

50/1
Matematik
Kertas 1
Masa :
1 jam 15 minit

PEPERIKSAAN PERCUBAAN PMR TAHUN 2009

MATEMATIK
Kertas 1
Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini mengandungi 40 soalan.*
2. *Jawab semua soalan.*
3. *Jawab dengan menghitamkan ruangan yang betul pada kertas jawapan.*
4. *Bagi setiap soalan, hitamkan satu ruangan sahaja.*
5. *Sekiranya anda hendak menukarkan jawapan, padamkan tanda yang telah dibuat. Kemudian hitamkan jawapan yang baru.*
6. *Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan.*
7. *Satu senarai rumus disediakan di halaman 2 hingga 3.*

Kertas ini mengandungi 19 halaman bercetak

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

RELATIONS

- 1 $a^m \times a^n = a^{m+n}$ 2 $a^m \div a^n = a^{m-n}$ 3 $(a^m)^n = a^{mn}$ 4
- Distance = $\sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ 5. Midpoint $(x, y) = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$
- 6 Average speed = $\frac{\text{distance travelled}}{\text{time taken}}$ 7 Mean = $\frac{\text{sum of data}}{\text{number of data}}$
- 8 Pythagoras Theorem
 $c^2 = a^2 + b^2$

SHAPE AND SPACE

- 1 Area of rectangle = length \times width
- 2 Area of triangle = $\frac{1}{2} \times$ base \times height
- 3 Area of parallelogram = base \times height
- 4 Area of trapezium = $\frac{1}{2} \times$ sum of parallel sides \times height
- 5 Circumference of circle = $\pi d = 2\pi r$
- 6 Area of circle = πr^2
- 7 Curved surface area of cylinder = $2\pi rh$
- 8 Surface area of sphere = $4\pi r^2$
- 9 Volume of right prism = cross sectional area \times length
- 10 Volume of cuboid = length \times width \times height
- 11 Volume of cylinder = $\pi r^2 h$
- 12 Volume of cone = $\frac{1}{3} \pi r^2 h$ 13 Volume of sphere = $\frac{4}{3} \pi r^3$
- 14 Volume of right pyramid = $\frac{1}{3} \times$ base area \times height
- 15 Sum of interior angles of a polygon = $(n - 2) \times 180^\circ$
- 16 $\frac{\text{arc length}}{\text{circumference of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$
- 17 $\frac{\text{area of sector}}{\text{area of circle}} = \frac{\text{angle subtended at centre}}{360^\circ}$
- 18 Scale factor, $k = \frac{PA'}{PA}$
- 19 Area of image = $k^2 \times$ area of object

1. 148 683 is written as 150 000 after rounding off to
 148 683 ditulis sebagai 150 000 setelah dibundarkan kepada

- A ten
puluh
 B hundred
ratus
 C thousand
ribu
 D ten thousand
puluh ribu

2. Diagram 1 shows the common multiples which are mapped to two numbers.
Rajah 1 menunjukkan gandaan sepunya yang mana dipadankan kepada dua nombor.

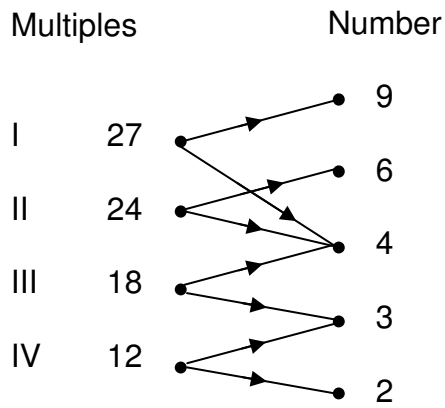


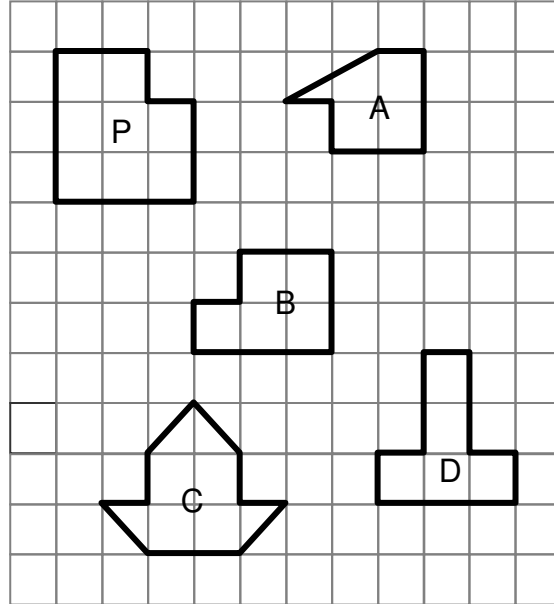
Diagram 1
Rajah 1

The correct mapping is
Padanan yang betul ialah

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

3. Diagram 2 is drawn on a grid of equal squares.
Rajah 2 dilukis pada grid segiempat sama.

Diagram 2
Rajah 2



Which of the diagram labelled A, B, C and D is $\frac{3}{4}$ the area of diagram P?
Antara rajah yang dilabel A, B, C dan D yang manakah mempunyai keluasan $\frac{3}{4}$ daripada rajah P?

