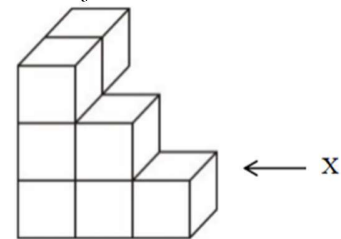
Which of the following is the orthogonal projection of the solid on the horizontal plane as viewed from  $Z$  ?

- A
- B
- C
- D

Trial 2023, JOHOR (SET 2), Q40, Ans: D

145 Rajah 13 menunjukkan suatu gabungan kubus. Antara berikut, unjuran ortogon yang manakah menunjukkan pandangan sisi dari  $X$  ?

Diagram 13 shows a composite cube. Which of the following orthogonal projections is showing the side elevation from  $X$  ?



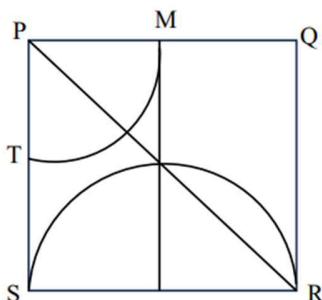
- A
- B
- C
- D

**F3, 8.1 LOKUS DALAM DUA DIMENSI**

Trial 2023, JUJ Pahang, Q15, Ans: D

146 Rajah 7 menunjukkan sebuah segi empat sama PQRS.

Diagram 7 shows a square PQRS



Antara berikut, yang manakah merupakan lokus bagi suatu titik yang bergerak dengan keadaan jaraknya adalah sentiasa sama dari titik Q dan titik S?

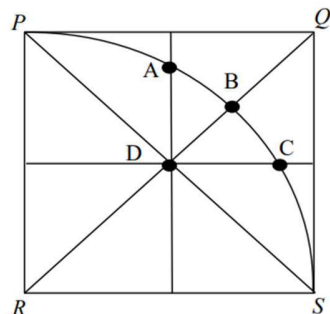
Which of the following is the locus of a point which moves that its distance is always equal from point Q and point S?

- A Lengkung MT/ the arc MT
- B Garis lurus MN/ the straight line MN
- C Lengkung SR/ the arc SR
- D Garis lurus PR/ the straight line PR

Trial 2023, SMKA/SABK (SET1), Q35, Ans: C

147 Rajah 13 menunjukkan segiempat sama PQRS. X dan Y ialah dua titik yang bergerak dalam segiempat sama itu. Titik X sentiasa berjarak sama dari titik P dan titik R. Titik Y sentiasa bergerak dengan keadaan RY = RP.

Diagram 13 shows a square PQRS. X and Y are two moving points in the square. Point X is always equidistant from point P and point R. Point Y is always moving with condition RY = RP



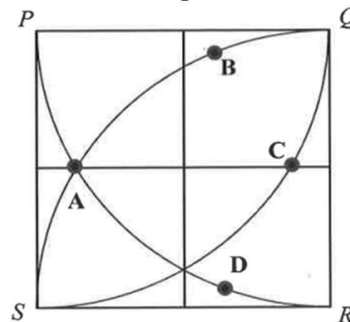
Antara titik A, B, C dan D, yang manakah titik persilangan bagi lokus X dan lokus Y?

Which of the points, A, B, C and D, is the point of intersection of locus of X and locus of Y?

Trial 2023, SBP, Q27, Ans: C

148 Rajah 16 menunjukkan sebuah segi empat sama PQRS dengan sisi 4 cm dan tiga buah sukuan bulatan masing-masing berpusat di P, Q dan R. Titik X dan titik Y ialah dua titik yang bergerak di dalam segi empat tersebut.

Diagram 16 shows a square PQRS with sides 4 cm and three quadrants of a circle with centres P, Q and R respectively. Point X and Point Y are two points that move in the square.



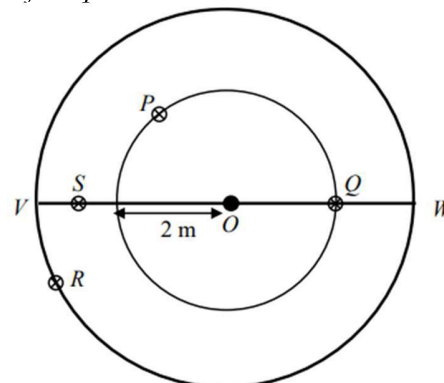
Lokus bagi titik X sentiasa bergerak dengan keadaan  $RX = XQ$  dan lokus Y sentiasa bergerak dengan keadaan kurang 2 cm dari garis QR. Antara titik A, B, C dan D berikut, yang manakah titik persilangan antara lokus X dan lokus Y?

The locus of point X always moves such that  $RX = XQ$  and the locus of point Y moves always less 2 cm from the line of QR. Which of the following points A, B, C and D is the intersection of locus of X and locus Y?

Trial 2023, PERLIS Q13, Ans: A

149 Rajah 6 menunjukkan pelan sebuah kolam berbentuk bulatan yang akan di bina oleh Savitha. O ialah pusat kolam dan W ialah jambatan. Air pancut akan dibina supaya jaraknya sentiasa 1.5 m dari jambatan dan 2 m dari pusat kolam

Diagram 6 shows the plan of the circular pond will be built by Savitha. O is the centre of the pond and VW is the bridge. Fountain will be built so that the distance is 1.5 m from the bridge and 2 m from the centre of the pond.



Antara titik  $P$ ,  $Q$ ,  $R$  dan  $S$ , yang manakah lokasi yang mungkin bagi air pancut tersebut?  
Which of the points  $P$ ,  $Q$ ,  $R$  and  $S$ , represent the location of the fountain

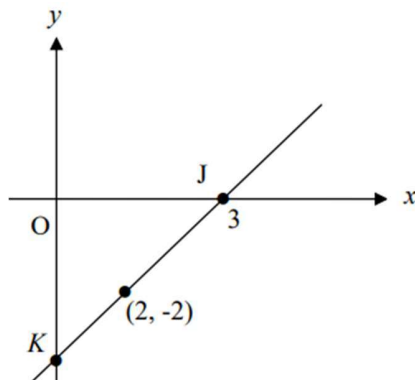
- A  $P$   
B  $Q$   
C  $R$   
D  $S$

### F3, 9.1 GARIS LURUS

Trial 2023, SABK/SMKA (SET 2), Q34, Ans: D

150 Rajah 16 menunjukkan garis lurus JK.

Diagram 16 shows a straight line JK



Cari pintasan-y bagi garis lurus JK.

Find the y-intercept of straight line JK.

- A  $-3$   
B  $-4$   
C  $-5$   
D  $-6$

Trial 2023, SMKA/SABK (SET1), Q29, Ans: D

151 Cari persamaan garis lurus yang melalui titik  $B(-2, 3)$  dan selari dengan garis lurus  $y = -\frac{1}{4}x - 2$ .

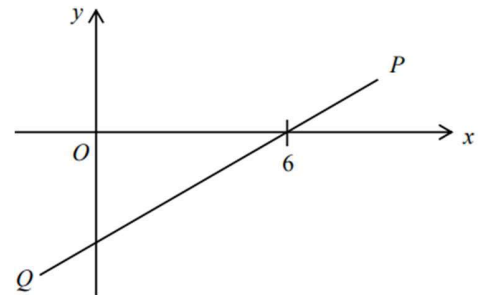
Find the equation of the straight line which passes through point  $B(-2, 3)$  and is parallel to the straight line  $y = -\frac{1}{4}x - 2$ .

- A  $y = -\frac{1}{4}x - 1$   
B  $y = -\frac{1}{4}x + 1$   
C  $y = -\frac{1}{4}x - \frac{5}{2}$   
D  $y = -\frac{1}{4}x + \frac{5}{2}$

Trial 2023, SABK/SMKA (SET 2), Q35, Ans: D

152 Dalam Rajah 17, PQ ialah garis lurus dengan kecerunan  $\frac{1}{3}$

In Diagram 17, PQ is a straight line with gradient  $\frac{1}{3}$



Carikan persamaan bagi garis lurus PQ.

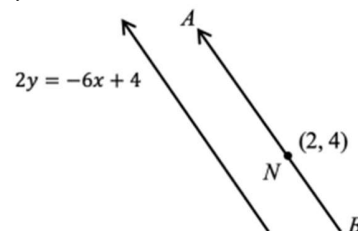
Find the equation of the straight line PQ.

- A  $y = \frac{1}{3}x + 6$   
B  $y = \frac{1}{3}x - 6$   
C  $y = \frac{1}{3}x + 2$   
D  $y = \frac{1}{3}x - 2$

Trial 2023, P.GUDANG (SET 1), Q6, Ans: D

153 Rajah 3 di bawah menunjukkan garis lurus AB yang selari dengan garis lurus yang mempunyai persamaan  $2y = -6x + 4$ .

Diagram 3 below shows the straight lines AB that parallel with the straight line that has the equation  $2y = -6x + 4$ .



Tentukan persamaan garis lurus AB yang melalui titik  $N(2, 4)$ .

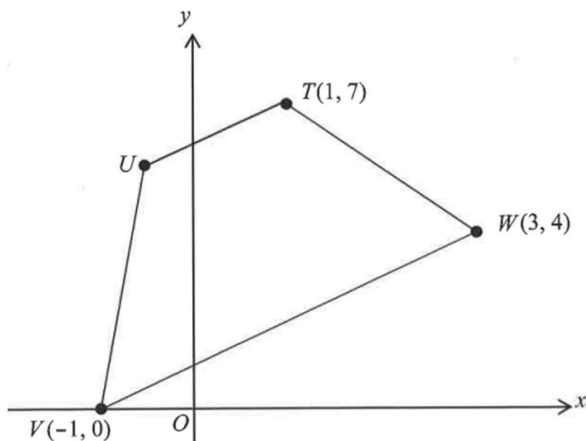
Determine the equation of the straight lines AB that passes through the point  $N(2, 4)$

- A  $y = 3x - 10$   
B  $y = 3x + 10$   
C  $y = -3x - 10$   
D  $y = -3x + 10$

Trial 2023, SBP, Q19, Ans: C

154 Rajah 13 menunjukkan sebuah trapezium TUVW dilukis pada satah Cartes.

Diagram 13 shows a trapezium TUVW drawn on the Cartesian plane.



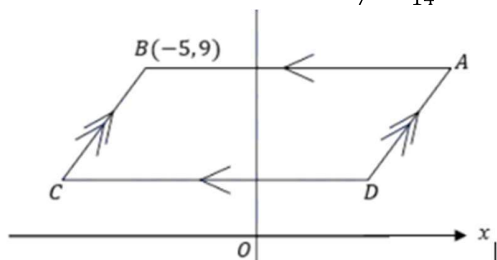
Tentukan persamaan garis lurus  $TU$ .  
Determine the equation for straight line  $TU$ .

- A  $2y - x = 13$   
B  $y - 2x = 5$   
C  $y - x = 6$   
D  $y - x = 1$

Trial 2023, UD3 Melaka, Q31, Ans: A

155 Rajah 8 menunjukkan segi empat selari ABCD pada suatu satah Cartes.  $AB$  adalah selari dengan paksi- $x$ . Persamaan garis lurus  $AD$  ialah  $\frac{x}{7} - \frac{y}{14} = 1$ .

Diagram 8 shows parallelogram  $ABCD$  on a Cartesian plane.  $AB$  is parallel to the  $x$ -axis. The equation of straight line  $AD$  is  $\frac{x}{7} - \frac{y}{14} = 1$



Cari persamaan bagi garis lurus  $BC$ .  
Find the equation of straight line  $BC$ .

- A  $y = 2x + 19$   
B  $y = -2x + 15$   
C  $y = -2x - 19$   
D  $y = 2x + 15$

#### F4 1.1.7 PERSAMAAN KUADRATIK

Trial 2023, UD3 Melaka, Q17, Ans: D

156 Faktorkan/ Factorise  $6x^2 + x - 2$ .

- A  $(2x + 1)(3x - 2)$   
B  $(6x + 1)(3x - 2)$   
C  $(6x - 1)(3x + 2)$   
D  $(2x - 1)(3x + 2)$

Trial 2023, SABK/SMKA (SET 2), Q27, Ans: C

157 Salah satu faktor bagi  $1 - 16x^2$  ialah  
One of the factors of  $1 - 16x^2$  is

- A  $1 - 6x$   
B  $1 + 16x$   
C  $1 + 4x$   
D  $4x - 1$

Trial 2023, JOHOR (SET 2), Q17, Ans: C

158 Permudahkan / Simplify

$$x(x + 3) - 4(x - 2)(x + 2)$$

- A  $3x^2 - 3x - 16$   
B  $3x^2 - 3x + 16$   
C  $-3x^2 + 3x + 16$   
D  $-3x^2 + 3x - 16$

Trial 2023, P.GUDANG (SET 1), Q40, Ans: B

159 Antara yang berikut, yang manakah salah satu punca bagi persamaan kuadratik  $2x^2 - 5x - 12 = 0$ ?

Which of the following is one of the roots of the quadratic equation  $2x^2 - 5x - 12 = 0$ ?

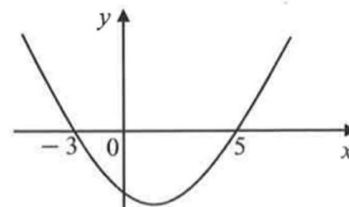
- A  $-4$   
B  $-\frac{3}{2}$   
C  $-\frac{2}{3}$   
D  $2$

#### F4 1.1.7 FUNGSI KUADRATIK

Trial 2023, SBP, Q9, Ans: B

160 Rajah 6 menunjukkan suau graf fungsi kuadratik.

Diagram 6 shows a graph of quadratic function.



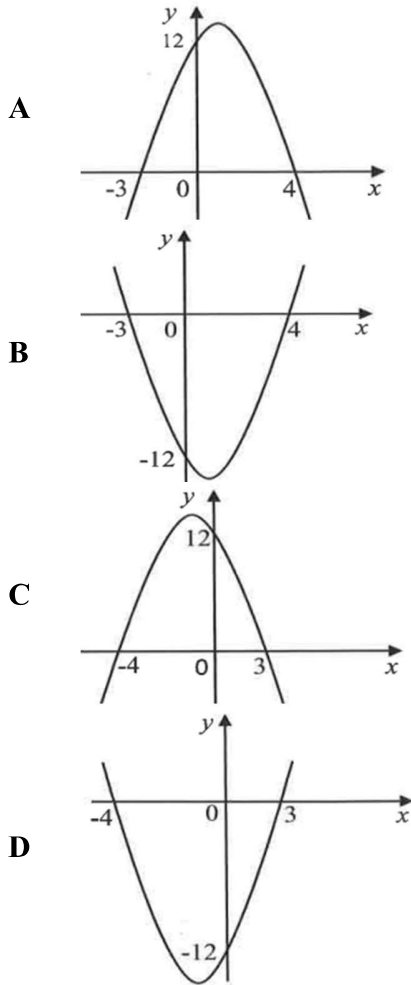
Tentukan persamaan paksi simetri.

Determine the equation of the axis of symmetry.

- A  $x = -1$   
B  $x = 1$   
C  $x = 2$   
D  $x = 4$

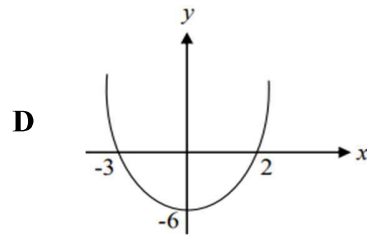
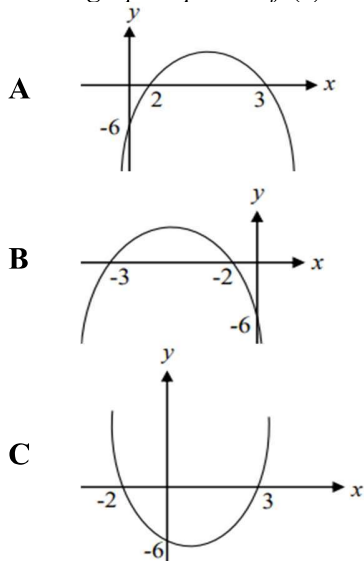
Trial 2023, SBP, Q15, Ans: D

161 Antara graf berikut, yang manakah mewakili  $f(x) = -12 + x + x^2$ ?  
Which of the following graphs represents  $f(x) = -12 + x + x^2$ ?



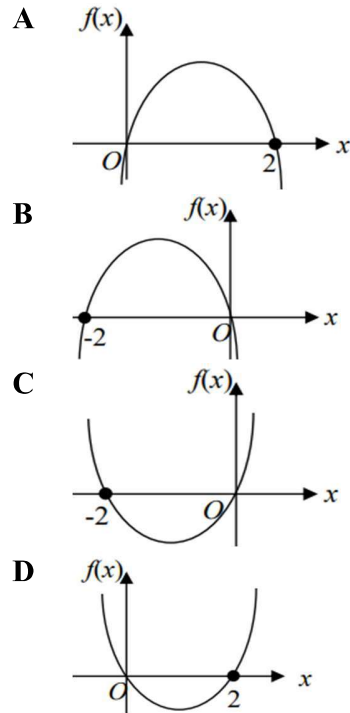
Trial 2023, PERLIS Q35, Ans: C

162 Graf manakah mewakili  $f(x) = x^2 - x - 6$ ?  
Which graph represent  $f(x) = x^2 - x - 6$ ?



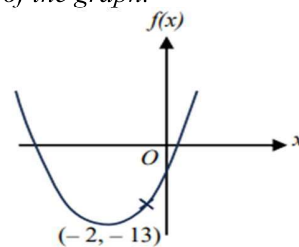
Trial 2023, SMKA/SABK (SET1), Q32, Ans: C

163 Graf manakah yang mewakili  $f(x) = x^2 + 2x$ ?  
Which graph represent  $f(x) = x^2 + 2x$ ?



Trial 2023, JUJ Pahang, Q12, Ans: B

164 Rajah 4 menunjukkan satu graf fungsi kuadratik  $f(x) = 2x^2 + 8x + p$ . Titik  $(-2, -13)$  ialah titik minimum bagi graf tersebut  
Diagram 4 shows a quadratic function of  $f(x) = 2x^2 + 8x + p$ . The point  $(-2, -13)$  is the minimum point of the graph.



Cari nilai  $p$ .  
Find the value of  $p$

- A -7
- B -5
- C -3
- D -2



**Trial 2023, JOHOR (SET 2), Q20, Ans: A**

**165** Cari persamaan paksi simetri bagi graf fungsi kuadratik  $g(x) = 2x^2 + 4x - 3$ .

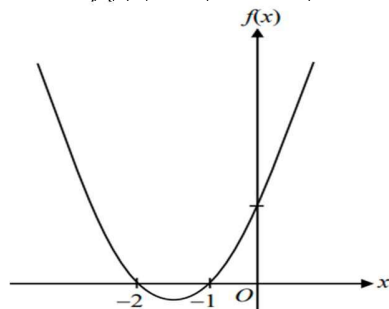
*Find the equation for the axis symmetry of the quadratic function graph  $g(x) = 2x^2 + 4x - 3$ .*

- A  $x = -1$
- B  $x = 1$
- C  $x = -2$
- D  $x = 2$

**Trial 2023, PERLIS Q8, Ans: A**

**166** Rajah 2 menunjukkan suatu graf fungsi kuadratik yang diwakili oleh  $f(x) = 2(x^2 + 3x + c)$

*The graph of the quadratic function in Diagram 2 is represented by  $f(x) = 2(x^2 + 3x + c)$*



Hitung nilai  $c$ .

*Calculate the value of  $c$ .*

- A 2
- B 4
- C 10
- D 20

**Trial 2023, PERLIS Q24, Ans: C**

**167** Diberi salah satu punca persamaan kuadratik  $x^2 - px - 3 = 0$  ialah  $-1$ . Tentukan persamaan paksi simetri bagi graf fungsi kuadratik itu.

