

SULIT

50/1

50/1

Matematik

Kertas 1

Ogos 2008

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

NAMA DAN LOGO
SEKOLAH

PEPERIKSAAN PERCUBAAN TAHUN 2008
TINGKATAN 3
PENILAIAN MENENGAH RENDAH

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. Rajah yang mengiringi soalan tidak dilukiskan mengikut skala kecuali dinyatakan.
7. Satu senarai rumus disediakan di halaman 2 hingga 3.
8. Anda dibenarkan menggunakan kalkulator saintifik yang tidak boleh diprogramkan

Kertas soalan ini mengandungi 21 halaman bercetak

[Lihat sebelah]

SULIT

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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 x width
2. Area of triangle = $\frac{1}{2}$ x base x height
3. Area of parallelogram = base x height
4. Area of trapezium = $\frac{1}{2}$ x sum of parallel sides x height
5. Circumference of circle = $\pi d = 2 \pi r$
6. Area of circle = πr^2
7. Curved surface area of cylinder = $2 \pi r h$
8. Surface area of sphere = $4 \pi r^2$
9. Volume of right prism = cross sectional area x length
10. Volume of cuboid = length x width x height
11. Volume of cylinder = $\pi r^2 h$

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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 = $\frac{1}{3}$ x base area x height
15. Sum of interior angles of a polygon = $(n - 2) \times 180^0$
16.
$$\frac{\text{Arc length}}{\text{Circumference of circle}} = \frac{\text{Angle subtended at centre}}{360^0}$$
17.
$$\frac{\text{Area of sector}}{\text{Area of circle}} = \frac{\text{Angle subtended at centre}}{360^0}$$
18. Scale factor, $k = \frac{PA'}{PA}$
19. Area of image = k^2 x area of object

Paper 1

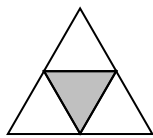
Instruction: This question paper consists 40 questions. Answer **all** questions. Each question is following by four choices of answers **A, B, C** and **D**. For each question, choose **one** answer only. The diagram in the questions provided are not drawn to scale unless stated.

1. A number which has 0 as its last digit is divisible by the following , **except**
*Suatu nombor yang mempunyai 0 sebagai digit terakhir, boleh dibahagi tepat dengan nombor yang berikut **kecuali***

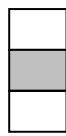
- A 2
 B 4
 C 5
 D 10

2. Which of the following diagrams represent $\frac{1}{3}$?

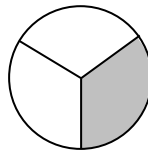
Yang manakah di antara berikut mewakili $\frac{1}{3}$?



I



II



III

- A I and II
 B I and III
 C II and III
 D I , II and III
3. How many prime numbers are there between 10 and 30?
Berapakah bilangan nombor perdana yang terdapat di antara 10 dan 30?

- A 6
 B 5
 C 4
 D 2

4. Which of the following is **correct**?
Yang manakah di antara berikut adalah benar?

- A Odd numbers : 2, 3, 5, 7, 9
Nombor ganjil
- B Even numbers : 2, 4, 6, 8
Nombor genap
- C Prime numbers : 1, 2, 3, 5, 7, 9
Nombor perdana
- D Multiples of 2 : 2, 4, 6, 8, 10, 13
Gandaan 2

5. In an examination, 72 out of 180 students failed . Calculate the percentage of the students who passed.
Di dalam satu peperiksaan , 72 daripada 180 pelajar telah gagal. Hitungkan peratus pelajar yang telah lulus.

- A 40%
- B 50%
- C 60%
- D 70%

6. In Diagram 1, x is a reflex angle.
Di dalam Rajah 1, x adalah sudut refleksi.

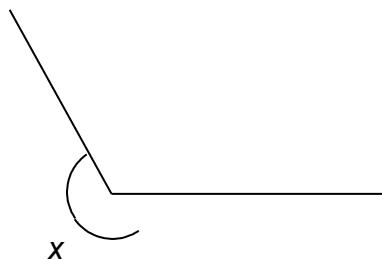


Diagram 1

What is the possible value of x ?
Apakah nilai yang mungkin bagi x ?