4. Diagram 3 show a number sequence.
Rajah 3 menunjukkan urutan nombor.

Diagram 3
Rajah 3

-21 -19 -15 -9 k 9

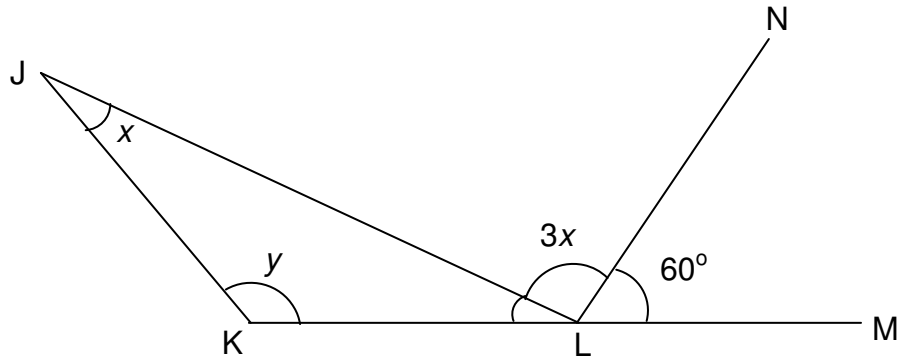
Find the value of k.
Cari nilai bagi k.

- A -5
B -3
C -1
D 0

5. Raihan bought 8 songkok for RM240. He make a profit of 60% from the sale of all the songkok . Calculate the selling price of the each songkok.
Raihan membeli 8 songkok dengan harga RM240. Dia mendapat keuntungan sebanyak 60% daripada jualan semua songkok . Hitungkan harga jualan bagi satu songkok

- A RM12
 B RM18
 C RM30
 D RM48

6. In diagram 4, KLM is a straight line and $KJ = KL$.
Dalam Rajah 4, KLM ialah garis lurus dan $KJ = KL$.



The value of y is
Nilai y ialah

- A 110
 B 120
 C 130
 D 135

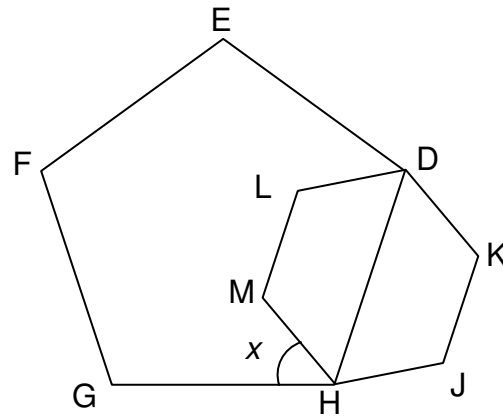
Diagram 4
 Rajah 4

7. A tuition center charges a registration fee for RM15. The monthly fee for Science and Arts subjects is RM40 and RM35 respectively . Muthu signed up for p science subjects and q arts subjects. The total fee paid by Muthu in RM was
Sebuah pusat tuisyen mengenakan yuran pendaftaran sebanyak RM15. Yuran bulanan untuk mata pelajaran Sains dan Sastera masing-masing RM40 dan RM35. Muthu mendaftar p mata pelajaran Sains dan q mata pelajaran Sastera. Jumlah yuran yang perlu dibayar oleh Muthu dalam RM ialah

- A $90 + p + q$
 B $15 (40p + 35q)$
 C $35p + 55q$
 D $40p + 35q + 15$

8. In diagram 5, DEFGH is a regular pentagon and DLMHJK is a regular hexagon.
 Dalam rajah 5, DEFGH ialah pentagon sekata dan DLMHJK ialah heksagon sekata.

Diagram 5
Rajah 5

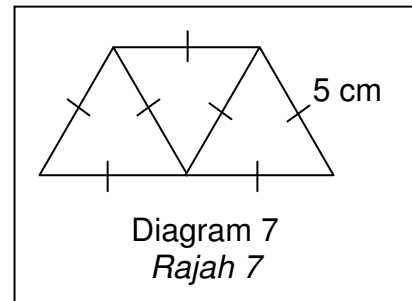


Find the value of x .
 Cari nilai bagi x .

- A 25
 B 30
 C 32
 D 48
9. Which of the following points, P (-6,0), Q (0,-5), R (0,3) and S (8,0) are situated on the y-axis?
 Antara titik-titik P (-6,0), Q (0,-5), R (0,3) dan S (8,0) yang manakah terletak di atas paksi-y?
- A Q and R
 B Q and S
 C R and S
 D P and Q
10. Given that $3x - 2y = 4$ and $x - 2y = -6$. Calculate the value of x .
 Diberi $3x - 2y = 4$ dan $x - 2y = -6$. Hitungkan nilai x .
- A -5
 B -1
 C 5
 D 1

11. Diagram 7 shows 3 equilateral triangle.
 Rajah 7 menunjukkan 3 buah segitiga sama sisi.

Calculate the perimeter, in cm of the diagram.
 Hitungkan perimeter, dalam cm, seluruh rajah itu.