*Given one of the roots of the quadratic equation  $x^2 - px - 3 = 0$  is  $-1$ . Determine the equation of the axis of symmetry for the graph of the quadratic function.*

- A  $x = -2$
- B  $x = -1$
- C  $x = 1$
- D  $x = 2$

## F4, 2. 1 ASAS NOMBOR

**Trial 2023, JUJ Pahang, Q4, Ans: C**

**168** Antara berikut, yang manakah mempunyai nilai terkecil?

*Which of the following has the smallest value?*

- A  $56_8$
- B  $105_7$

C  $1021_3$

D  $101110_2$

**Trial 2023, SBP, Q2, Ans: D**

**169** Diberi  $m_5 = 3 \times 5^4 + 2 \times 5^2 + 5 + 4$ .  
Tentukan nilai  $m$ .

*Given  $m_5 = 3 \times 5^4 + 2 \times 5^2 + 5 + 4$ .*

*Determine the value of  $m$ .*

- A 3204
- B 3214
- C 30204
- D 30214

**Trial 2023, P.GUDANG (SET 1), Q13, Ans: B**

**170** Diberi  $P_5 = 347_8$ , cari nilai  $P$ .

*Given that  $P_5 = 347_8$ , find the value of  $P$ .*

- A 1114
- B 1411
- C 4111
- D 4141

**Trial 2023, UD3 Melaka, Q1, Ans: B**

**171** Antara berikut yang manakah adalah sama nilai dengan  $32_{10}$  ?

*Which of the following is the same value as  $32_{10}$  ?*

- A  $36_9$
- B  $40_8$
- C  $2000_4$
- D  $10000_2$

**Trial 2023, JOHOR (SET 2), Q5, Ans: D**

**172** Ungkapkan  $514_6$  sebagai nombor dalam asas lapan.

*Express  $514_6$  as a number in base eight.*

- A  $252_8$
- B  $264_8$
- C  $272_8$
- D  $276_8$

**Trial 2023, SABK/SMKA (SET 2), Q4, Ans: C**

**173** Tukarkan  $2 \times 7^4 + 3 \times 7^2 + 6$  kepada satu nombor dalam asas tujuh.

*Convert  $2 \times 7^4 + 3 \times 7^2 + 6$  to a number in base seven.*

- A  $2036_7$
- B  $2360_7$
- C  $20306_7$
- D  $20360_7$

Trial 2023, JUJ Pahang, Q33, Ans: C

- 174 Selesaikan/ Solve  $10011_2 + 111_2$
- A 11110<sub>2</sub>  
 B 11101<sub>2</sub>  
 C 11010<sub>2</sub>  
 D 10110<sub>2</sub>

Trial 2023, UD3 Melaka, Q2, Ans: C

- 175  $1023_4 + 203_4 - 102_4 =$
- A 1013<sub>4</sub>  
 B 1123<sub>4</sub>  
 C 1130<sub>4</sub>  
 D 1301<sub>4</sub>

Trial 2023, SMKA/SABK (SET1), Q13, Ans: C

- 176 Ungkapkan  $110011_2$  sebagai satu nombor dalam asas 7.  
 Express  $110011_2$  as a number in base 7
- A 12<sub>7</sub>  
 B 51<sub>7</sub>  
 C 102<sub>7</sub>  
 D 201<sub>7</sub>

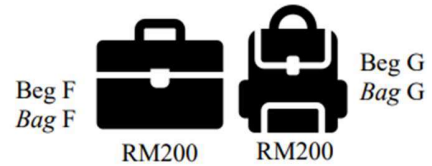
Trial 2023, PERLIS Q39, Ans: D

- 177 Rajah 18 menunjukkan urutan nombor Fibonacci dalam asas 3.  
 Diagram 18 shows a sequence of Fibonacci numbers in base 3.
- $$0_3 \ 1_3 \ 1_3 \ 2_3 \ 10_3 \ 12_3 \ 22_3 \ X_3$$
- Nyatakan nilai X.  
 State the value of X.
- A 33  
 B 34  
 C 110  
 D 111

Trial 2023, JOHOR (SET 2), Q4, Ans: B

- 178 Sebuah kedai beg memberikan diskaun bagi beberapa jenis beg sempena Hari Kebangsaan. Setelah potongan diskaun, Encik Rahman membeli beg jenis F yang berharga RM12120<sub>3</sub> dan Encik Farid membeli beg jenis G yang berharga RM500<sub>6</sub>.  
 A bag store gives discounts on several types of bags in conjunction with National Day. After the discount, Encik Rahman bought a type F bag that

cost RM12120<sub>3</sub> and Encik Farid bought a type G bag that cost RM500<sub>6</sub>.



Berapakah beza diskaun yang diperolehi bagi mereka dan siapa yang mendapat diskaun yang lebih banyak?

How much is the discount difference for them and who gets more discount?

- A 15%, Encik Farid  
 B 15%, Encik Rahman  
 C 10%, Encik Farid  
 D 10%, Encik Rahman

Trial 2023, SABK/SMKA (SET 2), Q5, Ans: D

- 179 Diberi bahawa  $8^2x + y = 110\ 000\ 010_2$ , dengan keadaan  $x$  dan  $y$  ialah integer positif yang kurang daripada lapan. Cari nilai  $x$  dan  $y$ .  
 It is given that  $8^2x + y = 110\ 000\ 010_2$ , where  $x$  and  $y$  are positive integers less than eight. Find the values of  $x$  and  $y$ .
- A  $x = 2, y = 1$   
 B  $x = 4, y = 2$   
 C  $x = 5, y = 2$   
 D  $x = 6, y = 2$

#### F4, 3.1 PENAAKULAN LOGIK

Trial 2023, SMKA/SABK (SET1), Q16, Ans: C

- 180 Antara berikut, yang manakah ialah pernyataan?  
 Which of the following is a statement?
- A  $9 + 2$   
 B  $x - 7$   
 C  $5^2 = 24$   
 D  $x^2 - 3x + 2$

Trial 2023, P.GUDANG (SET 1), Q34, Ans: B

- 181 Antara berikut, yang manakah bukan pernyataan?  
 Which of the following is not a statement?
- A  $5 + 5 = 9$   
 B  $2y = 8$   
 C  $m + 2m = 3m$   
 D 5 ialah faktor bagi 25  
 5 is a factor of 25

**Trial 2023, UD3 Melaka, Q7, Ans: D**

**182** Pernyataan di bawah adalah songsangan bagi suatu implikasi.

*The statement below is the inverse of an implication*

Jika  $k + 4 \neq 9$ , maka  $k \neq 5$   
 If  $k + 4 \neq 9$ , maka  $k \neq 5$

Antara berikut yang manakah adalah kontrapositif bagi songsangan tersebut?

*Which of the following is the contrapositive of the inverse?*

- A** Jika  $k = 5$ , maka  $k + 4 = 9$   
*If  $k = 5$ , then  $k + 4 = 9$*
- B** Jika  $k + 4 = 5$ , maka  $k = 9$   
*If  $k + 4 = 5$ , then  $k = 9$*
- C** Jika  $k + 4 = 9$ , maka  $k = 5$   
*If  $k + 4 = 9$ , then  $k = 5$*
- D** Jika  $k \neq 5$ , maka  $k + 4 \neq 9$   
*If  $k \neq 5$ , then  $k + 4 \neq 9$*

**Trial 2023, JOHOR (SET 2), Q2, Ans: C**

**183** Antara pernyataan di bawah, manakah pernyataan yang BENAR?

*Which of the statements below is TRUE?*

- A** Sebilangan segi tiga mempunyai sudut pedalaman  $180^\circ$ .  
*Some triangles have an interior angle of  $180^\circ$ .*
- B** Sebilangan heksagon mempunyai lima sisi.  
*Some hexagons have five sides.*
- C** Sebilangan nombor perdana adalah nombor ganjil.  
*Some prime numbers are odd numbers.*
- D** Semua teselasi terdiri daripada satu pola bentuk yang berulang sahaja.  
*All tessellations consist of only one repeating shape pattern*

**Trial 2023, JOHOR (SET 2), Q3, Ans: A**

**184** Berdasarkan implikasi di bawah, yang manakah benar berkaitan implikasi tersebut?

*Based on the implication below, which of the following is true regarding the implication?*

Jika  $\sqrt{m} = 25$ , maka  $m = 625$   
 if  $\sqrt{m} = 25$ , then  $m = 625$

- A** Antejadian :  $\sqrt{m} = 25$ , Akibat :  $m = 625$   
*Antecedent:  $\sqrt{m} = 25$ , Consequent:  $m = 625$*

- B** Antejadian :  $m = 625$ , Akibat :  $\sqrt{m} = 25$   
*Antecedent:  $m = 625$ , Consequent:  $\sqrt{m} = 25$*
- C** Antejadian :  $\sqrt{m} = 625$ , Akibat :  $m = 25$   
*Antecedent:  $\sqrt{m} = 625$ , Consequent:  $m = 25$*
- D** Antejadian :  $m = 25$ , Akibat :  $\sqrt{m} = 625$   
*Antecedent:  $m = 25$ , Consequent:  $\sqrt{m} = 625$*

**Trial 2023, P.GUDANG (SET 1), Q35, Ans: A**

**185** Rajah 13 menunjukkan satu bentuk hujah deduktif.

*Diagram 13 shows a form of deductive argument*

Premis 1 : Jika  $3m = 2n$ , maka  $m : n = 2 : 3$ .  
*Premise 1 : If  $3m = 2n$ , then  $m : n = 2 : 3$ .*  
 Premis 2 :  $m : n \neq 2 : 3$ .  
*Premise 2 :  $m : n \neq 2 : 3$ .*  
 Kesimpulan :  
*Conclusion :*

Antara berikut, manakah kesimpulan yang paling sesuai untuk menggantikan kesimpulan dalam Rajah 13?

*Which of the following is the most appropriate conclusion to replace the conclusion in Diagram 13?*

- A**  $3m \neq 2n$
- B**  $3m = 2n$
- C** Jika  $m : n \neq 2 : 3$ , maka  $3m \neq 2n$ .  
*If  $m : n \neq 2 : 3$ , then  $3m \neq 2n$ .*
- D** Jika  $m : n \neq 2 : 3$ , maka  $3m = 2n$   
*If  $m : n \neq 2 : 3$ , then  $3m = 2n$*

**Trial 2023, PERLIS Q17, Ans: A**

**186** Rajah 8 menunjukkan satu implikasi.

*Diagram 8 shows an implication.*

Jika  $x \div 2 = -3$ , maka  $x = -6$   
 If  $x \div 2 = -3$ , then  $x = -6$

Antara berikut, yang manakah benar?

*Which of the following is true?*

	Akas <i>Converse</i>	Nilai kebenaran <i>Truth value</i>
<b>A</b>	Jika $x = -6$ , maka $x \div 2 = -3$ <i>If <math>x = -6</math>, then <math>x \div 2 = -3</math></i>	Benar <i>True</i>
<b>B</b>	Jika $x = -6$ , maka $x \div 2 = -3$ <i>If <math>x = -6</math>, then <math>x \div 2 = -3</math></i>	Palsu <i>False</i>
<b>C</b>	Jika $x \neq -6$ , maka $x \div 2 \neq -3$ <i>If <math>x \neq -6</math>, then <math>x \div 2 \neq -3</math></i>	Benar <i>True</i>
<b>D</b>	Jika $x \neq -6$ , maka $x \div 2 \neq -3$	Palsu

If $x \neq -6$ , then $x \div 2 \neq -3$	False
--	-------

**F4 4.3.3 GABUNGAN OPERASI SET**

Trial 2023, JUJ Pahang, Q16, Ans: D

187 Diberi set  $R$  dan set  $S$  adalah dengan keadaan  $R \cap S = \{3, 7\}$ ,  $(R \cap S)' = \{2, 4, 6, 9\}$  dan  $(R \cup S)' = \{9\}$ . Nyatakan semua unsur bagi  $R \cup S$ .

It is given that set  $R$  and set  $S$  are such that  $R \cap S = \{3, 7\}$ ,  $(R \cap S)' = \{2, 4, 6, 9\}$  and  $(R \cup S)' = \{9\}$ . State all the elements of  $R \cup S$ .

- A {2, 3, 7}
- B {3, 4, 6, 7}
- C {2, 3, 4, 6, 7}
- D {2, 3, 4, 6, 7, 9}

Trial 2023, UD3 Melaka, Q23, Ans: B

188 Diberi  $\xi = \{x : x \text{ ialah integer } 1 \leq x \leq 20\}$ .

Set  $R = \{x : x \text{ ialah nombor perdana}\}$ .

Set  $S = \{x : x \text{ ialah faktor bagi } 20\}$ .

Senaraikan semua unsur bagi  $R \cap S'$

Given that  $\xi = \{x : x \text{ is an integer } 1 \leq x \leq 20\}$ .

Set  $R = \{x : x \text{ is a prime number}\}$ .

Set  $S = \{x : x \text{ is a factor of } 20\}$ .

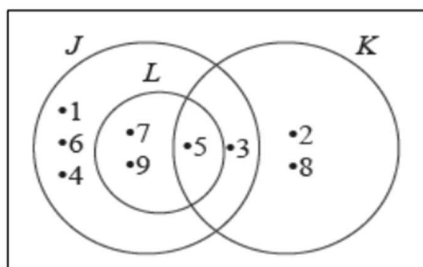
List all elements of  $R \cap S'$ .

- A {2, 5}
- B {3, 7, 11, 13, 17, 19}
- C {1, 2, 3, 4, 5, 7, 10, 11, 13, 17, 19, 20}
- D {2, 3, 5, 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 17, 18, 19}

Trial 2023, SMKA/SABK (SET1), Q26, Ans: C

189 Rajah 8 adalah sebuah gambar rajah Venn yang menunjukkan set semesta,  $\xi$ , set  $J$ , set  $K$ , dan set  $L$ .

Diagram 8 is a Venn diagram showing set  $\xi$ , set  $J$ , set  $K$  and set  $L$ .



Senaraikan semua unsur bagi persilangan set  $K \cap J$ .

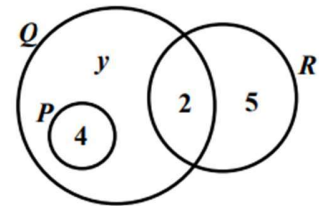
List all the elements of the intersection of the set  $K \cap J$ .

- A {3}
- B {5}
- C {3, 5}
- D {3, 5, 7, 9}

Trial 2023, SABK/SMKA (SET 2), Q29, Ans: C

190 Rajah 15 ialah gambar rajah Venn yang menunjukkan bilangan unsur dalam set  $P$ , set  $Q$  dan set  $R$ .

Diagram 15 is a Venn diagram showing the number of elements in Set  $P$ ,  $Q$  and  $R$



Diberi bahawa set semesta  $\xi = P \cup Q \cup R$  dan  $n(\xi) = 19$ . Cari nilai bagi  $n((R \cap Q)' \cap Q)$ .

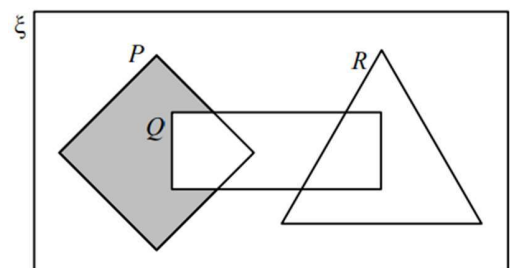
Given that universal set  $\xi = P \cup Q \cup R$  and  $n(\xi) = 19$ . Find the value of  $n((R \cap Q)' \cap Q)$ .

- A 8
- B 10
- C 12
- D 14

Trial 2023, SMKA/SABK (SET1), Q27, Ans: A

191 Rajah 9 ialah gambar rajah Venn dengan set semesta,  $\xi = P \cup Q \cup R$ .

Diagram 9 is a Venn diagram with the universal set,  $\xi = P \cup Q \cup R$ .



Antara berikut, yang manakah mewakili rantau berlorek?

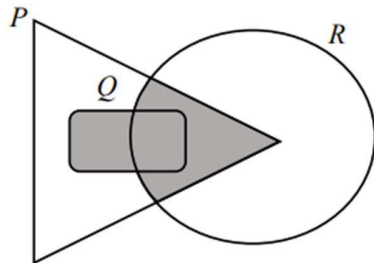
Which of the following represents the shaded region?

- A  $(P \cap Q)' \cap P$
- B  $(Q \cap R)' \cap P$
- C  $(P \cup Q) \cap R'$
- D  $(P \cup R) \cap Q'$

**Trial 2023, JUJ Pahang, Q17, Ans: A**

**192** Rajah 8 menunjukkan gambar rajah Venn bagi set  $P$ , set  $Q$  dan set  $R$ .

Diagram 8 shows a Venn diagram that represents the set  $P$ , set  $Q$  dan set  $R$ .



Tentukan set yang mewakili rantau berlorek.

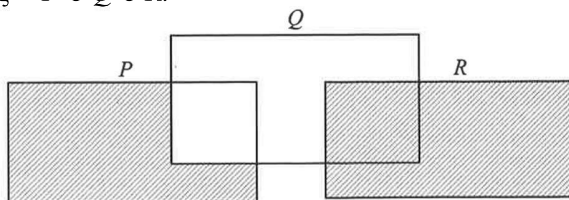
Determine the set represented by the shaded region.

- A  $P \cap (Q \cup R)$
- B  $(P \cap Q) \cup R$
- C  $(P \cup Q) \cap R$
- D  $P \cup (Q \cap R)$

**Trial 2023, SBP, Q13, Ans: C**

**193** Rajah 9 menunjukkan gambar rajah Venn dengan set semesta,  $\xi = P \cup Q \cup R$ .

Diagram 9 shows a Venn diagram with universal set,  $\xi = P \cup Q \cup R$ .



Antara berikut, manakah yang mewakili kawasan berlorek?

Which of the following represents the shaded region?

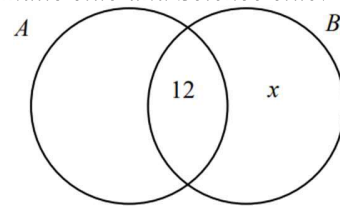
- A  $P \cup Q' \cap R$
- B  $P' \cup Q \cap R$
- C  $P \cap Q' \cup R$
- D  $P' \cap Q' \cup R$

**Trial 2023, JOHOR (SET 2), Q11, Ans: A**

**194** Rajah 4 ialah gambar rajah Venn menunjukkan set  $A = \{ \text{Ahli Kelab Matematik} \}$  dan set  $B = \{ \text{Ahli Kelab Sains} \}$ . Jika  $n(A) = 20$  dan  $n(B) = 30$ . Hitung jumlah ahli Kelab Matematik dan Kelab Sains.

Diagram 4 is a Venn diagram shows set  $A = \{ \text{member of Mathematic club} \}$  and set  $B =$

$\{ \text{member of Science club} \}$ . If  $n(A) = 20$  and  $n(B) = 30$ . Calculate the total number of members of Mathematic club and Science club.

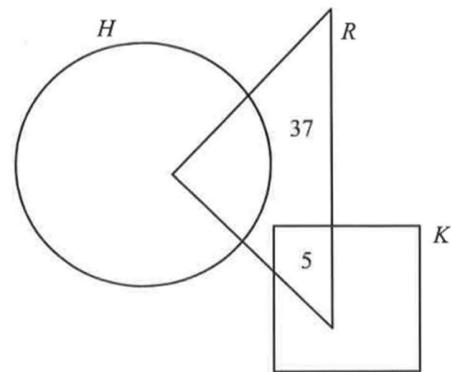


- A 38
- B 36
- C 42
- D 50

**Trial 2023, SBP, Q14, Ans: D**

**195** Rajah 10 ialah gambar rajah Venn yang menunjukkan bilangan murid mengikut sukan kegemaran mereka. Diberi set semesta,  $\xi = H \cup R \cup K$ , set  $H = \{ \text{murid yang suka bermain hoki} \}$ , set  $R = \{ \text{murid yang suka bermain ragbi} \}$  dan set  $K = \{ \text{murid yang suka bermain kriket} \}$ .