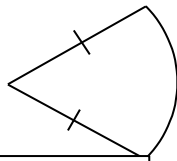
- A 98°
- B 109°
- C 164°
- D 216°

7. Simplify $5x + 2y - 3x - y$
Permudahkan $5x + 2y - 3x - y$

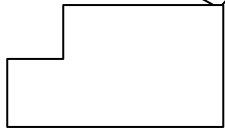
- A $8x + 3y$
- B $2x + y$
- C $2x + 3y$
- D $2x + 2y$

8. Which of the following does not have a line of symmetry.
Yang manakah di antara berikut tidak mempunyai garis simetri.

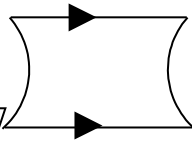
A



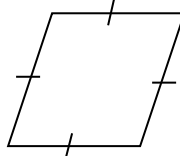
B



C



D



9. Diagram 2 is a Cartesian plane.
Rajah 2 adalah satah Cartesan.

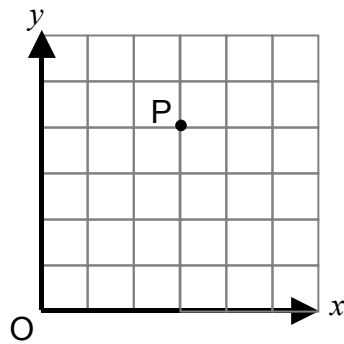


Diagram 2

If the scales used for x-axis and y-axis are 1:2 and 1:4 respectively, then the coordinates for point P are

Jika skala yang digunakan untuk paksi-x dan paksi-y masing-masing adalah 1:2 dan 1:4, maka koordinat untuk P ialah

- A (3,4)
B (3,8)
C (6,8)
D (6, 16)
10. Simplify $\frac{pq}{4s} \div \frac{pr}{2}$
Permudahkan

- A $\frac{2rs}{q}$
B $\frac{pq+2}{4s+pr}$
C $\frac{q+2}{4s+r}$
D $\frac{q}{2rs}$

11. Diagram 3 is drawn on a grid of equal squares with sides of 2 cm.
Rajah 3 dilukis pada grid segiempat sama bersisi 2 cm.

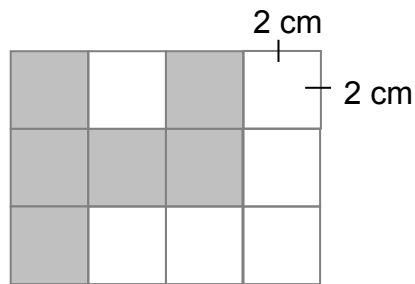


Diagram 3

Find the perimeter of the shaded part, in cm.
Cari perimeter bagi kawasan yang berlorek dalam cm.

- A 14 cm
 B 28 cm
 C 36 cm
 D 48 cm
12. Ali started his journey at 9.00 a.m. He stopped for $\frac{3}{4}$ hours for lunch. After that, Ali continued his journey and reached his destination at 3.05 p.m on the same day. How long was his journey?
Ali memulakan perjalanannya pada pukul 9.00 pagi. Dia berhenti selama $\frac{3}{4}$ jam untuk makan tengahari. Selepas itu, Ali meneruskan perjalanan dan sampai ke destinasiya pada pukul 3.05 petang pada hari yang sama. Berapa lamakah tempoh perjalanan Ali?
- A 9 hours 45 minutes
 B 8 hours 15 minutes
 C 5 hours 20 minutes
 D 4 hours 50 minutes
13. Diagram 4 is drawn on square grids. Which of the polygons A, B, C and

D is the scale drawing of P?

Rajah 4 dilukis pada graf segiempat sama. Antara poligon A, B, C dan D, yang manakah lukisan berkala bagi P?