- A 25
 B 30
 C 35
 D 40

12. In Diagram 8 the reading of the balance is not accurate.
Dalam Rajah 8, bacaan pada penimbang adalah tidak tepat.

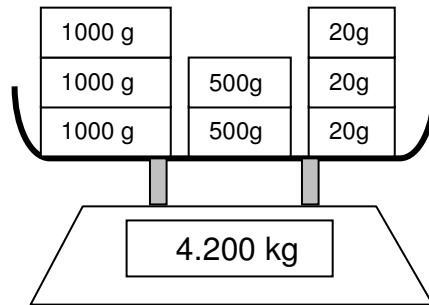


Diagram 8
Rajah 8

Find the difference between the reading and the actual mass, in kg.
Cari perbezaan di antara bacaan dengan berat sebenar, dalam kg.

- A 1.40
 B 0.86
 C 0.14
 D 0.04
13. Diagram 9 shows two rectangles, P and Q.
Rajah 9 menunjukkan 2 segi empat tepat, P dan Q.

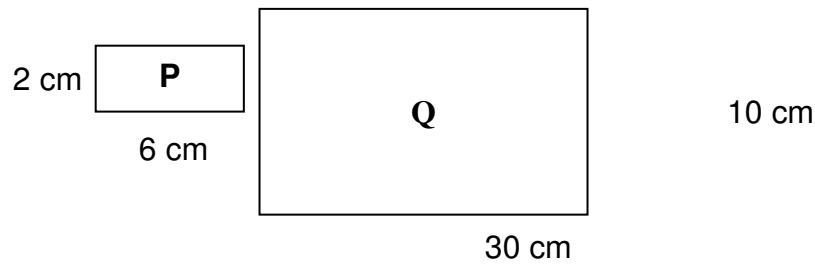


Diagram 9
Rajah 9

Given that Q is the scale drawing of P, the scale use is
Diberi Q ialah lukisan berskala P, skala yang digunakan ialah

- A $1 : \frac{1}{5}$
 B $1 : \frac{1}{3}$
 C $1 : 3$
 D $1 : 5$

14. In Diagram 10 , JLMN is a quadrilateral and JKN is an equilateral triangle. K is the mid point of the straight line JL.
 Dalam Rajah 10 , JLMN ialah sisiempat dan JKN ialah segitiga sama sisi. K ialah titik tengah garis lurus JL.

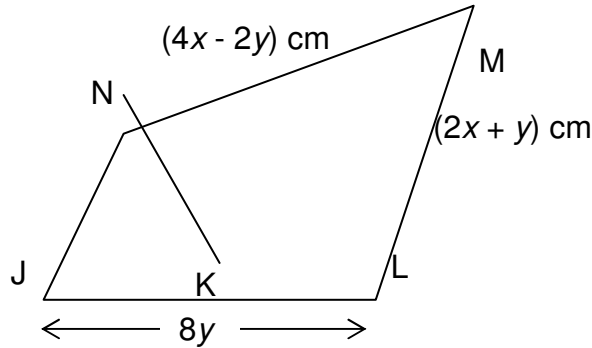


Diagram 10
Rajah 10

Given that perimeter of this diagram is p cm, state p in terms of x and y .
 Diberi perimeter rajah ialah p cm, nyata p dalam sebutan x dan y .

- A $3x - y$
 - B $4x + 7y$
 - C $6x + 11y$
 - D $6x + 15y$
15. Diagram 11 shows a trapezium PQRS.
 Rajah 11 menunjukkan trapezium PQRS.

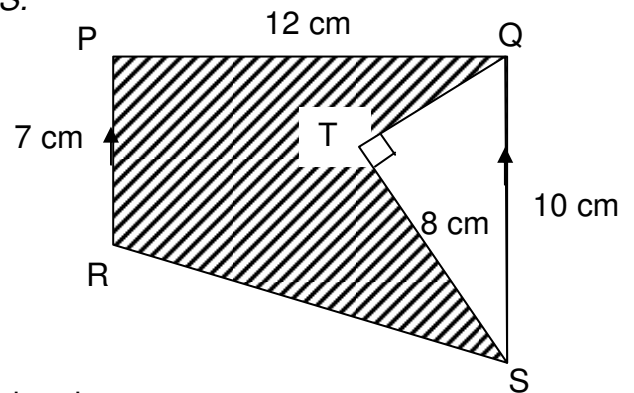


Diagram 11
Rajah 11

Calculate the area, in cm^2 , of the shaded region.
 Hitung luas, dalam cm^2 , kawasan berlorek.