Diagram 10 is a Venn diagram that shows the number of pupils according to their favourite sports. Given the universal set,  $\xi = H \cup R \cup K$ , set  $H = \{ \text{pupils who like to play hockey} \}$ , set  $R = \{ \text{pupils who like to play rugby} \}$  and set  $K = \{ \text{pupils who like to play cricket} \}$ .



Diberi  $n(H) = 32$ ,  $n(R) = 65$  dan  $n(K) = 22$ .

Hitung bilangan murid yang tidak suka bermain ragbi.

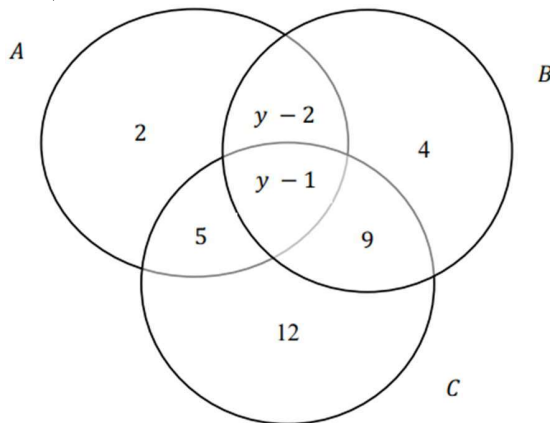
Given  $n(H) = 32$ ,  $n(R) = 65$  and  $n(K) = 22$ . Calculate the number of pupils who do not like to play rugby.

- A 9
- B 11
- C 17
- D 26

**Trial 2023, P.GUDANG (SET 1), Q38, Ans: B**

- 196** Rajah 14 menunjukkan bilangan unsur dalam set semesta. Diberi  $\xi = A \cup B \cup C$  dan  $n(B') = n(B \cap C)$ .

Diagram 14 shows the number of elements in universal set. Given  $\xi = A \cup B \cup C$  and  $n(B') = n(B \cap C)$ .



Tentukan nilai  $y$ .

Determine the value of  $y$ .

- A** 10  
**B** 11  
**C** 12  
**D** 13

**Trial 2023, JOHOR (SET 2), Q12, Ans: D**

- 197** Sebanyak 80 orang murid diminta memilih makanan kegemaran yang disediakan oleh pihak sekolah iaitu burger, mi goreng dan nasi lemak. Sebanyak 50 orang memilih burger, 40 orang memilih nasi lemak, 5 orang memilih burger dan mi goreng, 3 orang memilih nasi lemak dan mi goreng, 20 orang memilih burger dan nasi lemak. Jika hanya seorang yang memilih ketiga-tiga makanan tersebut, hitung jumlah murid yang hanya memilih mi goreng sahaja

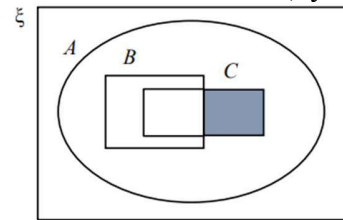
A total of 80 students need to choose their favourite food provided by the school which is burgers, fried noodles and nasi lemak. 50 people choose burgers, 40 people choose nasi lemak, 5 people choose burger and fried noodles, 3 people choose nasi lemak and fried noodles and 20 people choose burgers and nasi lemak. If only one person chooses all the three types of food, calculate the number of students who choose fried noodles only.

- A** 20  
**B** 15  
**C** 11  
**D** 10

**Trial 2023, JOHOR (SET 2), Q13, Ans: A**

- 198** Rajah 5 ialah gambar rajah Venn yang menunjukkan set A, set B dan set C dengan set semesta,  $\xi = A \cup B \cup C$ .

Diagram 5 is a Venn diagram shows set A, set B and set C and universal set,  $\xi = A \cup B \cup C$ .



Antara yang berikut, yang manakah mewakili kawasan berlorek?

Which of the following represents the shaded area?

- A**  $(A \cap B)' \cap (B \cup C)$   
**B**  $(A \cap B)' \cup (B \cup C)$   
**C**  $A \cap (B \cap C)$   
**D**  $A \cap (B \cup C)'$

**Trial 2023, P.GUDANG (SET 1), Q36, Ans: B**

- 199** Diberi set semesta,  $\xi = \{x : x \text{ ialah integer, } 1 \leq x \leq 14\}$ , set  $A = \{x : x \text{ ialah integer dan } x < 12\}$  dan set  $B = \{x : x \text{ ialah nombor genap dan } x \geq 0\}$ . Nyatakan  $A \cap B$ .

It is given that the universal set,  $\xi = \{x : x \text{ is an integer, } 1 \leq x \leq 14\}$ , set  $A = \{x : x \text{ is an integer and } x < 12\}$  and set  $B = \{x : x \text{ is an even number and } x \geq 0\}$ . State  $A \cap B$ .

- A**  $\{0, 2, 4, 6, 8, 10\}$   
**B**  $\{2, 4, 6, 8, 10\}$   
**C**  $\{2, 4, 6, 8, 10, 12\}$   
**D**  $\{0, 2, 4, 6, 8, 10, 12\}$

**Trial 2023, P.GUDANG (SET 1), Q37, Ans: B**

- 200** Diberi set  $A = \{x : x \text{ ialah nombor ganjil kurang daripada } 10\}$ , set  $B = \{x : x \text{ ialah nombor perdana kurang daripada } 11\}$  dan set  $C = \{x : x \text{ ialah gandaan } 3 \text{ kurang daripada } 12\}$  dan  $\xi = A \cup B \cup C$ . Tentukan  $n(\xi)$ .

Given set  $A = \{x : x \text{ is an odd number less than } 10\}$ , set  $B = \{x : x \text{ is a prime number less than } 11\}$  and set  $C = \{x : x \text{ is a multiple of } 3 \text{ less than } 12\}$  and  $\xi = A \cup B \cup C$ . Determine  $n(\xi)$ .

- A** 6  
**B** 7  
**C** 8

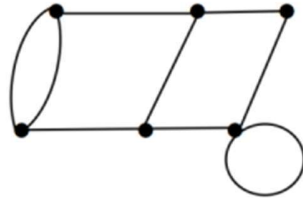
D 9

**F4 5.1.4 RANGKAIAN DALAM TEORI GRAF**

Trial 2023, SMKA/SABK (SET1), Q18, Ans: B

**201** Rajah 5 berikut menunjukkan suatu graf yang mempunyai berbilang tepi dan gelung.

Diagram 5 below shows a graph has multiple edges and loops



Tentukan  $n(E)$ .

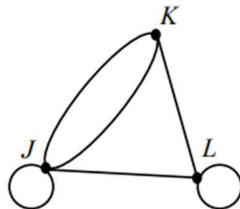
Determine  $n(E)$ .

- A 8
- B 9
- C 10
- D 11

Trial 2023, SABK/SMKA (SET 2), Q14, Ans: B

**202** Rajah 10 menunjukkan satu graf yang mempunyai gelung dan berbilang tepi.

Diagram 10 shows a graph that has loops and multiple edges



Antara berikut, yang manakah ialah set tepi bagi graf itu?

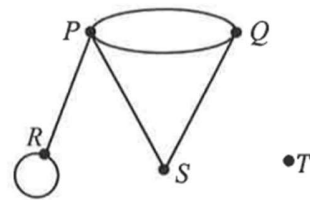
Which of the following is the set of edges for the graph?

- A  $\{(J, J), (J, K), (K, L), (J, L), (L, L)\}$
- B  $\{(J, J), (J, K), (J, K), (K, L), (J, L), (L, L)\}$
- C  $\{(J, J), (J, K), (K, L), (K, L), (J, L)\}$
- D  $\{(J, J), (L, L), (J, L), (J, L), (K, L), (J, K)\}$

Trial 2023, SBP, Q16, Ans: C

**203** Rajah 11 menunjukkan suatu graf yang mempunyai gelung dan berbilang tepi.

Diagram shows a graph with loop and multiple edges.



Pilih maklumat yang betul berkaitan graf tersebut.

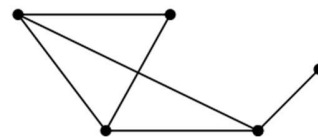
Choose the correct information related to the graph.

	$n(V)$	$n(E)$	$\sum d(v)$
A	4	6	12
B	4	7	14
C	5	6	12
D	5	7	14

Trial 2023, JUJ Pahang, Q14, Ans: A

**204** Rajah 6 menunjukkan sebuah graf.

Diagram 6 shows a graph



Antara berikut, yang manakah bukan satu pokok berdasarkan graf di atas?

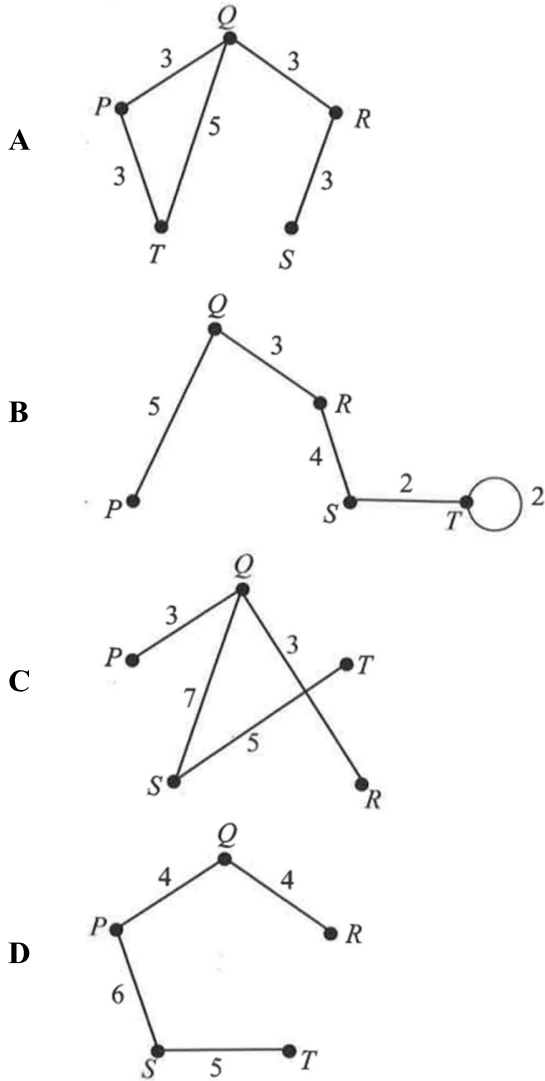
Which of the following is not a tree based on the above graph?

- A
- B
- C
- D

Trial 2023, SBP, Q38, Ans: C

**205** Antara berikut, yang manakah merupakan satu pokok dengan jumlah pemberat minimum?

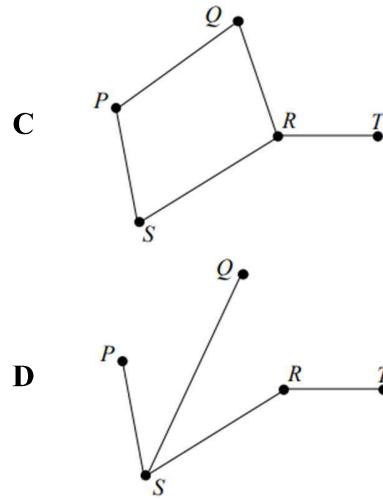
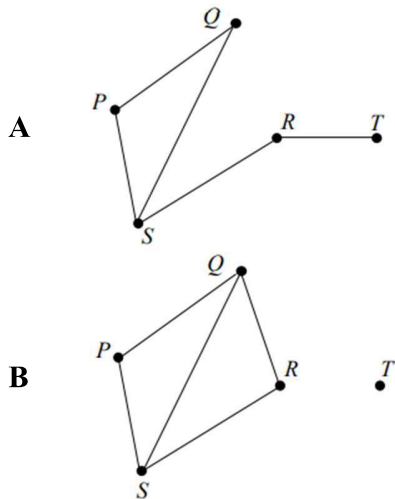
Which of the following is a tree with minimum total weight?



Trial 2023, PERLIS Q15, Ans: D

206 Antara subgraf berikut, yang manakah mewakili suatu pokok?

Which of the following subgraph represent a tree?



Trial 2023, UD3 Melaka, Q32, Ans: C

207 Bilangan darjah yang manakah menunjukkan bahawa suatu graf tidak boleh dilukis?

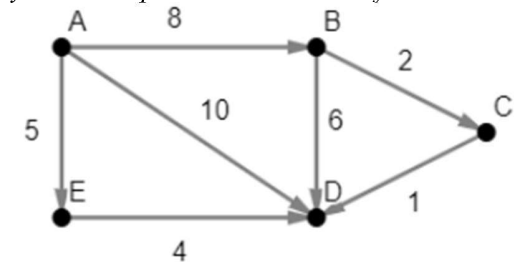
Which number of degrees indicates that a graph cannot be drawn?

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

Trial 2023, JOHOR (SET 2), Q29, Ans: B

208 Rajah 10 menunjukkan kos perjalanan sebuah teksi daripada stesen A ke stesen D. Berdasarkan rajah di bawah, laluan yang manakah menghasilkan kos optimum untuk laluan dari A ke D?

Diagram 10 shows the cost of a taxi from station A to station D. Based on diagram below, which path yields the optimal cost to travel from A to D?



- A  $A \rightarrow D$
- B  $A \rightarrow E \rightarrow D$
- C  $A \rightarrow B \rightarrow D$
- D  $A \rightarrow B \rightarrow C \rightarrow D$

Trial 2023, P.GUDANG (SET 1), Q31, Ans: D



**209** Antara berikut, yang manakah set bucu dan set tepi bagi suatu graf berbilang tepi dan mempunyai gelung?

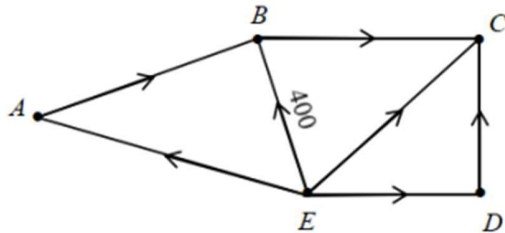
*Which of the following is the set of vertices and set of edges of a graph with multiple edges and a loop?*

- A  $\{J, K, L\}$   $\{(J, J), (J, K), (J, L), (K, L)\}$
- B  $\{J, K, L\}$   $\{(J, K), (J, K), (J, L), (K, L)\}$
- C  $\{J, K, L, M\}$   $\{(J, K), (J, M), (K, L), (L, L), (L, M), (M, M)\}$
- D  $\{J, K, L, M\}$   $\{(J, K), (J, M), (K, K), (K, L), (L, M), (L, M)\}$

**Trial 2023, P.GUDANG (SET 1), Q32, Ans: C**

**210** Rajah 12 ialah graf terarah berpemberat yang menunjukkan bilangan cip komputer ke bahagian kawalan mutu *A, B, C, D* dan *E* di Kilang Tech Sistem.

*Diagram 12 is a directed weighted graph that indicates the number of computer chips to the quality control department. A, B, C, D and E at Tech Sistem Factory.*



Diberi bahawa  $d_{in}(A) = d_{in}(D) = 200$  unit. Hitung  $d_{out}(B)$ .

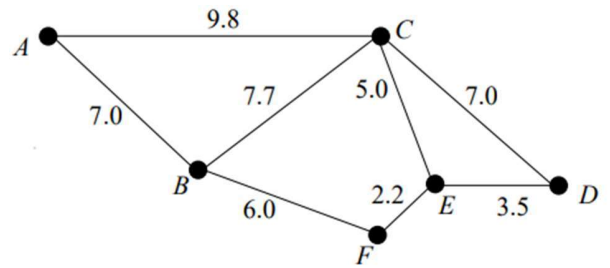
*Given that  $d_{in}(A) = d_{in}(D) = 200$  units. Calculate  $d_{out}(B)$ .*

- A 200
- B 400
- C 600
- D 800

**Trial 2023, SABK/SMKA (SET 2), Q15, Ans: A**

**211** Rajah 11 menunjukkan suatu graf tak terarah dan berpemberat. Nilai pemberat mewakili jarak dalam km

*Diagram 11 shows an undirected and weighted graph. The weight represents the distance, in km.*



Hitung beza antara jarak terpanjang dan jarak terpendek, dalam meter, dari bucu *A* ke bucu *E*.

*Calculate the difference between the longest and shortest distance, in meters from point A to point E.*

- A 10 900
- B 10 500
- C 5 500
- D 4 900

**Trial 2023, P.GUDANG (SET 1), Q33, Ans: C**

**212** Encik Maswi bekerja di Kulai. Beliau ingin melawat keluarganya di Miri pada suatu hujung minggu tertentu. Pada hari Jumaat, waktu bekerja Encik Maswi akan tamat pada pukul 12.30 tengah hari. Jadual 5 enunjukkan pilihan laluan penerbangan domestik pada hari Jumaat dan hari Sabtu minggu tersebut oleh sebuah syarikat penerbangan swasta di Malaysia.

*Mr Maswi works in Kulai. He plans to visit his family in Miri on a certain weekend. On Friday, Mr Maswi's work ends at 12.30 noon. Table 5 shows the choices of domestic flight routes of a private airline in Malaysia on Friday and Saturday for that week.*

Laluan Route	Jumaat / Friday		Sabtu / Saturday	
	Masa Time	Harga Tiket Price of ticket	Masa Time	Harga Tiket Price of ticket
Johor Bahru – Miri	Tiada penerbangan No flight		Jam (1705 – 1900) (1705 – 1900) hrs	RM239.30

Johor Bahru – Kuching	Jam (1630 – 1755) (1630 – 1755) hrs	RM144.30	Jam (0605 – 0730) (0605 – 0730) hrs	RM174.30
	Jam (2000 – 2125) (1930 – 2055) hrs		Jam (1205 – 1330) (1205 – 1330) hrs	
Kuching – Miri	Jam (2010 – 2115) (2010 – 2115) hrs	RM149.00	Jam (0835 – 0940) (0835 – 0940) hrs	RM84.00
	Jam (2155 – 2300) (2155 – 2300) hrs		Jam (1145 – 1250) (1145 – 1250) hrs	

Tentukan penerbangan yang paling murah dari Johor Bahru ke Miri.

*Determine the most economical flight from Johor Bahru to Miri*

- A** Johor Bahru – Miri (Sabtu, Jam 1705)  
*Johor Bahru – Miri (Saturday, 1705 hrs)*
- B** Johor Bahru – Kuching (Jumaat, Jam 1630) dan seterusnya Kuching – Miri (Jumaat, Jam 2010).  
*Johor Bahru – Kuching (Friday, 1630 hrs) and then Kuching – Miri (Friday, 2010 hrs).*
- C** Johor Bahru – Kuching (Sabtu, Jam 0605) dan seterusnya Kuching – Miri (Sabtu, Jam 1145).

*Johor Bahru – Kuching (Saturday, 0605 hrs) and then Kuching – Miri (Saturday, 1145 hours).*

- D** Johor Bahru – Kuching (Sabtu, Jam 0605 pagi) dan seterusnya Kuching – Miri (Sabtu, Jam 0835).

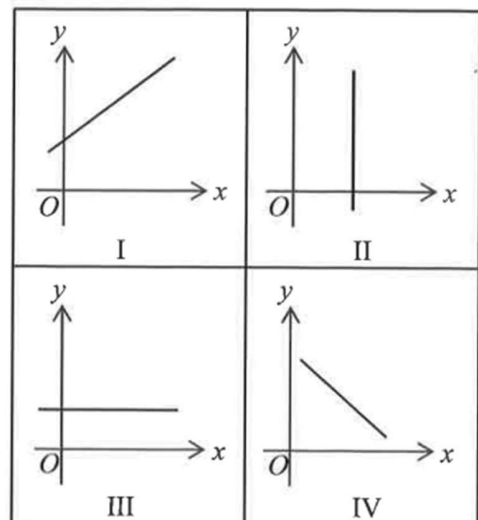
*Johor Bahru – Kuching (Saturday, 0605 hrs) and then Kuching – Miri (Saturday, 0835 hrs).*

#### F4 6.2.4 KETAKSAMAAN LINEAR DALAM DUA PEMBOLEH UBAH

Trial 2023, SBP, Q20, Ans: B

- 213** Manakah antara rajah I, II, III dan IV yang berikut mewakili secara grafik persamaan linear dalam dua pemboleh ubah ?