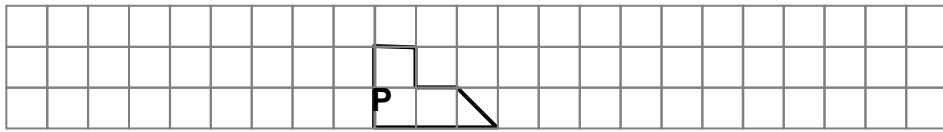
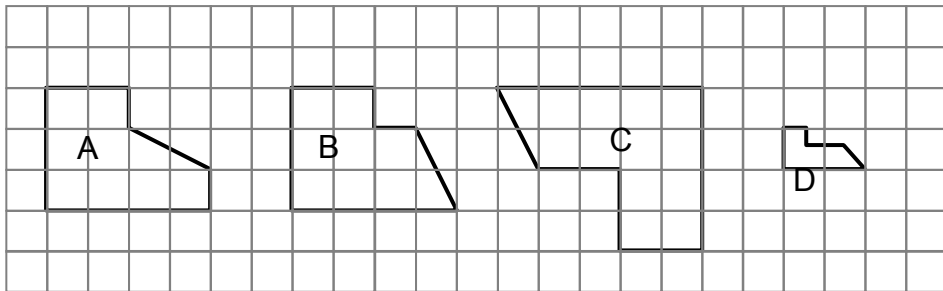


Diagram 4



14. In the Diagram 5 ABC is a straight line and $AB=CD$.
Dalam Rajah 5 ABC ialah garis lurus dan $AB=CD$

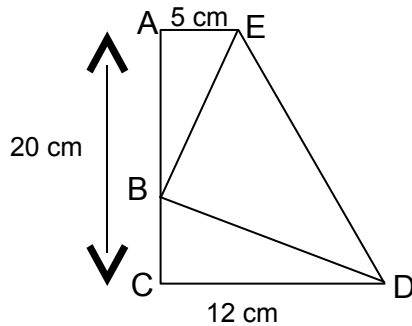


Diagram 5

- Calculate the area , in cm^2 , of triangle BDE.
Hitung luas , dalam cm^2 , segitiga BDE.
- A 78
 B 92
 C 122
 D 140
15. Aunty May bought $5p$ slices of chocolate cake at RM $3q$ per slice and $6p$ slices of pineapple cake at RM $2q$ per slice. How much did Aunty May need to pay?
Aunty May membeli $5p$ potong kek coklat yang berharga RM $3q$ sepotong dan $6p$ potong kek nenas yang berharga RM $2q$ sepotong. Berapakah yang perlu dibayar oleh Aunty May ?
- A RM $15pq$
 B RM $16pq$
 C RM $27pq$
 D RM $27p^2q^2$
16. The most efficient way to calculate $(76 \times 8) - (8 \times 45)$ is
Kaedah yang paling cekap untuk mengira $(76 \times 8) - (8 \times 45)$ ialah
- A $76 \times 8 - 45$
 B $76 \times 45 - 8$
 C $(76 - 45) - (8 \times 8)$
 D $8 (76 - 45)$

17. The area of a semicircle, in cm^2 , with diameter 14 cm is

Use $\pi = \frac{22}{7}$

Luas separuh bulatan , dalam cm^2 , yang mempunyai diameter 14 cm ialah (Ambil $\pi = \frac{22}{7}$)

- A 14
 B 35
 C 75
 D 77
18. Diagram 6 shows the number of lower secondary pupils in a certain school who failed in the Final Year Examination , Mathematics paper.
Rajah 6 menunjukkan bilangan pelajar menengah rendah di sebuah sekolah yang gagal dalam Kertas Matematik Peperiksaan Akhir Tahun

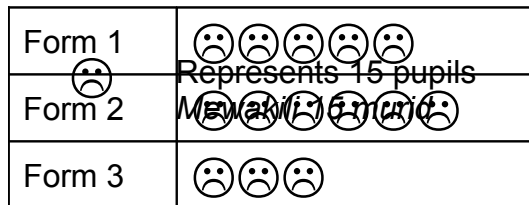


Diagram 6

The total number of pupils who failed the Mathematics paper is
Jumlah pelajar yang gagal dalam Kertas Matematik ialah

- A 14
 B 70
 C 140
 D 210

19. In Diagram 7, O is the centre of circle.
Dalam Rajah 7, O ialah pusat bulatan.

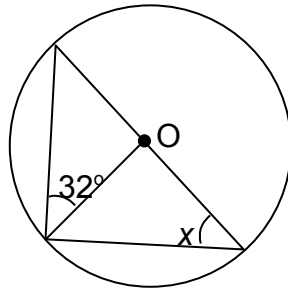


Diagram 7

The value of x is
Nilai x ialah

- A 32°
 B 58°
 C 64°
 D 122°
20. Diagram 8 shows the expenditure of Mr. Zainal in April.
Rajah 8 menunjukkan perbelanjaan Encik Zainal untuk bulan April.