- A 96
- B 92
- C 85
- D 78

16. Diagram 12 shows the right circular cylinder. The shaded part in the shape of right circular cone is removed from the cylinder. Calculate the volume, in cm^3 , of the remaining solid .

Rajah 12 menunjukkan sebuah silinder tegak. Bahagian berlorek berbentuk kon tegak dikeluarkan dari silinder. Hitung isipadu, dalam cm^3 , pepejal yang tinggal itu.

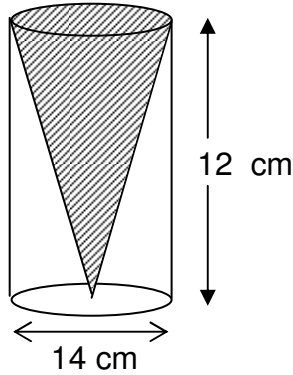


Diagram 12
Rajah 12

- A 1568π
 - B 1176π
 - C 392π
 - D 294π
17. Diagram 13 are drawn on a grid of equal square.
Rajah 13 dilukis pada grid segi empat sama.

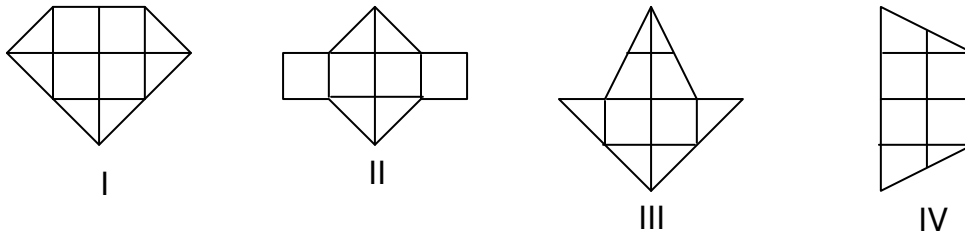
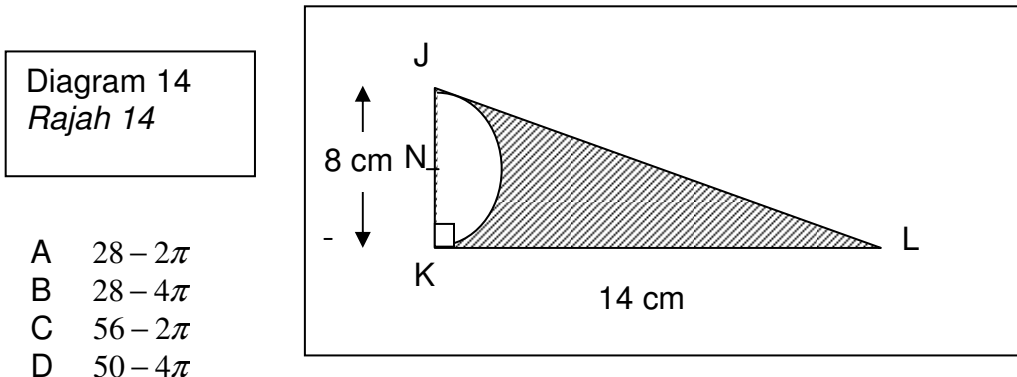


Diagram 13
Rajah 13

Which of the diagram labeled I, II, III and IV has only one line of symmetry?
Antara rajah yang berlabel I, II III dan IV yang manakah mempunyai hanya satu paksi simetri?

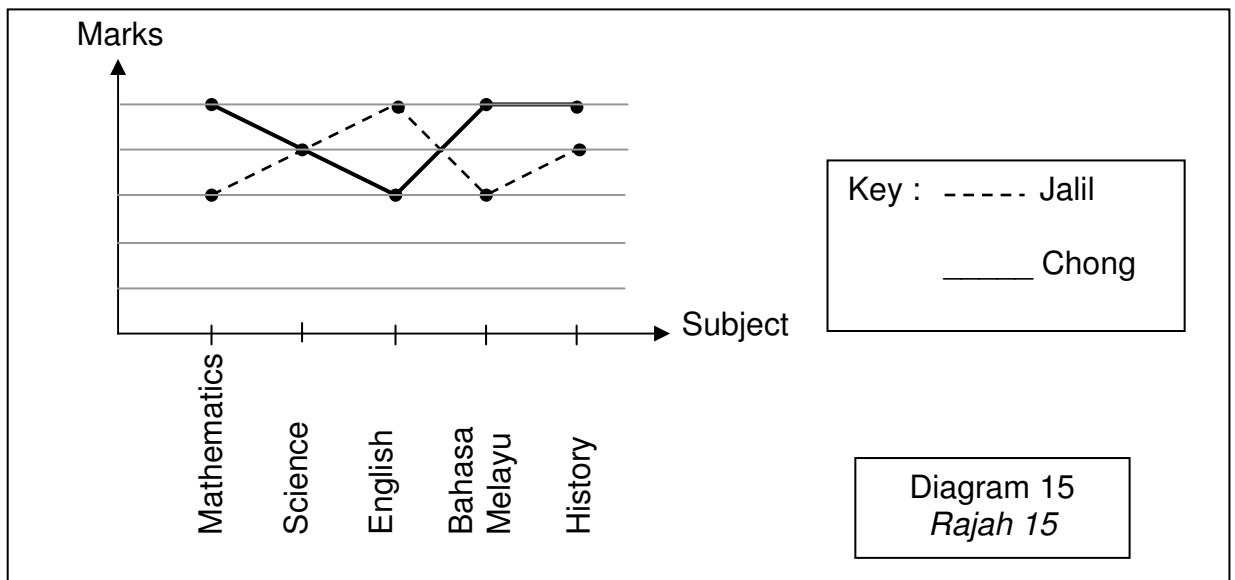
- A I and III
- B I, II and III
- C I, III and IV
- D I, II, III and IV