*Which of the following diagrams, I, II, III and IV represent graphically a linear equation in two variables ?*

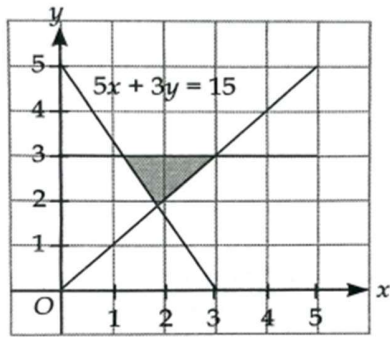


- A** I dan/ and III  
**B** I dan/ and IV  
**C** II dan/ and III  
**D** II dan/ and IV

Trial 2023, P.GUDANG (SET 1), Q22, Ans: B

- 214** Antara ketaksamaan berikut, yang manakah memuaskan rantau berlorek bagi graf ketaksamaan seperti yang ditunjukkan dalam Rajah 6?

*Which of the following inequalities satisfies the shaded region of the inequality graph as shown in Diagram 6?*

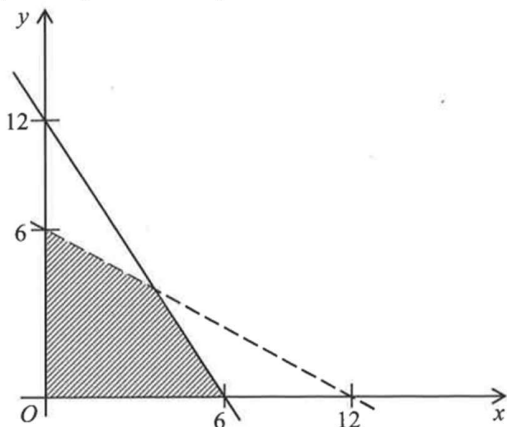


- A  $5x + 3y \leq 15, y \leq x$  dan/and  $y \leq 3$
- B  $5x + 3y \geq 15, y \geq x$  dan/and  $y \leq 3$
- C  $5x + 3y \leq 15, y \geq x$  dan/and  $y \leq 3$
- D  $5x + 3y > 15, y \leq x$  dan/and  $y \leq 3$

Trial 2023, SBP, Q18, Ans: C

215 Rajah 12 menunjukkan suatu Rantau berlorek yang ditakrifkan oleh suatu sistem ketaksamaan linear.

Diagram 12 shows a shaded region defined by a system of linear inequalities.



Antara berikut, manakah ketaksamaan yang mewakili Rantau berlorek, selain daripada  $x \geq 0$  dan  $y \geq 0$  ?

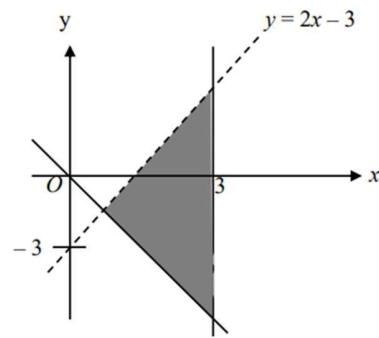
Which of the following inequalities that represent the shaded region other than  $x \geq 0$  and  $y \geq 0$  ?

- A  $2y < x + 12, y \leq 2x + 12$
- B  $2y \leq x + 12, y < 2x + 12$
- C  $12 - 2y > x, 12 - y \geq 2x$
- D  $12 - 2y \geq x, 12 - y > 2x$

Trial 2023, JUJ Pahang, Q22, Ans: A

216 Rajah 9 menunjukkan rantau berlorek yang memuakan suatu sistem ketaksamaan.

Diagram 9 shows a shaded region that satisfied the inequalities system.



Antara berikut yang manakah mewakili sistem ketaksamaan berikut?

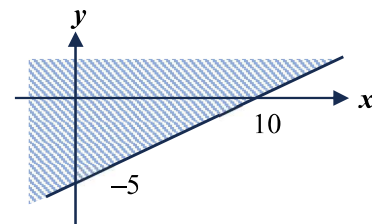
Which of the following represents the system of linear inequalities?

- A  $y \geq -x, y < 2x - 3, x \leq 3$
- B  $y > -x, y \leq 2x - 3, x < 3$
- C  $y < -x, y \geq 2x - 3, x > 3$
- D  $y \leq -x, y > 2x - 3, x \geq 3$

Trial 2023, JOHOR (SET 2), Q37, Ans: D

217 Rajah 12 menunjukkan satu rantau berlorek pada satah Cartes. Nyatakan ketaksamaan yang mentakrifkan rantau berlorek berikut?

Diagram 12 shows a shaded region on a Cartesian plane. State the inequality which defines the following shaded region.

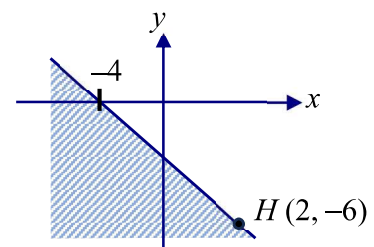


- A  $2y \geq 10 - x$
- B  $2y \geq x - 5$
- C  $2y \leq x - 10$
- D  $2y \geq x - 10$

Trial 2023, JUJ Pahang, Q24, Ans: C

218 Rajah 11 menunjukkan satu garis lurus GH yang dilukis pada satah Cartes.

Diagram 11 shows a straight line GH drawn in a Cartesian plane.



Tentukan ketaksamaan yang mewakili kawasan berlorek.

Determine the inequality that represent the shaded region

- A  $y < -2x - 3$   
 B  $y \geq -2x - 3$   
 C  $y \leq -x - 4$   
 D  $y > -x - 4$

#### F4 7.2.2 GRAF LAJU-MASA, LUAS DI BAWAH GRAF

Trial 2023, JUJ Pahang, Q9, Ans: A

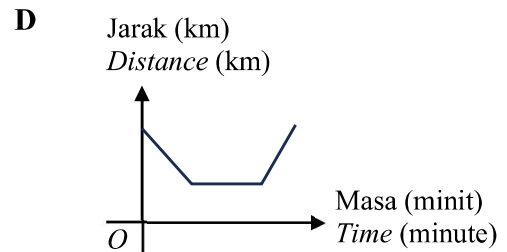
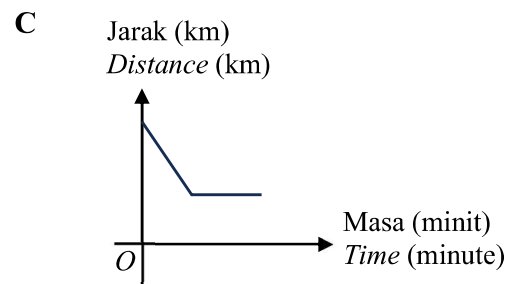
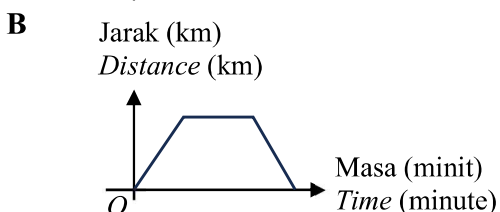
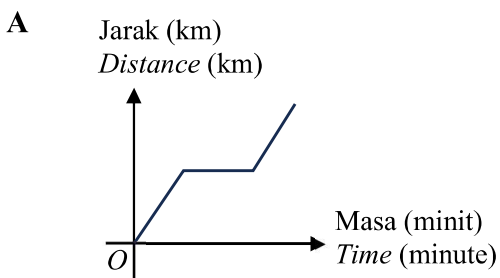
219 Jadual 1 menunjukkan catatan perjalanan Tin dari rumah ke pejabatnya.

Table 1 shows Tin's journey notes from her house to office.

Masa / Time	Catatan / Note
7:40 a.m.	Mula perjalanan/ Start journey
7:55 a.m.	Mengisi minyak di stesen minyak/ Refuel at a petrol station
8:10 a.m.	Meneruskan perjalanan/ Continue journey
8:40 a.m.	Tiba di pejabat/ Arrive at office

Graf manakah yang mewakili perjalanannya?

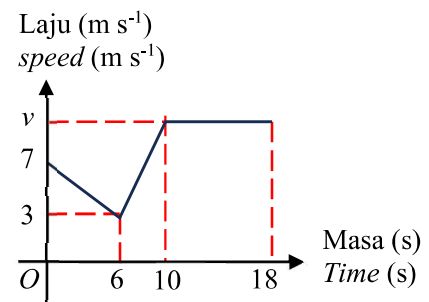
Which graph that represent her journey?



Trial 2023, UD3 Melaka, Q37, Ans: D

220 Rajah 11 menunjukkan graf laju-masa bagi satu zarah dalam tempoh 18 saat.

Diagram 11 shows speed-time graph of a particle within 18 seconds.



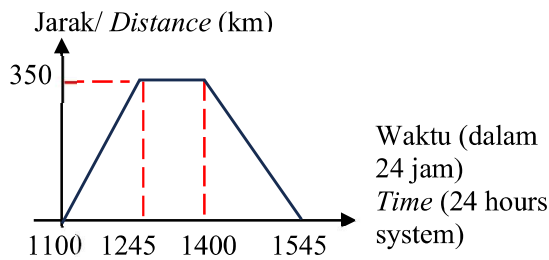
Hitung nilai  $v$  jika jumlah jarak yang dilalui oleh zarah itu semasa laju seragam ialah 72 m.  
Calculate the value of  $v$  if the total distance travelled by the particle during uniform speed is 72 m.

- A 6  
 B 7  
 C 8  
 D 9

Trial 2023, UD3 Melaka, Q35, Ans: B

221 Rajah 10 menunjukkan graf jarak-masa bagi pergerakan sebuah lori.

Diagram 10 shows the distance-time graph for the movement of a lorry.



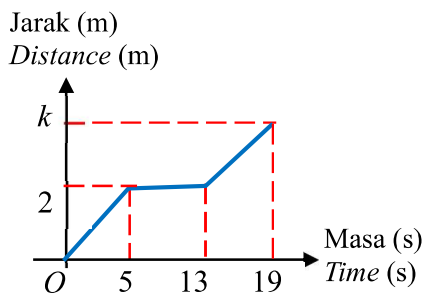
Nyatakan tempoh masa, dalam jam, lori itu berhenti.

State the duration of time, in hour, the lorry stopped.

- A 1.15 jam / hours
- B 1.25 jam / hours
- C 1.35 jam / hours
- D 2 jam / hours

Trial 2023, SBP, Q28, Ans: C

- 222 Rajah 17 menunjukkan graf jarak-masa bagi pergerakan suatu zarah dalam tempoh 19 saat. Diagram 17 shows the distance-time graph for the movement of a particle for a period of 19 seconds.

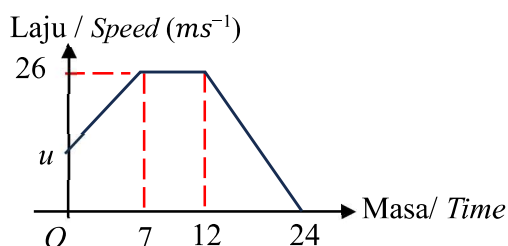


Diberi laju zarah itu bergerak dalam tempoh 6 saat terakhir ialah  $0.9 \text{ m s}^{-1}$ . Hitung nilai  $k$ . Given the speed of the particle for the last 6 seconds is  $0.9 \text{ m s}^{-1}$ . Calculate the value of  $k$ .

- A 5.40 m
- B 6.67 m
- C 7.40 m
- D 8.67 m

Trial 2023, JOHOR (SET 2), Q21, Ans: B

- 223 Rajah 6 menunjukkan graf laju-masa bagi pergerakan zarah dalam tempoh 24 saat. Diagram 6 shows speed-time graph for the movement of a particle for a period of 24

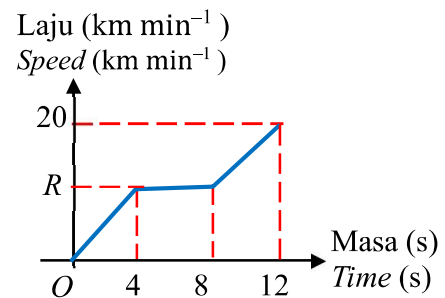


Jumlah jarak yang dilalui oleh zarah itu ialah 398 m. Hitung nilai bagi  $u$ . The total distance travelled by the particle are 398 m. Calculate the value of  $u$ .

- A 5
- B 6
- C 7
- D 8

Trial 2023, PERLIS Q7, Ans: C

- 224 Rajah 1 menunjukkan graf laju-masa bagi pergerakan sebuah bas. Diagram 1 shows the speed-time graph for a motion of a bus.



Hitung nilai R jika jumlah jarak yang dilalui dengan laju seragam yang dilalui oleh bas itu adalah 48 km.

Calculate the value of R if the distance travelled with uniform speed by the bus is 48 km.

- A 6
- B 8
- C 12
- D 24

#### F4 8.2.6 SUKATAN SERAKAN DATA TAK TERKUMPUL (MIN, SISIHAN PIAWAI)

Trial 2023, PERLIS Q4, Ans: A

- 225 Diberi markah Matematik bagi tujuh orang murid di dalam suatu ujian ialah 45, 80, 72, 54, 65, 50 dan 89. Hitung varians bagi set data itu. Given the marks of seven students in a Mathematics tests are 45, 80, 72, 54, 65, 50 and 89. Calculate the variance of the data set.

- A 228
- B 3998
- C 4388
- D 25350

Trial 2023, SMKA/SABK (SET1), Q37, Ans: B

- 226 Rajah 15 menunjukkan skor yang diperoleh seorang peserta dalam suatu kuiz. Diagram 15 shows the scores obtained by a participant in a quiz

11, 18, 17, 14, 15, 12, 13, 12
--------------------------------

Tentukan julat antara kuartil bagi skor peserta tersebut.

*Determine the interquartile range for the participant's score.*

- A** 3  
**B** 4  
**C** 5  
**D** 9

**Trial 2023, UD3 Melaka, Q26, Ans: A**

**227** Kira sisihan piawai bagi data berikut.

*Calculate the standard deviation of the following data.*

10, 11, 12, 14, 17, 18, 23
----------------------------

- A** 4.276  
**B** 4.277  
**C** 18.285  
**D** 18.293

**Trial 2023, P.GUDANG (SET 1), Q27, Ans: C**

**228** Diberi varians satu set data 2, 4, 5, 6 dan 7 ialah 2.96. Sekiranya setiap cerapan dalam set data itu didarab dengan 3 kemudian ditambah dengan 3, hitung varians baharu bagi set data tersebut.

*Given that the variance of a set of data 2, 4, 5, 6 and 7 is 2.96. If each value in the set is multiplied by 3 then added by 3, calculate the new variance of the set of data.*

- A** 8.88  
**B** 11.88  
**C** 26.64  
**D** 29.64

**Trial 2023, P.GUDANG (SET 1), Q28, Ans: C**

**229** Jadual 4 menunjukkan jadual kekerapan bagi skor yang diperoleh sekumpulan murid dalam pertandingan memanah.

*Table 4 shows a frequency table for the scores obtained by a group of pupils in archery competition.*

Skor Score	Kekerapan Frequency
1	4
2	3

3	2
4	y
5	1

Jika julat antara kuartil ialah 3, nyatakan satu nilai y yang mungkin.

*If the interquartile range is 3, state one possible value of y.*

- A** 1  
**B** 2  
**C** 5  
**D** 6

**Trial 2023, JOHOR (SET 2), Q25, Ans: C**

**230** Data di bawah menunjukkan taburan skor yang diperoleh 9 orang pelajar dalam satu ujian Matematik.

*The data below shows the distribution of scores obtained by 9 students in a mathematics test.*

78, 68, 70, 63, 66, 53, 72, 54, 62
------------------------------------

Tentukan kuartil yang pertama.

*Determine the first quartile*

- A** 53  
**B** 62  
**C** 58  
**D** 71

**Trial 2023, JOHOR (SET 2), Q26, Ans: A**

**231** Jadual 2 menunjukkan bilangan buku yang dibaca oleh sekumpulan pelajar dalam 5 hari.

*Table 2 shows the number of books read by a group of students in 5 days*

Bil Buku No. of books	2	3	4	5	6
Kekerapan Frequency	4	x	3	3x	5

Min bagi bilangan buku yang dibaca oleh setiap orang pelajar ialah 4.3. Cari nilai x.

*The mean of the number of books read by each student is 4.3. Find the value of x.*

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

### F4 9.3 KEBARANGKALIAN PERISTIWA BERGABUNG

**Trial 2023, P.GUDANG (SET 1), Q30, Ans: B**

**232** Rajah 11 menunjukkan sembilan keping kad huruf di dalam sebuah kotak.

*Diagram 11 shows nine letter cards in a box.*

M A T E M A T I K

Dua keping kad dipilih secara rawak dari kotak itu tanpa pengembalian. Hitung kebarangkalian bahawa kedua-dua kad itu bukan huruf vokal.

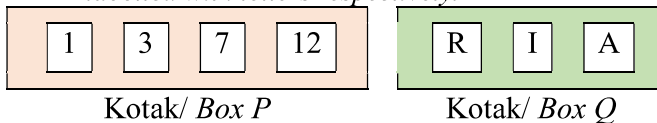
*Two cards are chosen at a random from the box without replacement. Calculate the probability that both the cards are not vowels*

- A  $\frac{1}{6}$   
 B  $\frac{5}{18}$   
 C  $\frac{16}{18}$   
 D  $\frac{25}{18}$

**Trial 2023, SBP , Q32, Ans: A**

**233** Rajah 19 menunjukkan kotak P dan kotak Q masing-masing mengandungi empat keping kad berlabel dengan nombor dan tiga keping kad yang berlabel dengan huruf.

*Diagram 19 shows box P and box Q contain of four cards labelled with numbers and three cards labelled with letters respectively.*



Sekeping kad diambil secara rawak masing-masing dari kotak P dan kotak Q. Hitung kebarangkalian mendapat faktor bagi 21 dan huruf vokal.

*A card is randomly drawn from boxes P and Q squares respectively. Calculate the probability of getting a factor of 21 and vowel.*

- A  $\frac{1}{2}$   
 B  $\frac{1}{3}$   
 C  $\frac{6}{49}$   
 D  $\frac{4}{49}$

**Trial 2023, SABK/SMKA (SET 2), Q36, Ans: D**

**234** Humaira akan mengambil ujian dalam talian pada minggu hadapan. Kebarangkalian Humaira akan lulus ujian dalam talian ialah

0.7. Hitung kebarangkalian jika dia lulus ujian dalam talian tersebut setelah 3 kali percubaan.  
*Humaira will take the online test next week. The probability that Humaira will pass the online test is 0.7. Calculate the probability if she passes the online test after 3 attempts*

- A 0.910  
 B 0.343  
 C 0.189  
 D 0.063

**Trial 2023, SABK/SMKA (SET 2), Q37, Ans: B**

**235** Iskandar membawa 7 biji guli biru, 5 biji guli kuning dan 6 biji guli merah dalam satu permainan. Dua biji guli diambil secara rawak dalam permainan itu. Cari kebarangkalian bahawa kedua-dua guli itu mempunyai warna yang sama.

*Iskandar brings 7 blue marbles, 5 yellow marbles and 6 red marbles in a game. Two marbles are taken at random in that game. Find the probability that the two marbles are the same colour.*

- A  $\frac{23}{81}$   
 B  $\frac{46}{153}$   
 C  $\frac{55}{162}$   
 D  $\frac{162}{55}$   
 153

#### F4, 10.1 PENGURUSAN KEWANGAN (ALIRAN TUNAI)

**Trial 2023, SABK/SMKA (SET 2), Q32, Ans: C**

**236** Shahifull menyimpan sebanyak RM6 500 di sebuah bank dengan kadar faedah mudah  $x\%$  setahun. Jumlah simpanan Shahifull pada akhir tahun keempat adalah sebanyak RM7 410. Hitung nilai  $x$ .