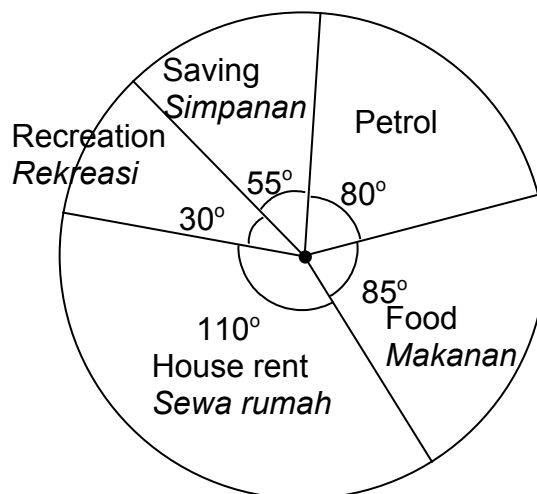
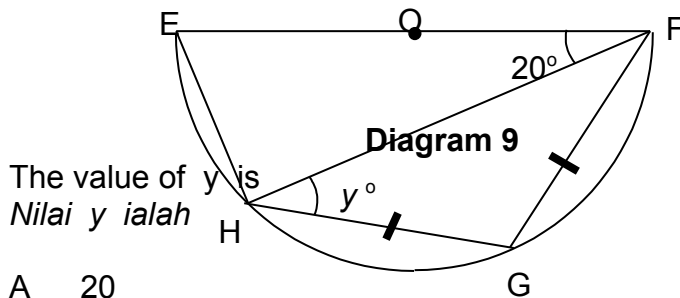


Diagram 8

What is the mode?
Apakah mod?

- A House rent
Sewa rumah
 B Food
Makanan
 C Saving
Simpanan
 D Recreation
Rekreasi

21. Diagram shows a semicircle EFGH with centre O. Given that $FG = GH$.
Rajah menunjukkan separuh bulatan EFGH dengan pusat O. Diberi $FG = GH$.



The value of y is
 Nilai y ialah

- A 20
 B 25
 C 35
 D 70
22. In Diagram 10, JKM is an equilateral triangle. NPQ is a circular arc with centre J and a radius of 4 cm. Locus X moves such that its distance from J is more than 4 cm. Locus Y moves such that it is equidistant from the lines JK and JM.
Dalam Rajah 10 JKM ialah segitiga samasisi. NPQ ialah satu lengkung berpusat J berjejari 4 cm. Locus X ialah satu titik yang bergerak dan berjarak lebih 4 cm dari J. Locus Y ialah titik bergerak yang sentiasa berjarak sama dari garis JK dan JM.

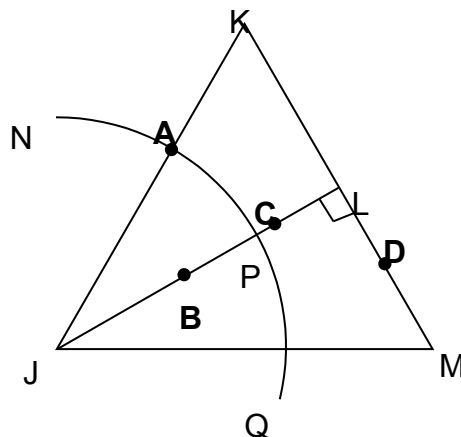


Diagram 10

Which of the points labeled A, B, C and D represents the intersection of the two loci?
Manakah titi-titik yang ditandakan A, B, C dan D mewakili persilangan 2 lokus itu?

23. Diagram 11 is a bar chart which shows the number of eggs sold by Pak Hamdan. The difference between the highest and the lowest sales is 400 eggs.