18. In Diagram 14, JMK is a semicircle with centre N.
 Dalam Rajah 14, JMK ialah semi bulatan berpusat N.



- A $28 - 2\pi$
- B $28 - 4\pi$
- C $56 - 2\pi$
- D $50 - 4\pi$

19. Diagram 15 is a line graph showing the mark of Chong and Jalil in 5 subjects.
 Rajah 15 ialah graf garis yang menunjukkan markah yang diperolehi oleh Chong dan Jalil dalam 5 mata pelajaran.



In which subjects did Chong get higher mark than Jalil?
 Dalam mata pelajaran apakah Chong mendapat markah lebih tinggi dari Jalil?

- A Mathematics and English only
 Matematik dan English sahaja
- B Mathematics and Science only
 Matematik dan Sains sahaja
- C Mathematics, Bahasa Melayu and History only
 Matematik, Bahasa Melayu dan Sejarah sahaja
- D Mathematics, Science, Bahasa Melayu and History only
 Matematik, Sains, Bahasa Melayu dan Sejarah sahaja

20. The data in Diagram 16 shows hobbies of 28 students in a class.
Data dalam Rajah 16 menunjukkan hobi bagi 28 orang pelajar dalam sebuah kelas.

F	S	F	R	W	F	W
R	F	S	W	R	W	R
S	R	S	F	S	R	W
R	S	W	R	R	W	F

Note:

Nota

F = Fishing (*Memancing*)

R = Reading (*Membaca*)

S = Collecting stamps (*Mengumpul setem*)

W = Watching television
Menonton televisyen

State the mode .
Nyatakan mod.

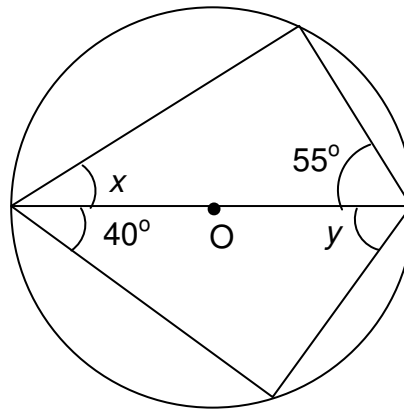
- A Fishing (*Memancing*)
- B Reading (*Membaca*)
- C Collecting stamps (*Mengumpul setem*)
- D Watching television (*Menonton televisyen*)

21.
 22. Diagram 17, O is the centre of the circle.
Rajah 17, O ialah pusat bulatan.

Diagram 17
Rajah 17

Find the value of $x + y$
Cari nilai bagi $x + y$

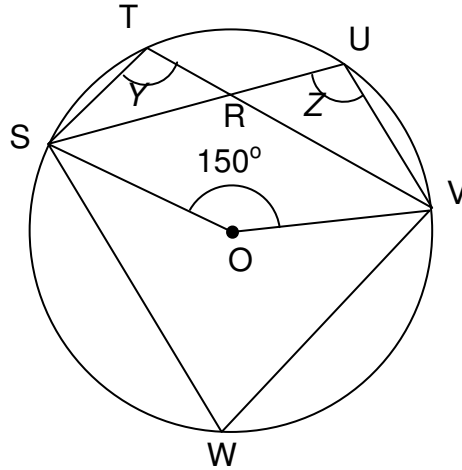
- A 105
- B 95
- C 90
- D 85



22. Diagram 18, STUVW is a circle with centre O, SRU and TRV are straight line.

Rajah 18, STUVW ialah sebuah bulatan berpusat O. SRU dan TRV ialah garis lurus.