*Shahifull deposits RM6 500 in a bank which pays a simple interest rate of  $x\%$  per annum. The total saving of Shahifull at the end of the fourth year is RM7 410. Calculate the value of  $x$*

- A 2.8  
 B 3.0  
 C 3.5  
 D 4.0

**Trial 2023, SABK/SMKA (SET 2), Q31, Ans: D**

**237** Pendapatan aktif Jasmin ialah RM3 500. Perbelanjaan tetap dan perbelanjaan tidak tetapnya masing-masing ialah RM3 800 dan

RM1 200. Berapakah pendapatan pasif Jasmin supaya aliran tunai itu adalah positif?

*Jasmin's active income is RM3 500. Her fixed expenses and variable expenses are RM3 800 and RM1 200 respectively. How much is Jasmin's passive income so that the cash flow is positive?*

- A RM1 000
- B RM1 200
- C RM1 500
- D RM2 000

Trial 2023, JUU Pahang, Q31, Ans: A

238 Jadual 4 menunjukkan lima langkah dalam proses pengurusan kewangan.

*Table 4 shows five steps the financial management process.*

G	Melaksanakan plan kewangan <i>Carrying out financial plan</i>
H	Menetapkan matlamat kewangan <i>Setting goals</i>
L	Mengkaji semula dan menyemak kemajuan <i>Reviewing and revising the progress</i>
J	Mewujudkan plan kewangan <i>Creating financial plan</i>
K	Menilai kedudukan kewangan <i>Evaluating financial status</i>

Antara berikut urutan yang manakah menunjukkan proses pengurusan kewangan yang betul?

*Which of the following sequences shows the correct financial management process?*

- A  $H \rightarrow K \rightarrow J \rightarrow G \rightarrow L$
- B  $L \rightarrow J \rightarrow H \rightarrow K \rightarrow G$
- C  $K \rightarrow G \rightarrow J \rightarrow H \rightarrow L$
- D  $H \rightarrow L \rightarrow K \rightarrow G \rightarrow J$

Trial 2023, JUU Pahang, Q18, Ans: D

239 Antara berikut, yang manakah suatu liabiliti?

*Which of the following is liability?*

- A Pelaburan/ *Investment*
- B Amanah saham/ *Unit trust*
- C Simpanan tetap/ *Fixed savings*
- D Hutang kad kredit/ *Credit card debt*

Trial 2023, JUU Pahang, Q38, Ans: A

240 Jadual 4 menunjukkan ringkasan plan kewangan keluarga Puan Zara.

*Table 4 shows the summary of Puan Zara's family financial plan.*

Gaji bersih/ <i>Net salary</i>	RM6 000
Pendapatan pasif/ <i>Passive income</i>	RM1 800
Simpanan tetap bulanan/ <i>Fixed monthly income</i>	
Simpanan untuk dana kecemasan/ <i>Savings for emergency fund</i>	RM200
Jumlah perbelanjaan tetap bulanan/ <i>Total monthly fixed expenses</i>	RM3 250
Jumlah perbelanjaan tidak tetap bulanan/ <i>Total monthly variable expenses</i>	RM2 740

Diberi simpanan tetap bulanan ialah 10% daripada jumlah pendapatan bulanan. Tentukan pendapatan lebihan atau kurangan Puan Zara.

*Given the fixed monthly income is 10% of the total monthly income. Determine the surplus of income or deficit of Puan Zara.*

- A Pendapatan lebihan sebanyak RM830  
*Surplus of income of RM830*
- B Pendapatan lebihan sebanyak RM1 010  
*Surplus of income of RM1 010*
- C Kurangan sebanyak RM830  
*Deficit of RM830*
- D Kurangan sebanyak RM1 010  
*Deficit of RM1 010*

Trial 2023, JUU Pahang, Q19, Ans: C

241 Jadual 2 menunjukkan perbelanjaan Puan Shida.

*Table 2 shows Puan Shida's expenses.*

Perbelanjaan/ <i>Expenses</i>	RM
Premium insurans/ <i>Insurance premium</i>	180
Ansuran rumah/ <i>House instalment</i>	1250
Barangan runcit/ <i>Groceries</i>	160
Ansuran kereta/ <i>Car instalment</i>	400
Kos Perubatan/ <i>Medical expenses</i>	280
Pakaian/ <i>Clothing</i>	90

Hitung perbelanjaan tetap Puan Shida.

*Calculate the fixed expenses of Puan Shida.*

- A RM1 650
- B RM1 740
- C RM1 830
- D RM1 920

F5, 1.1 UBAHAN

Trial 2023, JUU Pahang, Q21, Ans: D



- 242** Diberi bahawa  $P$  berubah secara songsang dengan kuasa dua  $Q$  dan secara langsung dengan punca kuasa dua  $R$ .

Cari hubungan antara  $P$ ,  $Q$  dan  $R$

*Given that  $P$  varies inversely as the square of  $Q$  and directly as the square root of  $R$ .*

*Find the relation between  $P$ ,  $Q$  and  $R$ .*

- A**  $P \propto \frac{Q^2}{\sqrt{R}}$   
**B**  $P \propto \frac{R^2}{\sqrt{Q}}$   
**C**  $P \propto \frac{\sqrt{Q}}{R^2}$   
**D**  $P \propto \frac{\sqrt{R}}{Q^2}$

**Trial 2023, PERLIS Q27, Ans: A**

- 243** Jadual 1 menunjukkan masa yang diperlukan untuk menyiapkan satu lembaran kerja,  $m$  dan bilangan murid,  $n$

*Table 1 shows the time needed to complete a worksheet,  $m$  and the number of students,  $n$ .*

$m$	$n$
18	2
$x$	3

Diberi bahawa  $m$  berubah secara songsang dengan kuasa dua bilangan murid,  $n$ .

Cari nilai  $x$ .

*It is given that  $m$  varies inversely as the square of the number of students,  $n$ . Find the value of  $x$ .*

- A** 8  
**B** 12  
**C** 18  
**D** 40.5

**Trial 2023, P.GUDANG (SET 1), Q18, Ans: D**

- 244** Diberi bahawa  $x \propto y^2 z$ , ungkapkan  $x$  dalam sebutan  $y$  dan  $z$  jika  $x = 6$  apabila  $y = 2$  dan  $z = 9$ .

*Given that  $x \propto y^2 z$ , express  $x$  in terms of  $y$  and  $z$  if  $x = 6$  when  $y = 2$  and  $z = 9$ .*

- A**  $x = \frac{y^2 z}{3}$   
**B**  $x = 6y^2 z$   
**C**  $x = \frac{yz}{6}$   
**D**  $x = \frac{y^2 z}{6}$

**Trial 2023, PERLIS Q9, Ans: D**

- 245** Encik Nukman memandu dari Bandar Aman ke Bandar Damai sejauh  $j$  km, dengan laju,  $h$

km/j dalam tempoh,  $m$  jam. Diberi hubungan antara laju, jarak dan masa ialah  $h \propto \frac{j^2}{\sqrt{m}}$ .

Antara yang berikut, yang manakah mewakili nilai-nilai  $h$ ,  $j$  dan  $m$  apabila nilai pemalar ubahan,  $k = 1$ .

*Encik Nukman drives from Bandar Aman dan Bandar Damai in a distance of  $j$  km, with the speed of  $h$  km/j in a period of  $m$  hours. Given the relation between the speed, distance and time is  $h \propto \frac{j^2}{\sqrt{m}}$ . Which of the following represent the values of  $h$ ,  $j$  and  $m$  when the values of the variation constant,  $k = 1$ .*

	$h$	$j$	$m$
<b>A</b>	100	100	10
<b>B</b>	105	23	25
<b>C</b>	110	100	2
<b>D</b>	125	25	25

**Trial 2023, P.GUDANG (SET 1), Q19, Ans: C**

- 246** Jarak,  $s$  yang dilalui oleh sebuah bas sekolah berubah secara langsung dengan kuasa dua laju,  $v$ , dan secara songsang dengan pecutan,  $a$ . Diberi bahawa  $s = 240$  m,  $v = 12 \text{ ms}^{-1}$  dan  $a = 0.3 \text{ ms}^{-2}$ . Hitung nilai  $a$  apabila  $s = 540$  m dan  $v = 18 \text{ ms}^{-1}$ .

*The distance,  $s$  travelled by a school bus varies directly as the square of the speed,  $v$ , and inversely as acceleration,  $a$ . Given that  $s = 240$  m,  $v = 12 \text{ ms}^{-1}$  and  $a = 0.3 \text{ ms}^{-2}$ . Calculate the value of  $a$  when  $s = 540$  m and  $v = 18 \text{ ms}^{-1}$ .*

- A** 0.15  
**B** 0.2  
**C** 0.3  
**D** 0.4

**Trial 2023, SMKA/SABK (SET1), Q15, Ans: D**

- 247** Diberi  $w$  berubah secara langsung dengan  $x^2$  dan secara songsang dengan  $z$ . Jika  $w = 20$ , apabila  $x = 5$  dan  $z = 2$ , cari nilai  $z$  apabila  $w = 160$  dan  $x = 40$ .

*It is given that  $w$  varies directly as  $x^2$  and inversely as  $z$ . If  $w = 20$ , when  $x = 5$  and  $z = 2$ , find the value of  $z$  when  $w = 160$  and  $x = 40$ .*

- A**  $\frac{8}{5}$   
**B**  $\frac{40}{25}$   
**C** 2

**D** 16

**Trial 2023, JOHOR (SET 2), Q14, Ans: D**

**248** Diberi  $y$  berubah secara songsang dengan  $x$  dan  $y = \frac{1}{3}$  apabila  $x = 18$ . Hitung nilai  $x$  apabila  $y = 9$

*Given that  $y$  varies inversely as  $x$  and  $y = \frac{1}{3}$  when  $x = 18$ . Calculate the value of  $x$  when  $y = 9$ .*

- A**  $\frac{1}{6}$   
**B**  $\frac{1}{3}$   
**C** 3  
**D**  $\frac{2}{3}$

**Trial 2023, UD3 Melaka, Q8, Ans: D**

**249** Diberi bahawa  $s$  berubah secara langsung dengan punca kuasa dua  $t$  dan secara songsang dengan  $u$ . Jika  $s = 8$  apabila  $t = 36$  dan  $u = 3$ , ungkapkan  $s$  dalam sebutan  $t$  dan  $u$ .

*Given that  $s$  varies directly with the square root of  $t$  and inversely with  $u$ . If  $s = 8$  when  $t = 36$  and  $u = 3$ , express  $s$  in terms of  $t$  and  $u$*

- A**  $s = 4\sqrt{tu}$   
**B**  $s = \frac{2\sqrt{t}}{u}$   
**C**  $s = 6\sqrt{tu}$   
**D**  $s = \frac{4\sqrt{t}}{u}$

**Trial 2023, SABK/SMKA (SET 2), Q38, Ans: D**

**250** Jadual 5 menunjukkan beberapa nilai pemboleh ubah,  $t$ ,  $h$  dan  $w$ .

*Table 5 shows some values of the variables  $t$ ,  $h$  and  $w$ .*

$w$	3	4
$t$	3	8
$h$	9	$x$

Diberi bahawa  $w \propto \frac{t}{\sqrt{h}}$ , hitungkan nilai  $x$ .

*Given that  $w \propto \frac{t}{\sqrt{h}}$ , calculate the value of  $x$ .*

- A** 3  
**B** 6  
**C** 12  
**D** 36

**Trial 2023, SBP, Q30, Ans: A**

**251** Jadual 1 menunjukkan nilai-nilai pemboleh ubah  $w$ ,  $r$  dan  $t$ .

*Table shows the values of the variables  $w$ ,  $r$  and  $t$ .*

$w$	20	30
$r$	30	$x$
$t$	0.75	1.25

Diberi  $w$  berubah secara langsung dengan  $r$  dan berubah secara songsang dengan kuasa dua  $t$ .

*Given that  $w$  varies directly as  $r$  and inversely as the square of  $t$ . Calculate the value of  $x$ .*

- A** 125  
**B** 100  
**C** 75  
**D** 27

**Trial 2023, JUJ Pahang, Q21, Ans: D**

**252** Jadual 3 menunjukkan hubungan di antara tiga pembolehubah  $g$ ,  $h$  dan  $f$ .

*Table 3 shows the relation between three variables  $g$ ,  $h$  and  $f$*

$g$	$h$	$f$
3	$x$	6
2.5	10	2

Diberi bahawa  $g$  berubah secara langsung dengan  $h$  dan berubah secara songsang dengan  $f$ . Cari nilai  $x$ .

*Given that  $g$  varies directly as  $h$  and varies inversely as  $f$ . Find the value of  $x$ .*

- A** 4  
**B** 18  
**C** 25  
**D** 36

**Trial 2023, JOHOR (SET 2), Q15, Ans: A**

**253** Tenaga keupayaan,  $E$  Joule bagi suatu objek berubah secara langsung dengan jisimnya,  $m$  kg, pecutan graviti,  $g$   $\text{ms}^{-2}$  dan kedudukan ketinggiannya,  $h$  m. Diberi  $E = 190$  Joule apabila  $m = 4$  kg,  $g = 9.81$   $\text{ms}^{-2}$  dan  $h = 6$  m. Kirakan tenaga keupayaan objek tersebut jika  $m = 6$  kg,  $g = 9.81$   $\text{ms}^{-2}$  dan  $h = 8$  m

*The potential energy,  $E$  Joule of an object varies directly with its mass,  $m$  kg, gravitational acceleration,  $g$   $\text{ms}^{-2}$  and its height position,  $h$  m. Given  $E = 190$  Joules when  $m = 4$  kg,  $g = 9.81$   $\text{ms}^{-2}$  and  $h = 6$  m. Calculate the potential energy of the object if  $m = 6$  kg,  $g = 9.81$   $\text{ms}^{-2}$  and  $h = 8$  m*

- A** 380 Joule  
**B** 583 Joule  
**C** 370 Joule

**D** 440 Joule

**Trial 2023, SMKA/SABK (SET1), Q14, Ans: B**

**254** Dalam suatu projek inovasi, 5 orang murid ditugaskan untuk membina model pejabat 3D. Masa yang diperlukan untuk menyiapkan projek itu ialah 4 hari. Diberi masa,  $t$  berubah secara songsang dengan bilangan murid,  $n$ . Hitung masa, dalam hari, yang diperlukan jika bilangan murid membuat projek ini berganda dua kali.

*In an innovation project, 5 students were assigned to build a 3D office model. The time required to complete the project is 4 days. Given time,  $t$  varies inversely as the number of students,  $n$ . Calculate the time, in days, needed if the number of students to complete this project is double.*

- A 1
- B 2
- C 6
- D 10

**Trial 2023, JOHOR (SET 2), Q16, Ans: B**

**255** Tinggi sebuah tangki air berbentuk silinder berubah secara langsung dengan isipadunya dan secara songsang dengan kuasa dua jejaringnya. Diberi tinggi tangki air itu ialah 7 m apabila isipadunya  $269.5 \text{ m}^3$  dan jejaringnya  $3.5 \text{ m}$ . Kirakan isipadu tangki jika tingginya  $5 \text{ m}$  dan jejaringnya  $7 \text{ m}$ .

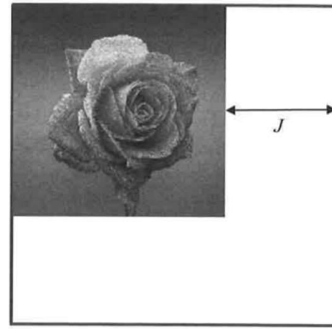
*The height of a cylindrical water tank varies directly with its volume and inversely with the square of its radius. Given the height of the water tank is  $7 \text{ m}$  when the volume is  $269.5 \text{ m}^3$  and the radius is  $3.5 \text{ m}$ . Calculate the volume of the tank if the height is  $5 \text{ m}$  and the radius is  $7 \text{ m}$ .*

- A  $705 \text{ m}^3$
- B  $770 \text{ m}^3$
- C  $760 \text{ m}^3$
- D  $700 \text{ m}^3$

**Trial 2023, SBP, Q29, Ans: B**

**256** Rajah 18 menunjukkan susunan sekeping gambar di atas kad yang masing-masing berbentuk segi empat sama.

*Diagram 18 shows the arrangement of a picture on the cards which are each square shaped.*



Diberi jarak,  $J$ , kawasan yang tidak ditutupi gambar berubah secara songsang dengan punca kuasa dua luas,  $L$ , sekeping gambar. Jika luas sekeping gambar ialah  $196 \text{ cm}^2$ , Nasreen ingin menyusun gambar lain di tengah-tengah kad. Hitung luas gambar itu, dalam  $\text{cm}^2$ , jika jarak kedua-dua belah kawasan yang tidak ditutupi gambar adalah  $2 \text{ cm}$ .

*Given a distance,  $J$ , the area not covered by the picture varies inversely with the square root of the area,  $L$ , of a picture. If the area of a picture is  $196 \text{ cm}^2$ , then the distance of the area not covered by the picture is  $6 \text{ cm}$ . Nasreen wants to arrange another picture in the middle of the card. Calculate the area of the image, in  $\text{cm}^2$ , if the distance both side that not covered by the image are  $2 \text{ cm}$ .*

- A 294
- B 441
- C 588
- D 1764

### F5 2.2.7 MATRIKS

**Trial 2023, JUJ Pahang, Q30, Ans: A**

**257** Diberi / Given

$$\begin{pmatrix} 3 & x \\ 2y - 7 & 8 \end{pmatrix} + \begin{pmatrix} 2 & 9 \\ -1 & 0 \end{pmatrix} = \begin{pmatrix} 5 & 4 \\ -12 & 8 \end{pmatrix}$$

Cari nilai  $x$  dan  $y$ .

*Find the value of  $x$  and  $y$ .*

- A  $x = -5, y = -2$
- B  $x = -5, y = 2$
- C  $x = 5, y = -2$
- D  $x = 5, y = 2$

**Trial 2023, SMKA/SABK (SET1), Q40, Ans: C**

**258** Diberi / Given

$$\begin{pmatrix} 13 & 0 \\ 6 & -5 \end{pmatrix} - 2M = 3 \begin{pmatrix} 1 & -\frac{2}{3} \\ 2 & -3 \end{pmatrix}$$

Cari matriks  $M$ .

*Find matrix  $M$ .*

- A  $\begin{pmatrix} 5 & -1 \\ 0 & -2 \end{pmatrix}$   
 B  $\begin{pmatrix} -5 & -1 \\ 0 & -7 \end{pmatrix}$   
 C  $\begin{pmatrix} 5 & 1 \\ 0 & 2 \end{pmatrix}$   
 D  $\begin{pmatrix} 8 & -1 \\ 6 & -7 \end{pmatrix}$

Trial 2023, SBP, Q33, Ans: B

259 Diberi bahawa matriks  $M = \frac{1}{2} \begin{bmatrix} 12 & p \\ -10 & 4 \end{bmatrix}$

dan matriks  $N = \begin{bmatrix} 6 & 3 \\ p+q & 2 \end{bmatrix}$ .

Jika  $M = N$ , cari nilai  $q$ .

*It is given that matrix  $M = \frac{1}{2} \begin{bmatrix} 12 & p \\ -10 & 4 \end{bmatrix}$*

*and matrix  $N = \begin{bmatrix} 6 & 3 \\ p+q & 2 \end{bmatrix}$ .*

*If  $M = N$ , find the value of  $q$ .*

- A -8  
 B -11  
 C -13  
 D -16

Trial 2023, P.GUDANG (SET 1), Q20, Ans: B

260 Diberi bahawa matriks  $P = \begin{bmatrix} 5 & x+y \\ 4-x & -2 \end{bmatrix}$

dan matriks  $Q = \begin{bmatrix} 5 & 8 \\ x & -2 \end{bmatrix}$ .

Jika  $P = Q$ , cari nilai  $x$  dan  $y$ .