Diagram 18
Rajah 18



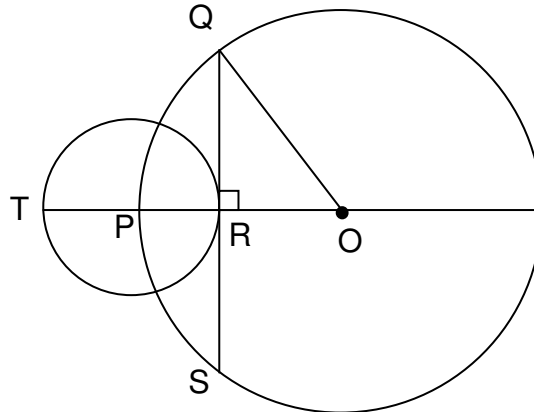
Find the value of $Y + Z$
Cari nilai $Y + Z$

- A 150
- B 190
- C 210
- D 220

23. Diagram 19 shows two circles with centre P and O respectively. ORPT is a straight line.

Rajah 19 menunjukkan dua bulatan masing-masing berpusat P dan Q. ORPT ialah garis lurus.

Diagram 19
Rajah 19



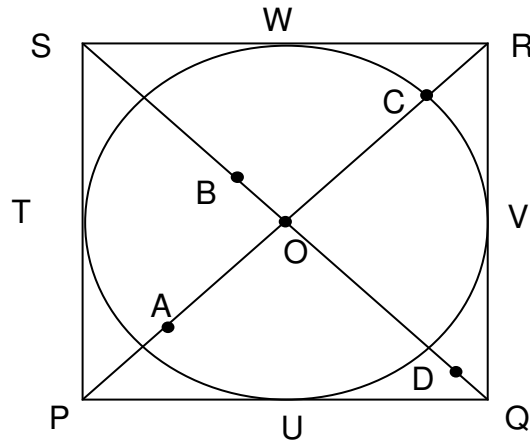
Given that $OQ = 10$ cm and $QRS = 16$ cm, calculate the length, in cm, of ORPT

Diberi bahawa $OQ = 10$ cm dan $QRS = 16$ cm, hitungkan panjang, dalam cm, bagi ORPT

- A 13
- B 14
- C 15
- D 16

24. Diagram 20, PQRS is a square of sides 6 cm and UVWT is a circle with centre O.
Rajah PQRS ialah sebuah segiempat sama bersisi 6 cm dan UVWT ialah sebuah bulatan berpusat O

Diagram 20
Rajah 20

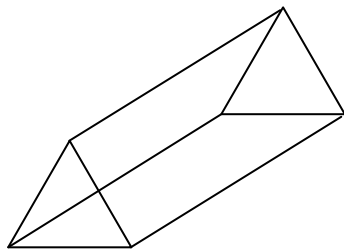


- Which of the points A, B, C and D that it is constantly 3 cm from the point O?
Antara titik A, B, C dan D yang manakah sentiasa berjarak 3 cm dari titik O?
25. The number of postcards which Abu, Basir and Chan have are in the ratio of 2 : 5 : 3. Three of them have a total 400 postcards. Basir gives 20 postcards each to Abu and Chan. Find the new ratio the of Abu, Basir and Chan
Bilangan poskad yang dipunyai oleh Abu, Basir dan Chan mengikut nisbah 2 : 5 : 3. Jumlah poskad mereka ialah 400. Basir memberi kepada Abu dan Chan 20 poskad masing-masing. Cari nisbah baru di antara Abu Basir dan Chan.

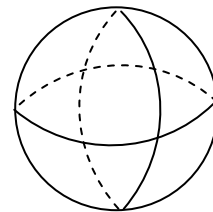
- A 4 : 3 : 8
- B 5 : 8 : 7
- C 6 : 9 : 5
- D 7 : 8 : 5

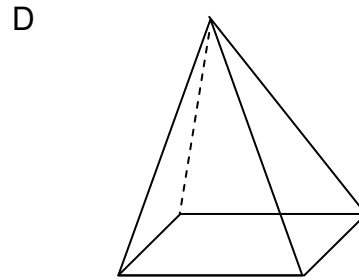
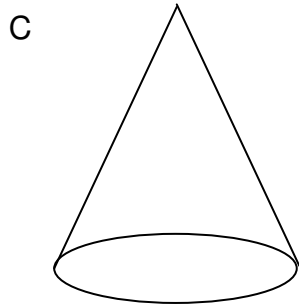
26. Which of the following solid is a prism?
Antara pepejal yang berikut, yang manakah ialah prisma.

A.



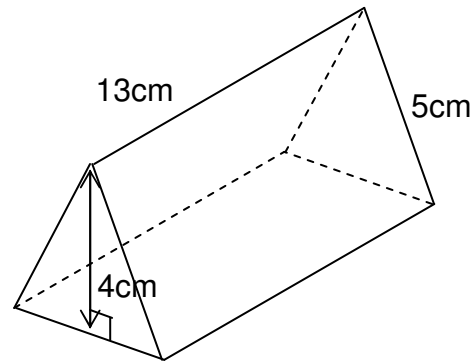
B.