*It is given that matrix  $P = \begin{bmatrix} 5 & x+y \\ 4-x & -2 \end{bmatrix}$*

*and matrix  $Q = \begin{bmatrix} 5 & 8 \\ x & -2 \end{bmatrix}$ .*

*If  $P = Q$ , find the value of  $x$  and  $y$*

- A  $x = -2, y = -6$   
 B  $x = 2, y = 6$   
 C  $x = 2, y = -6$   
 D  $x = -2, y = 10$

Trial 2023, PERLIS Q37, Ans: A

261 Diberi  $P = \begin{pmatrix} 1 & -4 \\ -1 & 2 \end{pmatrix}$  dan  $Q = \begin{pmatrix} 1 & 2x \\ -1 & 2 \end{pmatrix}$ .

Jika  $P = Q$ , hitung nilai  $x$ .

*Given  $P = \begin{pmatrix} 1 & -4 \\ -1 & 2 \end{pmatrix}$  and  $Q = \begin{pmatrix} 1 & 2x \\ -1 & 2 \end{pmatrix}$ .*

*If  $P = Q$ , calculate the value of  $x$ .*

- A -2  
 B  $-\frac{1}{2}$   
 C  $\frac{1}{2}$   
 D 2

Trial 2023, SABK/SMKA (SET 2), Q39, Ans: D

262  $\frac{1}{4} \begin{pmatrix} 8 & -4 \\ -12 & 16 \end{pmatrix} - \begin{pmatrix} 2 & -2 \\ -4 & 1 \end{pmatrix} + \begin{pmatrix} -1 & 2 \\ -3 & -7 \end{pmatrix} =$

- A  $\begin{pmatrix} -1 & 3 \\ -2 & 4 \end{pmatrix}$   
 B  $\begin{pmatrix} -1 & 3 \\ 2 & -4 \end{pmatrix}$   
 C  $\begin{pmatrix} -1 & 0 \\ -2 & -4 \end{pmatrix}$   
 D  $\begin{pmatrix} -1 & 3 \\ -2 & -4 \end{pmatrix}$

Trial 2023, SABK/SMKA (SET 2), Q40, Ans: C

263 Diberi bahawa

$$\begin{pmatrix} 3 \\ x \end{pmatrix} (y - 13) = \begin{pmatrix} 12 & -39 \\ -20 & 65 \end{pmatrix},$$

cari nilai  $x$  dan  $y$ .

$$\text{Given that } \begin{pmatrix} 3 \\ x \end{pmatrix} (y - 13) = \begin{pmatrix} 12 & -39 \\ -20 & 65 \end{pmatrix},$$

find the value of  $x$  and  $y$ .

- A  $x = 4, y = -5$   
 B  $x = 4, y = \frac{1}{4}$   
 C  $x = -5, y = 4$   
 D  $x = -5, y = \frac{1}{4}$

Trial 2023, P.GUDANG (SET 1), Q21, Ans: A

264 Diberi  $[2x \quad -8] \begin{bmatrix} -2 & -3 \\ 2 & 1 \end{bmatrix} = [8 \quad y + 20]$ .

Hitung nilai  $x$  dan nilai  $y$ .

$$\text{Given } [2x \quad -8] \begin{bmatrix} -2 & -3 \\ 2 & 1 \end{bmatrix} = [8 \quad y + 20]$$

Find the value of  $x$  and  $y$

- A  $x = -6, y = 8$   
 B  $x = 6, y = 8$   
 C  $x = 3, y = 28$   
 D  $x = 20, y = 8$

Trial 2023, SBP, Q34, Ans: A

265 Diberi  $\begin{pmatrix} 1 & g \\ h & -3 \end{pmatrix} \begin{pmatrix} 4 \\ -7 \end{pmatrix} = \begin{pmatrix} -31 \\ 29 \end{pmatrix}$ , hitung nilai  $g$  dan nilai  $h$ .

*Given  $\begin{pmatrix} 1 & g \\ h & -3 \end{pmatrix} \begin{pmatrix} 4 \\ -7 \end{pmatrix} = \begin{pmatrix} -31 \\ 29 \end{pmatrix}$ , calculate the value of  $g$  and of  $h$ .*

- A  $g = 5, h = 2$   
 B  $g = 5, h = 8$   
 C  $g = -8, h = 8$   
 D  $g = 8, h = 8$

Trial 2023, PERLIS Q28, Ans: D

266 Diberi  $(7 \ 3) \begin{pmatrix} 1 \\ 2 \end{pmatrix} = P$ . Cari matriks  $P$ .

Given  $(7 \ 3) \begin{pmatrix} 1 \\ 2 \end{pmatrix} = P$ . Find the matrix  $P$

A  $\begin{pmatrix} 7 & 3 \\ 14 & 6 \end{pmatrix}$

B  $(7 \ 6)$

C  $\begin{pmatrix} 7 \\ 6 \end{pmatrix}$

D  $(13)$

Trial 2023, UD3 Melaka, Q4, Ans: B

267  $\begin{bmatrix} -3 & 8 \\ 2 & 4 \end{bmatrix} - \begin{bmatrix} -4 & 1 \\ 5 & -2 \end{bmatrix} + \begin{bmatrix} 4 & -1 \\ -2 & -3 \end{bmatrix} =$

A  $\begin{bmatrix} 5 & 6 \\ 5 & -3 \end{bmatrix}$

B  $\begin{bmatrix} 5 & 6 \\ -5 & 3 \end{bmatrix}$

C  $\begin{bmatrix} -5 & -6 \\ -5 & 3 \end{bmatrix}$

D  $\begin{bmatrix} -5 & 6 \\ 5 & -3 \end{bmatrix}$

Trial 2023, JOHOR (SET 2), Q39, Ans: B

268 Diberi bahawa  $(5t \ 2t) \begin{pmatrix} 6 \\ -6 \end{pmatrix} = (8)$ . Hitung nilai  $t$ .

Given  $(5t \ 2t) \begin{pmatrix} 6 \\ -6 \end{pmatrix} = (8)$ . Calculate the value of  $t$ .

A  $\frac{1}{2}$

B  $\frac{4}{9}$

C  $\frac{1}{4}$

D  $\frac{4}{21}$

Trial 2023, JOHOR (SET 2), Q38, Ans: A

269 Antara matriks berikut, yang manakah tidak mempunyai songsangan?

Which of the following matrices does not have an inverse?

A  $\begin{pmatrix} -3 & -9 \\ 1 & 3 \end{pmatrix}$

B  $\begin{pmatrix} -3 & 9 \\ -1 & -3 \end{pmatrix}$

C  $\begin{pmatrix} -3 & -9 \\ 1 & -3 \end{pmatrix}$

D  $\begin{pmatrix} -3 & -9 \\ -1 & 3 \end{pmatrix}$

Trial 2023, JUJ Pahang, Q32, Ans: B

270 Diberi bahawa/ It is given that

$$(5 \ 2) \begin{pmatrix} 3 & 1 \\ 6 & -7 \end{pmatrix} = \frac{x}{4} (36 \ -12)$$

Hitung nilai  $x$ .

Calculate the value of  $x$ .

A 2

B 3

C 5

D 6

Trial 2023, UD3 Melaka, Q3, Ans: D

Antara berikut yang manakah matriks sama

271 bagi  $\begin{bmatrix} 11 \\ -6.5 \end{bmatrix}$ ?

Which of the following is the equal matrix for

$\begin{bmatrix} 11 \\ -6.5 \end{bmatrix}$ ?

A  $[11 \ -6.5]$

B  $\begin{bmatrix} -11 \\ 6.5 \end{bmatrix}$

C  $\begin{bmatrix} 11 & -13 \\ & 2 \end{bmatrix}$

D  $\begin{bmatrix} 11 \\ -13 \\ & 2 \end{bmatrix}$

Trial 2023, SMKA/SABK (SET1), Q39, Ans: A

272 Diberi bahawa  $M$  ialah matriks  $2 \times 2$  dan

It is given that  $M$  is  $2 \times 2$  matrix and

$$M^{-1} = \frac{1}{-1(3) - 2(-6)} \begin{pmatrix} p & -2 \\ q & -1 \end{pmatrix}$$

Cari nilai  $p$  dan nilai  $q$ .

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

A  $p = 3, q = 6$

B  $p = -3, q = 6$

C  $p = 3, q = -6$

D  $p = -3, q = -6$

### F5, 3.1 INSURANS

Trial 2023, PERLIS Q3, Ans: B

273 Antara berikut, yang manakah bukan insurans am?

Which of the following is not general insurance?

A Insurans kemalangan

*Accident insurance*

- B** Insurans hayat  
*Life insurance*
- C** Insurans perubatan  
*Medical insurance*
- D** Insurans perjalanan  
*Travel insurance*

**Trial 2023, SABK/SMKA (SET 2), Q33, Ans: A**

- 274** Jason ingin membeli insurans hayat dengan nilai muka sebanyak RM150 000. Kadar premium tahunan bagi setiap RM1 000 nilai muka yang ditawarkan kepada Jason ialah RM2.12. Berapakah premium bulanan yang perlu dibayar oleh Jason?

*Jason wants to buy a life insurance with a face value of RM150 000. The annual premium rate per RM1 000 of face value offered to Jason is RM2.12. What is the monthly premium needs to be paid by Jason?*

- A** RM26.50
- B** RM73.58
- C** RM150.00
- D** RM318.00

**Trial 2023, JUJ Pahang, Q36, Ans: D**

- 275** Encik Halim telah membeli satu polisi insurans kebakaran untuk rumahnya yang mempunyai peruntukan ko-insurans untuk menginsuranskan 75% daripada nilai boleh insurans rumahnya.

*Encik Halim has purchased a fire insurance policy for his house which has a co-insurance provision to insure 75% of the house's insurable value.*

Hitung nilai boleh insurans rumah Encik Halim jika jumlah insurans yang harus dibeli olehnya ialah RM0.9 juta

*Calculate the insurable value of Encik Halim's house if the amount of insurance required is RM0.9 million.*

- A** RM120 000
- B** RM657 000
- C** RM675 000
- D** RM1 200 000

**Trial 2023, P.GUDANG (SET 1), Q15, Ans: A**

- 276** Kamaludin membeli polisi insurans pihak ketiga untuk motornya. Antara yang berikut, perlindungan manakah yang akan dilindungi oleh insurans yang diambil oleh Kamaludin?

*Kamaludin bought a third party insurance policy for his motorbike. Which of the following coverage will be covered by insurance taken by Kamaludin?*

- I** Liabiliti kepada pihak ketiga akibat kecederaan dan kematian.  
*Liability to third parties as a result of injury and death.*
- II** Kerugian terhadap harta benda yang dialami pihak ketiga  
*Loss of property suffered by third parties*
- III** Kerugian terhadap kenderaan sendiri akibat kebakaran yang tidak disengajakan atau kecurian  
*Loss of own vehicle due to accidental fire or theft.*
- IV** Kerugian dan kerosakan terhadap kenderaan sendiri akibat kemalangan  
*Loss and damage to own vehicle due to accident.*

- A** I, II
- B** I, III
- C** I, II, III
- D** I, III, IV

**Trial 2023, P.GUDANG (SET 1), Q16, Ans: D**

- 277** Puan Siti mempunyai insurans perubatan utama dengan peruntukan deduktibel sebanyak RM600 dan fasal penyertaan peratusan ko-insurans 75/25 dalam polisinya. Hitung bayaran kos yang ditanggung oleh Puan Siti sendiri jika kos perubatan yang dilindungi polisinya berjumlah RM25 000.

*Puan Siti has a major medical insurance with a deductible allocation of RM600 and a 75/25 co-insurance percentage participation clause in her policy. Calculate the cost of expenses incurred by Puan Siti herself if the medical costs covered by her policy amount to RM25 000*

- A** RM5 650
- B** RM6 250
- C** RM6 580
- D** RM6 700

**Trial 2023, JOHOR (SET 2), Q33, Ans: C**

- 278** Puan Zila mempunyai polisi insurans perubatan dengan deduktibel sebanyak RM 300 dan fasal penyertaan peratusan ko-insurans

80/20 dalam polisinya. Hitung bayaran kos yang ditanggung oleh Puan Zila jika kos perubatan yang ditanggung oleh syarikat insurans ialah RM 6 960

*Puan Zila has medical insurance policy with a deductible provision of RM 300 and an 80/20 co-insurance percentage participation clause. Calculate the cost borne by Puan Zila if the medical cost covered by the insurance company is RM6 960.*

- A RM 1 440
- B RM 1 740
- C RM 2 040
- D RM 2 090

**Trial 2023, UD3 Melaka, Q39, Ans: B**

**279** Jadual 1 menunjukkan kadar premium tahunan per RM1 000 nilai muka insurans hayat boleh baharu yang ditawarkan oleh Syarikat Bitara.

*Table 1 shows the annual premium rate per RM1 000 face value of renewable life insurance offered by Syarikat Bitara.*

Umur Age	Lelaki / Male (RM)		Perempuan / Female (RM)	
	Bukan perokok Non- smoker	Perokok Smoker	Bukan perokok Non- smoker	Perokok Smoker
27	2.13	2.72	1.18	1.40
28	2.13	2.73	1.19	1.42
29	2.13	2.75	1.21	1.44
30	2.13	2.79	1.23	1.46

Dengan nilai muka sebanyak RM140 000. Hitung premium tahunan bagi seorang lelaki berumur 28 tahun yang tidak merokok.

*Based on the face value of RM140 000. Calculate the annual premium for a 28-year-old man who does not smoke.*

- A RM166.60
- B RM298.20
- C RM398.20
- D RM382.20

**Trial 2023, UD3 Melaka, Q34, Ans: C**

**280** Puan Syuhada telah menjalani pembedahan mata dengan kos perubatan sebanyak RM10 000. Polisi insurans perubatan yang diambil olehnya mengenakan deduktibel

sebanyak RM1 000 dan ko-insurans 90/10. Berapakah jumlah wang yang perlu ditanggung oleh Puan Syuhada bagi kos perubatannya?

*Puan Syuhada has undergone eye surgery with a medical cost of RM10 000. The medical insurance policy taken by her has a deductible of RM1 000 and co-insurance 90/10. How much money does Puan Syuhada need to borne for her medical cost?*

- A RM900
- B RM1 100
- C RM1 900
- D RM8 100

**Trial 2023, SMKA/SABK (SET1) , Q22, Ans: A**

**281** Faizal memiliki sebuah kereta Honda Accord 2.0 di Putrajaya. Maklumat bagi kereta itu adalah seperti berikut :

*Faizal owns a Honda Accord 2.0 car in Putrajaya. The information for the car is as follows:*

Jumlah yang ingin diinsuranskan/ Sum insured :	RM103 000
NCD :	25 %

Kapasiti enjin tidak melebihi Engine capacity not exceeding (cc)	Semenanjung Malaysia Peninsular Malaysia		Sabah dan Sarawak Sabah and Sarawak	
1650	305.50	135.00	220.00	75.60
2200	339.10	151.20	243.90	85.20
3050	372.60	167.40	266.50	93.60

Jika premium asas bagi polisi komprehensif ialah RM2 991.10, hitung premium kasar bagi polisi pihak ketiga.

*If the basic premium for the comprehensive policy is RM2 991.10, calculate the gross premium for the third party policy.*

- A RM113.40
- B RM151.20
- C RM189.00
- D RM339.10

**F5, 3.1 INSURANS & F5, 4.1 PERCUKAIAN**

**Trial 2023, JUJ Pahang, Q25, Ans: C**

- 282** Jadual 3 menunjukkan kadar cukai jalan bagi sebuah kereta.

*Table 3 shows the road tax rate for a car*

Kapasiti enjin <i>Engine capacity</i>	Kadar asas <i>Basic rate</i>	Kadar progresif <i>Progressive rate</i>
1950 cc	RM280.00	+ RM0.50 setiap cc melebihi 1800 cc + RM0.50 for each cc exceeding 1800 cc

Jika Kamarul mempunyai kereta dengan kapasiti enjin 1950 cc, hitung cukai jalan yang perlu dibayarnya.

*If Kamarul has a car with an engine capacity of 1950 cc, calculate the road he needs to pay.*

- A RM75  
B RM280  
C RM355  
D RM975

**Trial 2023, P.GUDANG (SET 1), Q17, Ans: A**

- 283** Jadual 3 menunjukkan perkara-perkara pengecualian dan pelepasan cukai Puan Sheryl.

*Table 3 shows the tax exemption and tax relief of Puan Sheryl.*

Individu/ <i>individual</i>	RM9 000
Insurans perubatan (had RM3 000) <i>Medical insurance (Limit RM3 000)</i>	RM1 700
Insurans Hayat dan KWSP (Had RM7 000) <i>Life insurance and EPF (limited to RM7 000)</i>	RM7 050

Diberi bahawa pendapatan tahunan Puan Sheryl pada tahun 2022 ialah RM70 000. Beliau telah mendermakan RM350 kepada sebuah badan kebajikan yang diluluskan oleh kerajaan. Berapakah pendapatan bercukai Puan Sheryl?

*Given that Mrs Sheryl's annual income in 2022 is RM70 000. She has donated RM350 to a charity approved by the government. What is Mrs Sheryl's taxable income?*

- A RM51 950  
B RM51 900

- C RM52 250  
D RM52 300

**Trial 2023, JOHOR (SET 2), Q34, Ans: A**

- 284** Pendapatan Encik Amri ialah sebanyak RM65 000 termasuk elaun-elaun berjumlah RM 3 260 yang dikecualikan cukai. Pada tahun 2022, dia telah membayar zakat berjumlah RM345 untuk tahun tersebut. Jumlah pelepasan cukai baginya ialah RM 13 500. Jadual 3 menunjukkan sebahagian daripada kadar cukai pendapatan individu bagi tahun 2022. Hitung cukai pendapatan yang perlu dibayar oleh Encik Amri.

*Mr Amri has an income of RM 65 000 including total allowances of RM 3 260 which are tax-exempted. In 2022, he had pay zakat with a total of RM 345 for that year. His total tax relief is RM 13 500. Table 3 shows a part of the individual income tax rates for year 2022. Calculate the income tax payable by Mr Amri.*

Banjaran Pendapatan Bercukai <i>Chargeable Income (RM)</i>	Pengiraan <i>Calculation (RM)</i>	Kadar Rate (%)	Cukai Tax (RM)
35 001 – 50 000	35 000 pertama <i>On the first 35 000</i> 15 000 berikutnya <i>Next 15 000</i>	8	600 1 200
50 001 – 70 000	50 000 pertama <i>On the first 50 000</i> 20 000 berikutnya <i>Next 20 000</i>	14	1 800 2 800

- A RM 1 314.20  
B RM 1 631.60  
C RM 2 121.20  
D RM 2 466.60

**Trial 2023, UD3 Melaka, Q27, Ans: B**

- 285** Salina memiliki sebuah rumah di Bukit Baru. Dia menerima bil cukai pintu pada kadar 9.5%. Diberi bahawa nilai tahunan rumahnya ialah RM5 000. Hitung cukai pintu yang perlu dibayar oleh Salina untuk setiap setengah tahun.

*Salina owns a residential house in Bukit Baru. She receives property assessment tax bill at a rate of 9.5%. It is given that the annual value of her house*



is RM5 000. Calculate the property assessment tax payable by Salina for each half-year

- A RM225.00
- B RM237.50
- C RM450.00
- D RM475.00

**Trial 2023, SABK/SMKA (SET 2), Q30, Ans: C**

**286** Pendapatan bercukai Nazim pada tahun 2020 ialah RM48 850. Beliau telah membayar zakat berjumlah RM200 pada tahun tersebut. Jadual 4 menunjukkan kadar cukai pendapatan individu untuk pendapatan bercukai antara RM35 001 dengan RM50 000.

Nazim chargeable income in 2020 was RM48 850. He paid zakat amounting to RM200 in that year. Table 3 shows individual income tax rate for chargeable income between RM35 001 and RM50 000.

Banjaran pendapatan bercukai Chargeable income (RM)	Pengiraan Calculations (RM)	Kadar Rate (%)	Cukai Tax (RM)
35 001 – 50 000	35 000 pertama On the first 35 000 15 000 berikutnya Next 15 000	8	600 1 200

Hitung cukai pendapatan yang perlu dibayar oleh Nazim.

Calculate the income tax to be paid by Nazim.

- A RM1 492
- B RM1 692
- C RM1 508
- D RM1 708

**Trial 2023, UD3 Melaka, Q28, Ans: A**

**287** Gaji bulanan Hazim ialah RM8 545 termasuk elaun. Pada tahun 2022, dia telah mendapat bonus sebanyak sebulan gaji dan elaun-elaun berjumlah RM15 000 yang dikecualikan cukai. Dia juga menderma kepada organisasi yang diluluskan oleh kerajaan berjumlah RM1 000 dan membayar zakat secara bulanan sebanyak RM100. Diberi jumlah pelepasan yang dibenarkan ialah RM20 500. Hitung pendapatan bercukai Hazim.

Hazim's monthly salary is RM8 545 including allowances. In year 2022, he has received a bonus of one month's salary and allowances amounting to RM15 000 which are exempt from tax. He also donated to an organization approved by the government amounting to RM1 000 and pays monthly zakat of RM100. Given that the total tax relief was RM20 500.

Calculate Hazim's chargeable income

- A RM73 335
- B RM74 585
- C RM77 852
- D RM89 585

**Trial 2023, PERLIS Q40, Ans: D**

**288** Pada tahun 2022 Encik Fattah telah membuat potongan cukai bulanan (PCB) sebanyak RM250. Selepas membuat taksiran cukai pendapatan, Encik Fattah perlu membayar tambahan cukai kepada LHDN. Hitung cukai pendapatan yang mungkin dikenakan kepada Encik Fattah?

In 2022 Encik Fattah made a monthly tax deduction (PCB) of RM250. After making the income tax assessment, Mr. Fattah has to pay additional tax to the IRB. Calculate the income tax that may be charged to Mr. Fattah?

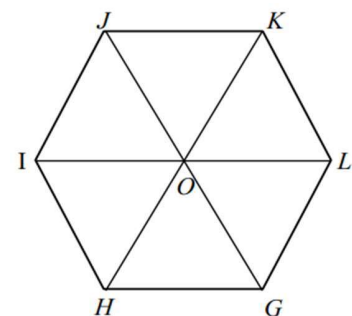
- A RM2 000
- B RM2 500
- C RM3 000
- D RM3 500

### F5 5.3.1 GABUNGAN PENJELMAAN

**Trial 2023, SMKA/SABK (SET1), Q20, Ans: D**

**289** Rajah 7 menunjukkan sebuah heksagon sekata yang dibahagi sama rata kepada enam bahagian.

Diagram 7 shows a hexagon is equally divided into six section.



Antara berikut yang manakah bukan kongruen dengan sisi empat OJKL?

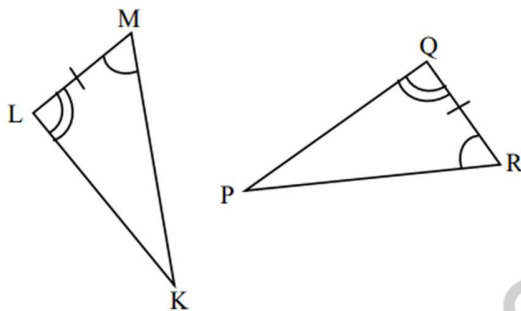
Which of the following is not congruent with the quadrilateral OJKL?

- A OHIJ
- B GHIO
- C HGLO
- D GHKL

Trial 2023, JUJ Pahang, Q23, Ans: B

290 Rajah 10 menunjukkan dua buah segi tiga kongruen,  $KLM$  dan  $PQR$ .

Diagram 10 shows two congruent triangles,  $KLM$  and  $PQR$ .



Nyatakan sifat kekongruenan segi tiga yang ditunjukkan.

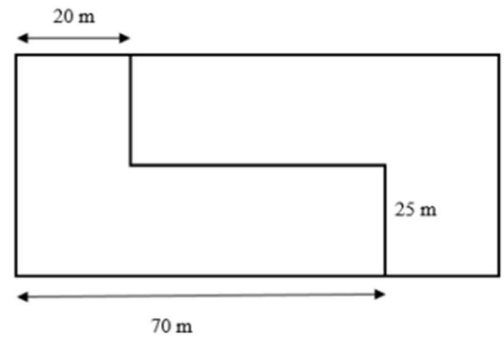
State the properties of triangles congruency shown.

- A Sisi-Sisi-Sisi/ Side-Side-Side
- B Sudut-Sisi-Sudut/ Angle-Side-Angle
- C Sisi-Sudut-Sisi/ Side-Angle-Side
- D Sudut-Sudut-Sisi/ Angle-Angle-Side

Trial 2023, P.GUDANG (SET 1), Q23, Ans: C

291 Rajah 7 menunjukkan kawasan tanah yang berbentuk segiempat tepat yang dimiliki oleh Firash. Dia membahagikan kawasan tersebut kepada dua bahagian yang kongruen untuk membina taman botani.

Diagram 7 shows the rectangular land area owned by Firash. He divided the area into two congruent parts to build a botanical garden.



Hitung perimeter bagi setiap kawasan tersebut.

Calculate the perimeter of each area

- A 140
- B 235
- C 240
- D 280

Trial 2023, UD3 Melaka, Q16, Ans: A

292

Luas objek Area of object	Luas imej Area of image	Faktor skala Scale factor
18	72	$k$

Cari nilai yang mungkin bagi  $k$ .

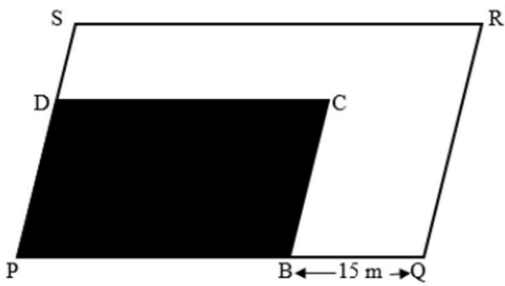
Find the possible value of  $k$ .

- A 2
- B 4
- C  $\frac{1}{2}$
- D  $\frac{1}{4}$

Trial 2023, P.GUDANG (SET 1), Q24, Ans: B

293 Rajah 8 menunjukkan kawasan kolam renang dewasa  $PQRS$  dan kolam renang kanak-kanak  $PBCD$  yang berbentuk segiempat selari.  $PQRS$  ialah imej bagi  $PBCD$  dengan pembesaran pusat di  $P$ . diberi luas kolam renang dewasa ialah  $2025 \text{ m}^2$  dan luas kawasan kolam renang kanak-kanak ialah  $900 \text{ m}^2$ .

Diagram 8 shows the area of the adult swimming pool  $PQRS$  and the children's swimming pool  $PBCD$  which are parallelograms.  $PQRS$  is the image of a  $PBCD$  with centre of enlargement at  $P$ . given the area of the adult swimming pool is  $2025 \text{ m}^2$  and the area of the children's swimming pool is  $900 \text{ m}^2$ .



Hitung panjang, dalam m, kolam renang kanak-kanak, PB.

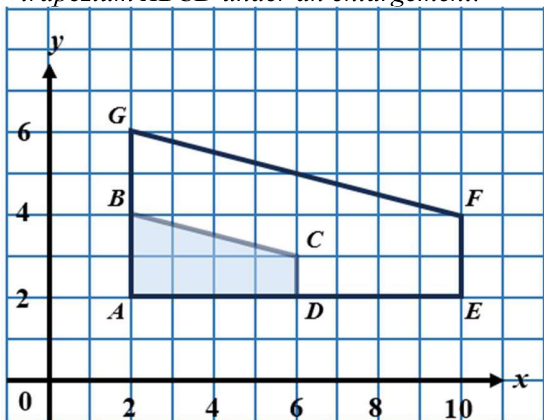
Calculate the length, in m, of the children's pool, PB.

- A 25
- B 30
- C 45
- D 60

Trial 2023, JOHOR (SET 2), Q27, Ans: A

294 Rajah 8 menunjukkan, trapezium AEFG ialah imej bagi trapezium ABCD dibawah suatu pembesaran.

Diagram 8, trapezium AEFG is the image of trapezium ABCD under an enlargement.



Diberi bahawa luas trapezium AEFG ialah  $240 \text{ cm}^2$ . Berapakah luas kawasan berlorek?

Given that the area of trapezium AEFG is  $240 \text{ cm}^2$ . What is the area of the shaded region?

- A  $60 \text{ cm}^2$
- B  $120 \text{ cm}^2$
- C  $180 \text{ cm}^2$
- D  $220 \text{ cm}^2$

Trial 2023, SABK/SMKA (SET 2), Q10, Ans: A

295 Rajah 6 menunjukkan beberapa buah trapezium dilukis pada suatu satah Cartes. Diberi bahawa transformasi

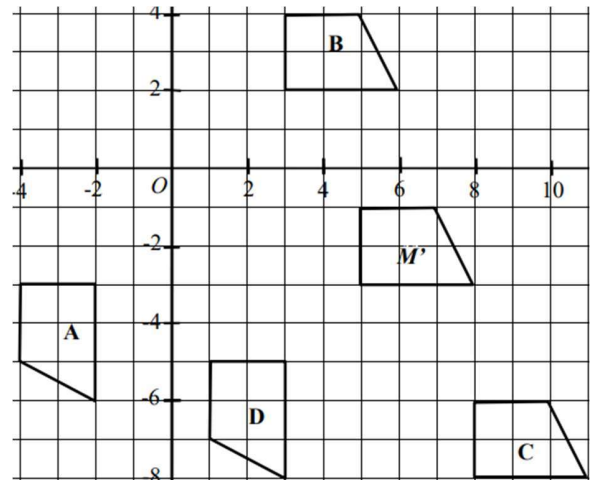
Diagram 6 shows several trapeziums drawn on a Cartesian plane. It is given that transformation

$$J = \text{translasi} \begin{pmatrix} 2 \\ -5 \end{pmatrix}$$

$$J = \text{translation} \begin{pmatrix} 2 \\ -5 \end{pmatrix}$$

K = pantulan pada garis  $y = -x$

K = reflection on line  $y = -x$



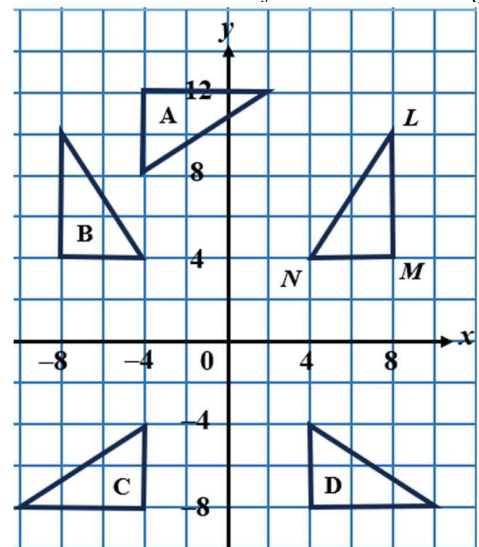
Antara trapezium A, B, C dan D, yang manakah objek bagi M' di bawah gabungan transformasi JK?

Which of the trapezium A, B, C and D, is the object M' under the combined transformation JK?

Trial 2023, JOHOR (SET 2), Q28, Ans: C

296 Dalam Rajah 9, transformasi P ialah satu pantulan pada paksi  $-y$  dan transformasi Q ialah satu putaran  $90^\circ$  lawan arah jam pada asalan

In the Diagram 9, transformation P is the reflection on the  $y$ -axis and the transformation Q is an anticlockwise rotation of  $90^\circ$  about the origin.



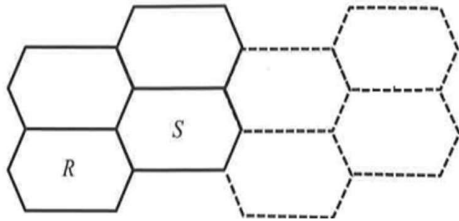
Antara segitiga A, B, C, dan D, yang manakah ialah imej bagi segi tiga LMN di bawah gabungan transformasi QP?

Which of the triangle A, B, C and D, is the image of LMN under the combined transformation QP?

Trial 2023, SBP , Q8, Ans: B

297 Rajah 5 menunjukkan suatu bentuk teselasi yang terdiri daripada heksagon yang dihasilkan dengan transformasi isometri.

Diagram 5 shows a tessellation consisting of hexagons which are produced by isometric transformation.



Apakah transformasi yang terlibat dalam menghasilkan bentuk S daripada bentuk R?  
What is the transformation involved to produce shape S from shape R?

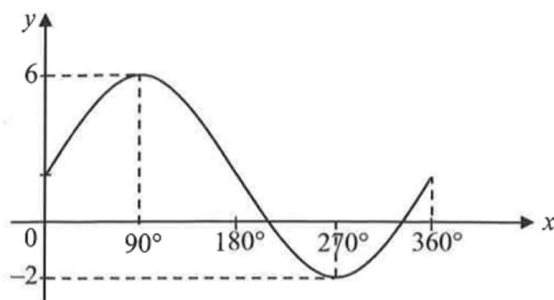
- A Pantulan/ Reflection
- B Translasi/ Translation
- C Putaran/ Rotation
- D Semua di atas/ All of above

**F5 6.2.1 GRAF FUNGSI SINUS, KOSINUS DAN TANGEN**

Trial 2023, SBP , Q36, Ans: A

298 Rajah 21 menunjukkan graf bagi suatu fungsi trigonometri.

Diagram 21 shows a graph of a trigonometric function.



Antara berikut, yang manakah mewakili graf di atas?

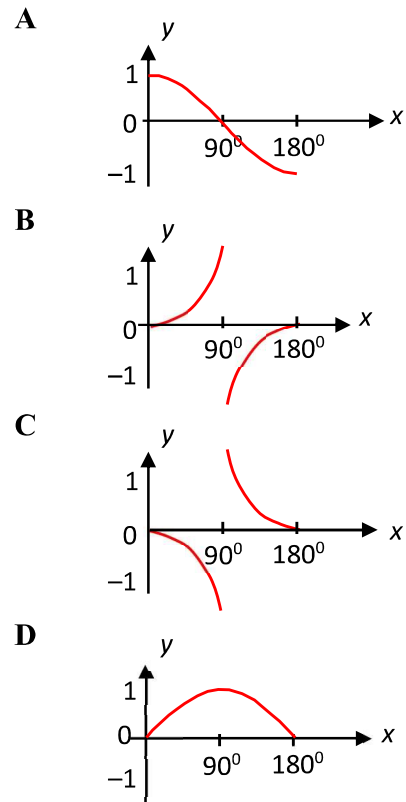
Which of the followings represents the graph above?

- A  $y = 4 \sin x + 2$
- B  $y = 4 \sin x + 4$
- C  $y = 6 \sin x + 2$
- D  $y = 6 \sin x + 4$

Trial 2023, JUJ Pahang, Q10, Ans: B

299 Graf yang manakah mewakili  $y = \tan x$  bagi  $0^\circ \leq x \leq 180^\circ$  ?

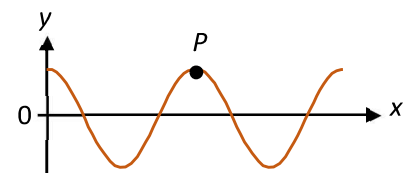
Which graph represents  $y = \tan x$  for  $0^\circ \leq x \leq 180^\circ$  ?



Trial 2023, JUJ Pahang, Q40, Ans: B

300 Rajah 17 menunjukkan sebahagian graf bagi fungsi  $y = 3 \cos 2x$  untuk  $x \geq 0^\circ$ .

Diagram 17 shows part of the graph of the function  $y = 3 \cos 2x$  for  $x \geq 0^\circ$ .



Cari koordinat titik P.

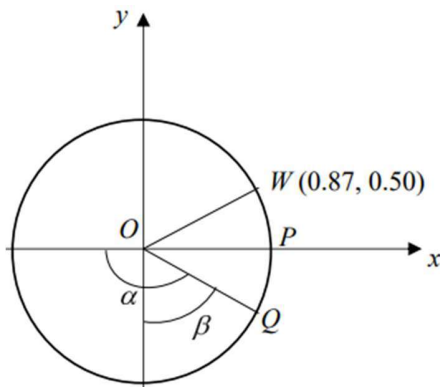
Find the coordinates of point P.

- A  $(180^\circ, 2)$
- B  $(180^\circ, 3)$
- C  $(360^\circ, 2)$
- D  $(360^\circ, 3)$

Trial 2023, SABK/SMKA (SET 2), Q12, Ans: B

301 Dalam Rajah 8, titik W terletak di atas lengkok suatu bulatan unit berpusat O. Lengkok minor WP dan PQ adalah sama panjang.

In the Diagram 8, point W lies on the arc of a circle with centre, O. The minor arcs WP and PQ have the same length.



Cari nilai  $\cos \alpha + \tan \beta$ .

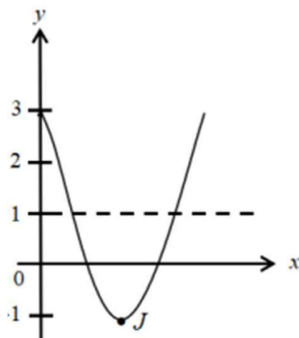
Find the value of  $\cos \alpha + \tan \beta$ .

- A 1.74
- B 0.87
- C -0.87
- D -0.50

Trial 2023, P.GUDANG (SET 1), Q26, Ans: D

302 Rajah 9 menunjukkan sebahagian daripada daripada graf  $y = 2 \cos x + 1$ .

Diagram 9 shows a part of the graph of  $y = 2 \cos x + 1$ .



Koordinat J ialah

Coordinate of J is

- A  $(45^\circ, -1)$
- B  $(90^\circ, -1)$
- C  $(135^\circ, -1)$
- D  $(180^\circ, -1)$

Trial 2023, UD3 Melaka, Q38, Ans: C

303 Diberi  $\tan x = -1.732$  dan  $0^\circ \leq x \leq 360^\circ$ .

Cari dua nilai yang mungkin bagi  $x$ .

Given  $\tan x = -1.732$  and  $0^\circ \leq x \leq 360^\circ$ .

Find two possible values of  $x$ .

- A  $60^\circ$  dan / and  $120^\circ$
- B  $60^\circ$  dan / and  $240^\circ$
- C  $120^\circ$  dan / and  $300^\circ$

- D  $240^\circ$  dan / and  $300^\circ$

Trial 2023, P.GUDANG (SET 1), Q25, Ans: A

304 Diberi  $\cos x = \frac{1}{2}$  dan  $180^\circ < x < 270^\circ$ , tentukan nilai  $\tan x$ .

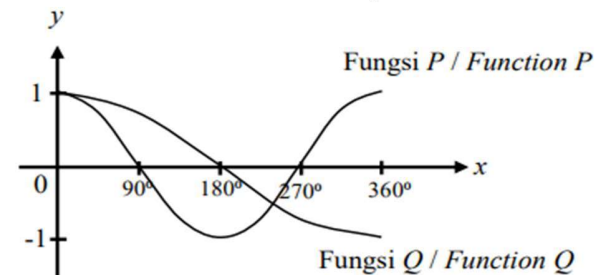
Given  $\cos x = \frac{1}{2}$  and  $180^\circ < x < 270^\circ$ , determine the value of  $\tan x$ .

- A  $\sqrt{3}$
- B  $-\sqrt{3}$
- C  $-\frac{1}{\sqrt{3}}$
- D  $\frac{\sqrt{3}}{2}$

Trial 2023, PERLIS Q12, Ans: C

305 Rajah 5 menunjukkan dua graf fungsi trigonometri yang dilukis di atas satah Cartes.

Diagram 5 shows two graphs of trigonometric function drawn on a Cartesian plane



Antara yang berikut, manakah yang mewakili fungsi P dan fungsi Q? Which of the following represent function P and function Q?

Antara yang berikut, manakah yang mewakili fungsi P dan fungsi Q? Which of the following represent function P and function Q?