27. Diagram 21 show a right prism.
Rajah 21 menunjukkan sebuah prisma tegak.

Diagram 21
Rajah 21



Calculate the total surface area, in cm^2 of the prism
Hitung jumlah luas permukaan, dalam cm^2 prisma itu

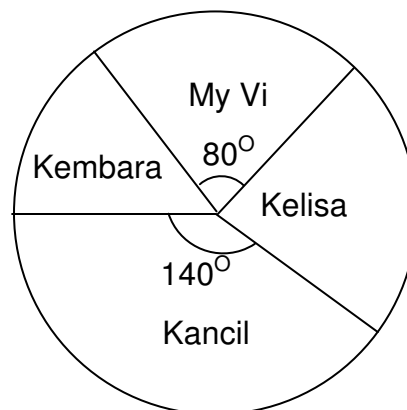
- A 232
 B 238
 C 242
 D 248
28. Solve the following linear inequality
Selesaikan ketaksamaan linear berikut :

$$3 + \frac{x}{2} < 6 - 2x$$

- A $x < \frac{6}{5}$
 B $x > \frac{6}{5}$
 C $x < -\frac{6}{5}$
 D $x > -\frac{6}{5}$

29. Diagram 22 is a pie chart showing the number of cars sold in Negeri Pahang.
Rajah 22 ialah carta pai yang menunjukkan bilangan kereta yang dijual di negeri Pahang.

Diagram 22
Rajah 22



If the total number of cars sold is 72 000, find the number of Kembara and Kelisa cars sold.

Jika jumlah kereta yang dijual ialah 72 000, cari bilangan kereta Kembara dan Kelisa yang dijual.

- A 2 400
 B 2 800
 C 3 000
 D 3 200
30. Table 2 shows the values of variables x and y of a function.
Jadual 2 menunjukkan nilai-nilai bagi pembolehubah x dan y bagi suatu fungsi.

x	-3	-1	1
y	11	7	13

Table 2
Jadual 2

The function is
Fungsi tersebut adalah

- A $y = 5 - 2x$
 B $y = x + 2$
 C $y = 1 - 6x$
 D $y = x + 14$

31. Diagram 23 shows the marks scored by students in a quiz.
Rajah 23 menunjukkan skor markah murid dalam suatu kuiz.

Diagram 23
Rajah 23

3, 7, 4, 5, 3, 2, 3, 6, 7

Find the difference between the mode and the median
Cari beza di antara mod dan median.

- A 0
 B 1
 C 2
 D 3
32. Table 3 shows the prices of meat, fish and vegetable in a market.
Jadual 3 menunjukkan harga jualan bagi daging, ikan dan sayur.

Table 3
Jadual 3

	Price
Meat	RM10 for 1kg
Fish	RM6 for 1kg
Vegetable	RM4 for 1kg

Faridah buys 800 g of meat, 600 g of fish dan 1.2 kg of vegetables. The total payment, in RM made by Faridah is
Faridah membeli 800 g daging, 600 g ikan dan 1.2 kg sayur. Hitungkan jumlah yang perlu dibayarnya dalam RM

- A 16.00
 B 16.40
 C 16.80
 D 17.20
33. Table 4 shows the daily wages of a group of five workers R,S,T,U and V.
Jadual 4 menunjukkan upah harian bagi lima orang pekerja, R,S,T,U dan V

Table 4
Jadual 4

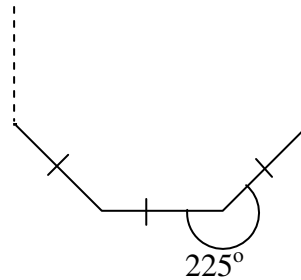
R	S	T	U	V
RM 31	RM 32	RM 30	RM 30	RM 33

The number of workers whose daily wages are more than the mean daily wage of the group is
Bilangan pekerja yang mendapat upah melebihi min upah harian kumpulan pekerja itu adalah

- A 1 B 2 C 3 D 4

34. Diagram 22 shows parts of a regular polygon.
Rajah 22 menunjukkan sebahagian daripada suatu polygon sekata.

Diagram 24
Rajah 24



Find the number of sides of the polygon.
Cari bilangan sisi poligon tersebut.

- A 6
 B 8
 C 10
 D 12
35. Haikal drives his car with a constant speed of 120 kmh^{-1} for 1 hour and 20 minutes. Calculate the distance traveled, in km.
Haikal memandu keretanya pada halaju tetap 120 kmj^{-1} selama 1 jam 20 minit. Hitungkan jarak pejalanannya dalam km.

- A 80
 B 160
 C 180
 D 200

36. Diagram 25 shows a polygon that has one axis of symmetry.
Rajah 25 menunjukkan sebuah poligon yang mempunyai satu paksi simetri.

The value of $x+x$ is
 Nilai bagi $x+x$ adalah

- A 120
 B 130
 C 140
 D 160

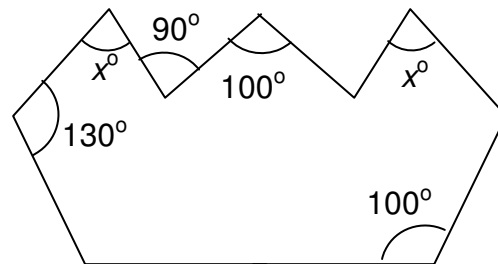


Diagram 25
Rajah 25

37. In Diagram 26, PQR is a straight line. Q is the midpoint of PR.
 Dalam Rajah 26, PQR adalah garis lurus. Q adalah titik tengah PR.