Fungsi P Function P	Fungsi Q Function Q
A $y = \cos x$	$y = \cos 2x$
B $y = \cos 2x$	$y = \cos x$
C $y = \cos x$	$y = \cos \frac{1}{2}x$
D $y = \cos \frac{1}{2}x$	$y = \cos x$

F5 7.1 SUKATAN DATA TERKUMPUL

Trial 2023, SMKA/SABK (SET1), Q38, Ans: D

306 Jadual 3 menunjukkan jisim bagi 20 orang murid.

Table 3 shows the mass of 20 pupils

<b>Jisim (kg)</b> <b>Mass (kg)</b>	41 – 45	46 – 50	51 – 55	56 – 60	61 – 65	66 – 70
<b>Bilangan murid</b> <b>Number of pupils</b>	1	3	5	7	2	2

Diberi min jisim ialah 56.0 kg, hitung varians bagi data tersebut.

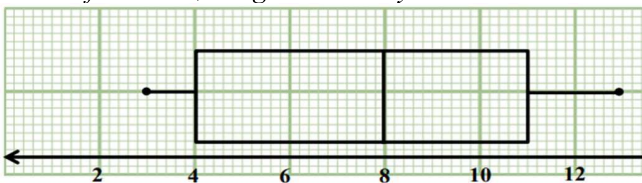
Given the mass mean is 56.0 kg, calculate the variance of the following data.

- A 38  
B 39  
C 40  
D 41

Trial 2023, PERLIS Q18, Ans: A

307 Rajah 9 menunjukkan satu plot kotak yang mewakili jisim sekumpulan kanak – kanak, dalam kg di sebuah taman asuhan

Diagram 9 shows a box plot represent the mass of children, in kg in a nursery school.



Cari julat antara kuartil bagi data di atas.

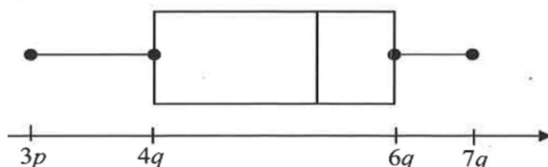
Find the interquartile range for the above data.

- A 7  
B 8  
C 10  
D 13

Trial 2023, SBP, Q24, Ans: C

308 Rajah 15 menunjukkan plot kotak yang mewakili suatu set data.

Diagram 15 shows a box plot that represents a set of data.



Diberi julat dan julat antara kuartil masing-masing ialah 225 dan 90. Hitung nilai  $p$ .

Given the range and the interquartile range are 225 and 90 respectively. Calculate the value of  $p$ .

- A -30  
B -15  
C 30

D 72

Trial 2023, UD3 Melaka, Q19, Ans: C

309 Bagi suatu taburan data terkumpul, median ialah 63 dan beza antara median dan kuartil pertama ialah 4. Jika julat antara kuartil ialah 8, cari kuartil pertama dan kuartil ketiga.

For a cumulative data distribution, the median is 63 and the difference between the median and the first quartile is 4. If the interquartile range is 8, find the first quartile and the third quartile.

	<b>Kuartil pertama</b> <i>First quartile</i>	<b>Kuartil ketiga</b> <i>Third quartile</i>
A	58	66
B	58	67
C	59	67
D	59	68

Trial 2023, SMKA/SABK (SET1), Q33, Ans: A

310 Jadual 2 menunjukkan suhu, dalam °C, yang dicatatkan dalam suatu bulan tertentu.

Table 2 shows the temperature, in °C, recorded in a particular month.

<b>Suhu (°C)</b> <i>Temperature (°C)</i>	<b>Kekerapan</b> <i>Frequency</i>
21 – 25	7
26 – 30	9
31 – 35	$x + 2$
36 – 40	$x$

Diberi min suhu ialah 30.17°C.

Cari nilai bagi  $x$ .

Given the mean of temperature is 30.17°C.

Find the value of  $x$ .

- A 6  
B 7  
C 8  
D 9

Trial 2023, P.GUDANG (SET 1), Q29, Ans: A

311 Rajah 10 menunjukkan suatu plot kotak yang tidak lengkap.

Diagram 10 shows an incomplete box plot



Julat antara kuartil dan julat bagi plot kotak tersebut masing-masing ialah 47 dan 76.

Tentukan nilai  $P_1$  dan  $P_2$ .

The interquartile range and range of the box plot are 47 and 76 respectively.

Determine the value of  $P_1$  and  $P_2$ .

	$P_1$	$P_2$
A	7	76
B	7	18
C	26	76
D	26	18

Trial 2023, P.GUDANG (SET 1), Q10, Ans: D

312 Jadual 2 ialah jadual kekerapan yang menunjukkan masa yang diambil, dalam minit, oleh 50 orang atlit dalam pertandingan merentas desa.

Table 2 is a frequency table which shows the time taken, in minutes, by 50 athletes in a cross-country competition.

Masa (minit) Time (minutes)	Kekerapan Frequency
20 – 22	6
23 – 25	$P$
26 – 28	12
29 – 31	$Q$
32 – 34	8

Jika titik tengah bagi kelas mod ialah 30, nyatakan nilai yang mungkin bagi  $P$  dan  $Q$ .

If the midpoint of the modal class is 30, state the possible values of  $P$  and  $Q$ .

A  $P = 12, Q = 15$

B  $P = 13, Q = 11$

C  $P = 11, Q = 14$

D  $P = 11, Q = 13$

Trial 2023, SABK/SMKA (SET 2), Q23, Ans: A

313 Hashim telah membawa sebakul durian ke sebuah gerai untuk dijual. Jisim bagi setiap durian ditunjukkan dalam Jadual 3.

Hashim sent a basket of durians to a stall to sell. The mass of each durian is shown in the table 3.

Jisim (kg) Mass (kg)	Kekerapan Frequency	Kekerapan longgokan Cumulative Frequency
1.0 – 1.4	3	3
1.5 – 1.9	7	10
2.0 – 2.4	$P$	25
2.5 – 2.9	10	$Q$

3.0 – 3.4	5	40
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Hitung  $Q - P$ .

Calculate  $Q - P$ .

A 20

B 25

C 30

D 35

Trial 2023, JOHOR (SET 2), Q24, Ans: A

314 Jadual 1 menunjukkan jadual kekerapan longgokan mata yang diperoleh sekumpulan pelajar dalam suatu ujian.

Table 1 shows a cumulative frequency table of points obtained by a group of students in a test.

Mata Points	Kekerapan longgokan Cumulative frequency	Kekerapan Frequency
10 – 19	3	3
20 – 19	10	7
30 – 19	25	$P$
40 – 19	$Q$	10
50 – 19	40	5

Hitung  $Q - P$ .

Calculate  $Q - P$

A 20

B 25

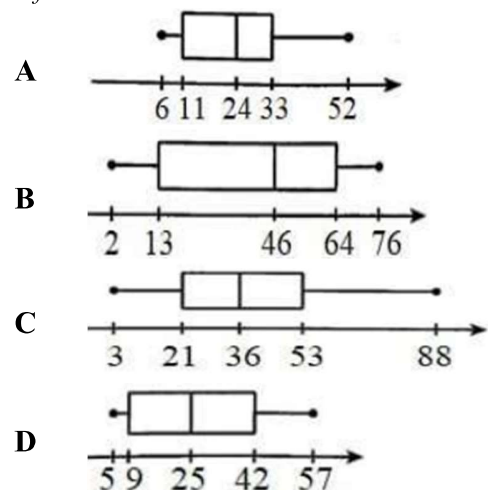
C 30

D 35

Trial 2023, UD3 Melaka, Q20, Ans: D

315 Dalam suatu set data, julat dan julat antara kuartil masing-masing ialah 52 dan 33. Antara plot kotak yang berikut, yang manakah mewakili maklumat diberi?

In a set of data, the range and the interquartile range are 52 and 33 respectively. Which of the following box plot represents the given information?

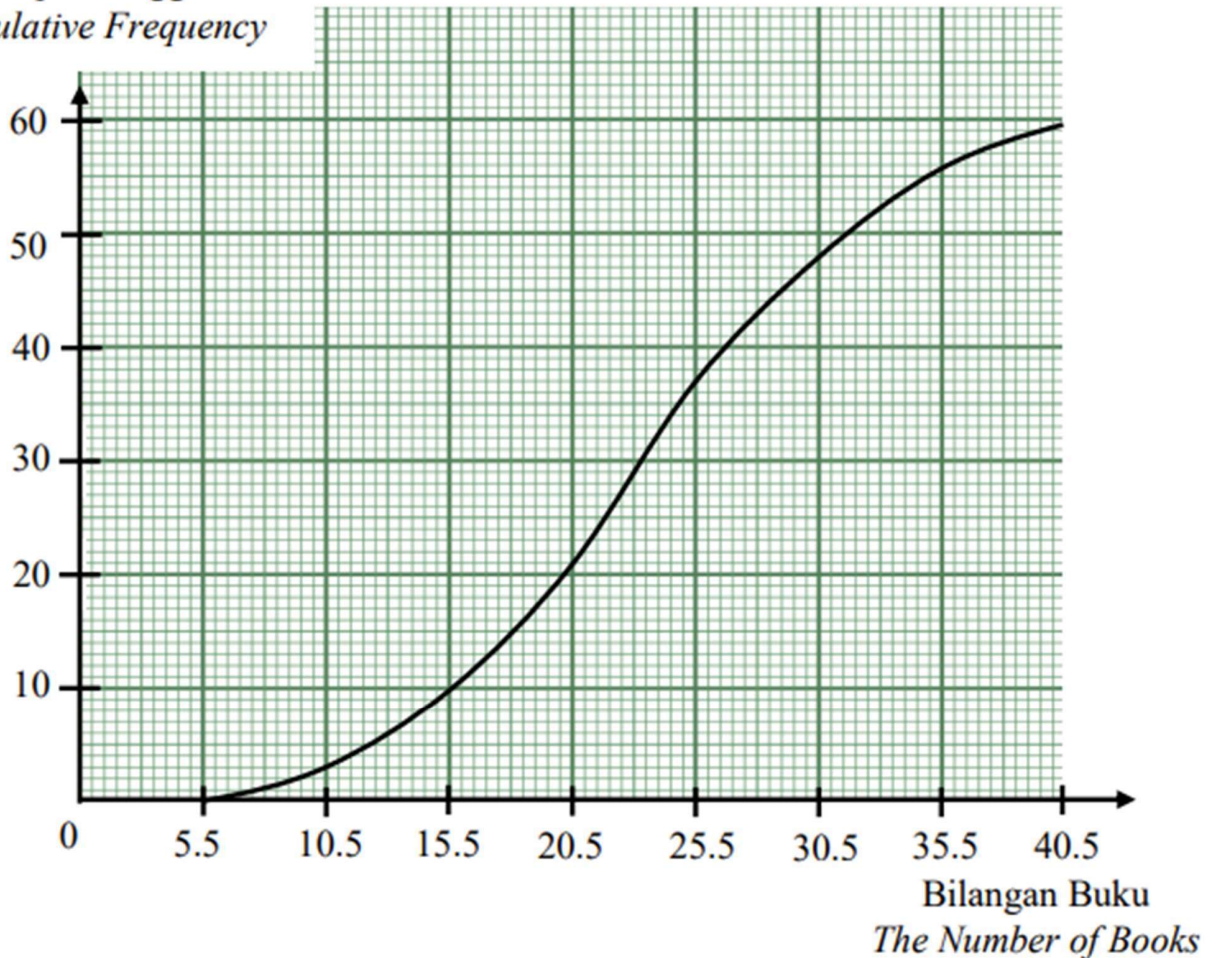


Trial 2023, PERLIS Q38, Ans: A

**316** Rajah 17 ialah satu ogif yang menunjukkan bilangan buku yang dibaca oleh sekumpulan murid dalam bulan Jun

*Diagram 17 is an ogive that shows the number of books read by a group of students in June.*

Kekerapan longgokan  
*Cumulative Frequency*



Murid yang membaca buku melebihi persentil ke-80 layak menerima sijil. Berapakah bilangan murid yang layak menerima sijil tersebut?

*Students who read books above the 80<sup>th</sup> percentile are eligible to receive a certificate. How many students are eligible to receive the certificate?*

- A** 12  
**B** 48

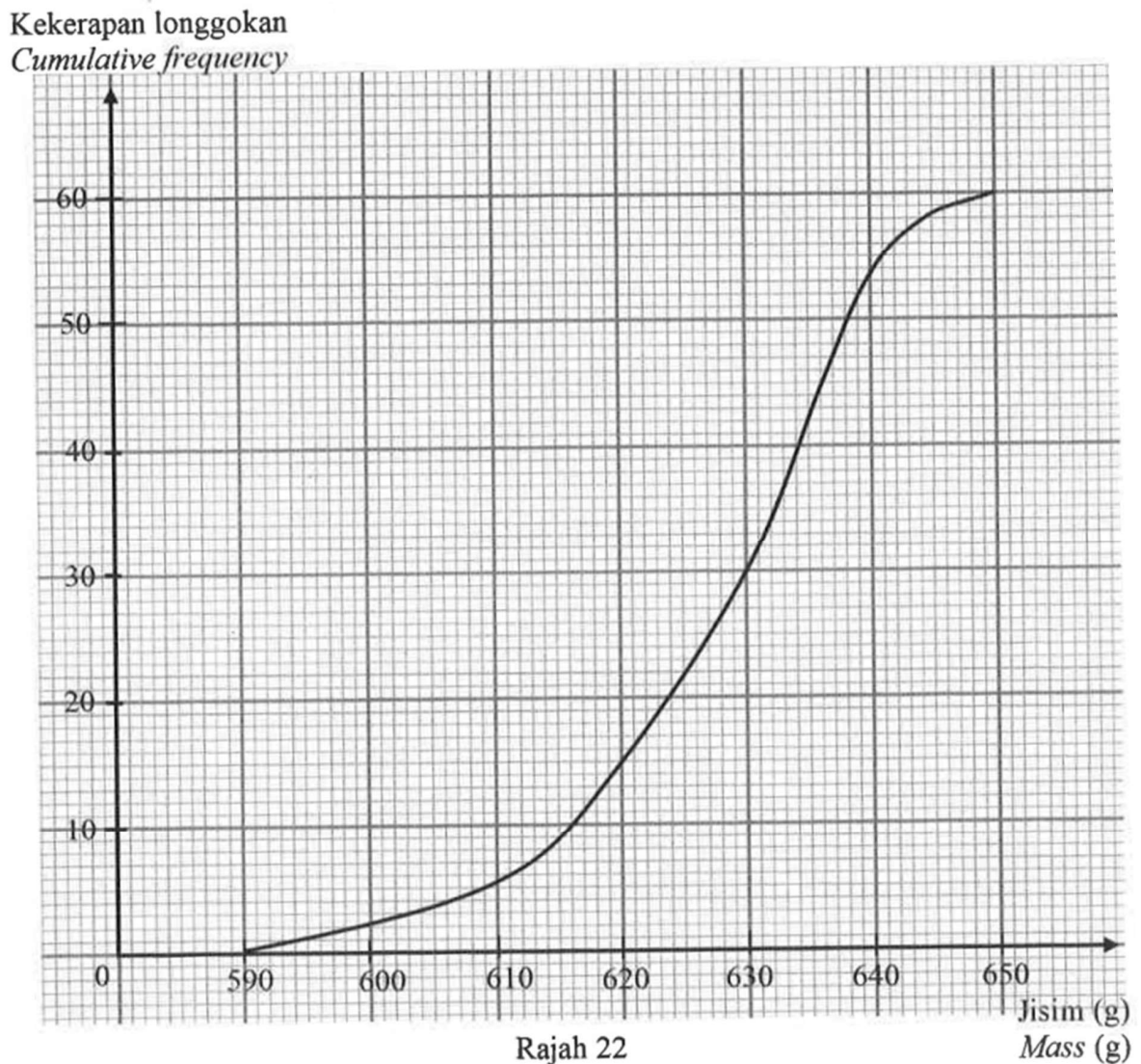
- C** 60  
**D** 80



Trial 2023, SBP, Q39, Ans: D

317 Rajah 22 menunjukkan ogif bagi jisim, dalam g, 60 biji mangga.

Diagram 22 shows an ogive of the mass, in g, of 60 mangoes.



Antara berikut, yang manakah TIDAK benar?

Which of the following is NOT true?

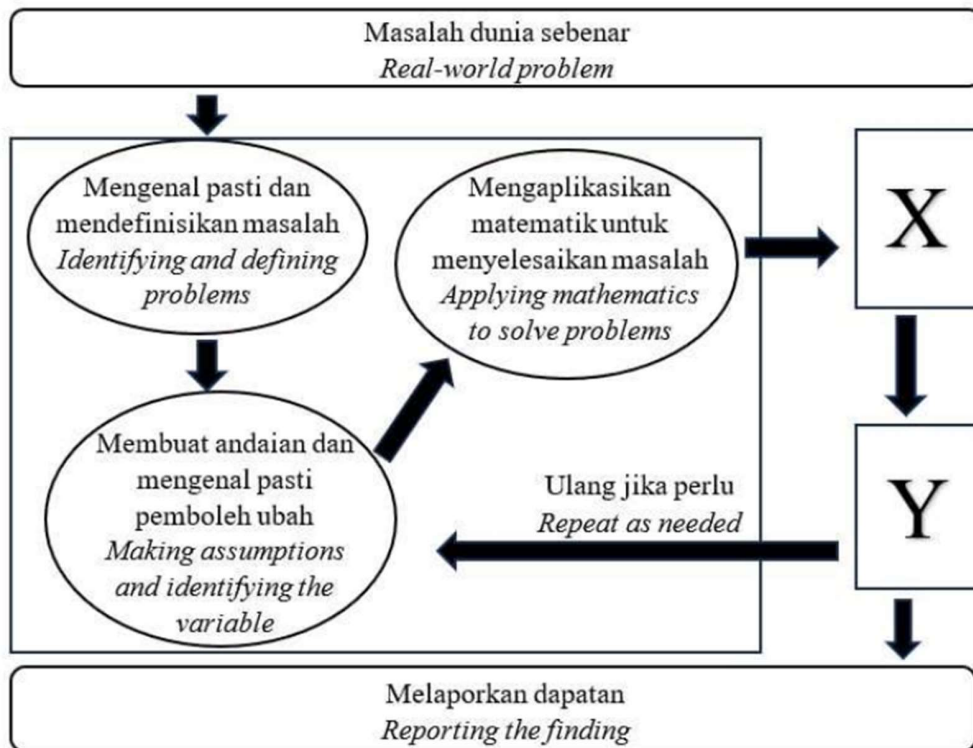
- A Nilai maksimum bagi jisim mangga ialah 650g.  
Maximum value for the mass of the mangoes is 650 g.
- B 50% daripada jisim mangga adalah selebih-lebihnya 630 g.  
50% of the mass of the mangoes are at most 630 g.
- C Jisim 45 biji mangga melebihi 620 g.  
The mass of 45 mangoes are more than 620g.
- D Jula tantara kuartil bagi data di atas ialah 30 biji mangga.  
The interquartile range for the data above is 30 mangoes.

**F5 8.1 PEMODELAN MATEMATIK**

Trial 2023, UD3 Melaka, Q24, Ans: C

**318** Rajah 6 menunjukkan ringkasan proses permodelan.

Diagram 6 shows the simplified modelling process.



Apakah X dan Y?

What is X and Y?

	X	Y
<b>A</b>	Menjalankan ujikaji atau eksperimen. <i>Conduct a trial or experiment</i>	Justifikasikan hasil dapatan. <i>Justify the findings</i>
<b>B</b>	Justifikasikan hasil dapatan. <i>Justify the findings</i>	Menjalankan ujikaji atau eksperimen. <i>Conduct a trial or experiment</i>
<b>C</b>	Menentusahkan dan mentafsir penyelesaian dalam konteks masalah berkenaan. <i>Verifying and interpreting solution in context of the problem.</i>	Memurnikan model matematik. <i>Refining the mathematical model.</i>
<b>D</b>	Memurnikan model matematik. <i>Refining the mathematical model.</i>	Menentusahkan dan mentafsir penyelesaian dalam konteks masalah berkenaan. <i>Verifying and interpreting solution in context of the problem.</i>