Find the value of n .
 Carikan nilai n .

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

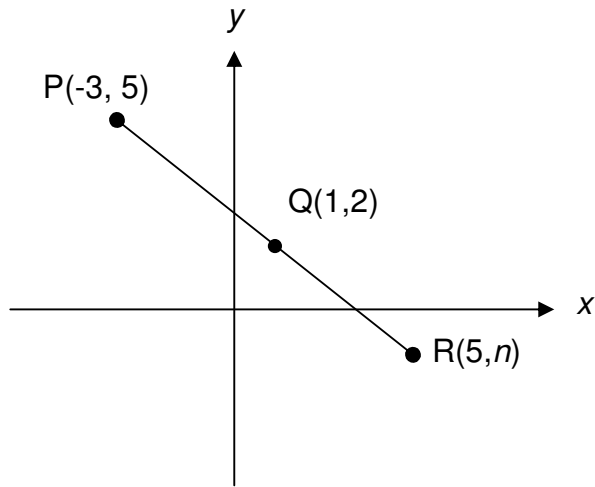


Diagram 26
 Rajah 26

38. In diagram 27, PRT and QRS are straight lines.
 Dalam Rajah 27, PRT dan QRS adalah garis lurus.

Find the value of x .
 Cari nilai x .

- A 55
- B 65
- C 75
- D 80

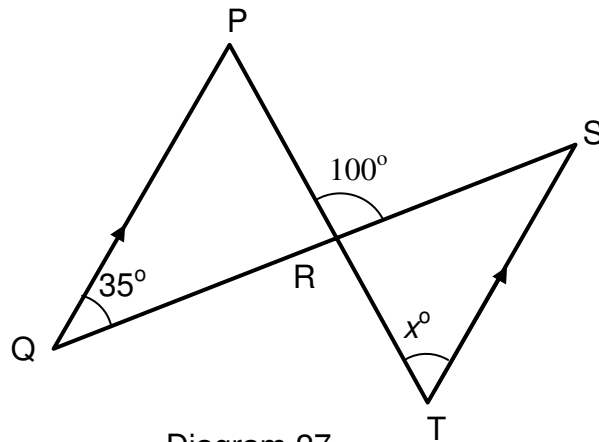
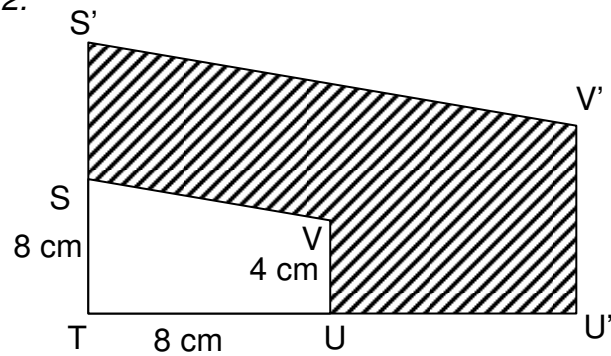


Diagram 27
 Rajah 27

39. In Diagram 28, $S'TU'V'$ is the image of $STUV$ under an enlargement with the scale factor of 2.

Dalam Rajah 28, $S'TU'V'$ adalah imej bagi $STUV$ di bawah suatu pembesaran dengan factor skala 2.

Diagram 28
Rajah 28



Calculate the area, in cm^2 , of the shaded region.
Hitungkan luas, dalam cm^2 , kawasan berlorek.

- A 12
 - B 18
 - C 24
 - D 30
40. Diagram 27 shows four straight lines.
Rajah 27 menunjukkan empat garis lurus.

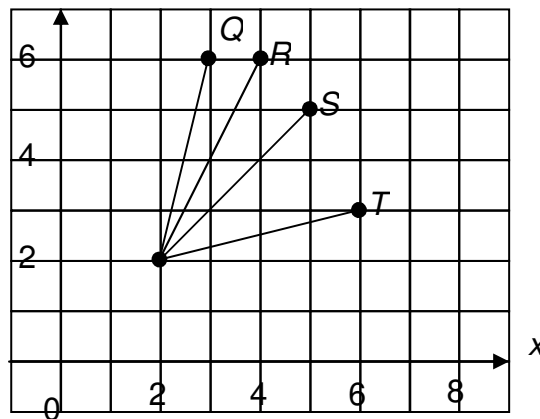


Diagram 29
Rajah 29

Which of the following lines is the graph of function for $y = 2x - 2$.
Garis lurus manakah merupakan graf bagi fungsi $y = 2x - 2$.

- A PR
- B PS
- C PT
- D PQ

SOALAN TAMAT