Rajah 11 ialah carta bar yang menunjukkan bilangan telur yang dijual oleh Pak Hamdan. Perbezaan antara jualan tertinggi dan jualan terendah ialah sebanyak 400 biji telur.

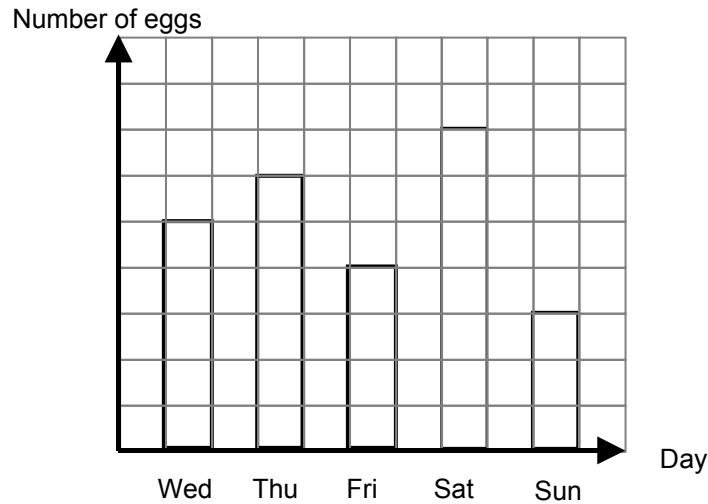


Diagram 11

If the profit from each egg sold is 3 sen, calculate his profit on Saturday.
Jika keuntungan daripada setiap biji telur ialah 3 sen, kira keuntungan pada hari Sabtu.

- A RM 18
- B RM 21
- C RM 35
- D RM 210

24. In Diagram 12, PQRS is a rectangle. Given that $UR = 17$ cm.
Dalam Rajah 12, PQRS ialah sebuah segiempat tepat. Diberi $UR = 17$ cm.

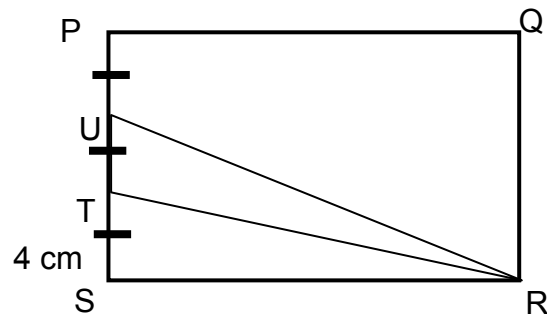
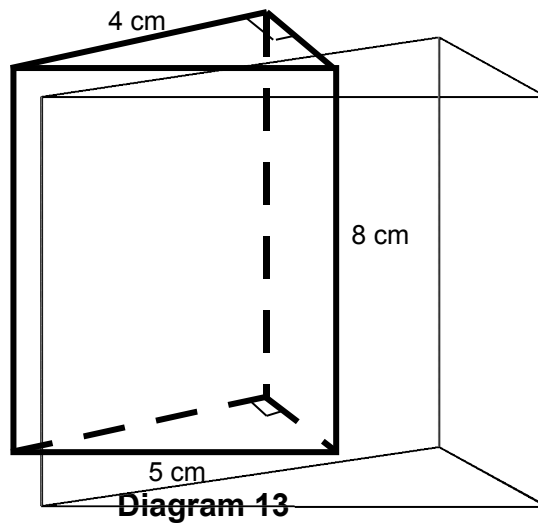


Diagram 12

- Calculate the area, in cm^2 , of the shaded region.
Kirakan luas, dalam cm^2 , kawasan yang berlorek.
- A 30
 B 40
 C 45
 D 60
25. Given that $x : y = 7 : 3$ and $y : z = 4 : 9$, then $x : y : z =$
Diberi $x : y = 7 : 3$ dan $y : z = 4 : 9$, maka $x : y : z =$
- A 28 : 12 : 9
 B 7 : 12 : 27
 C 28 : 12 : 9
 D 28 : 12 : 27

26. Diagram 13 shows a right prism.
Rajah 13 menunjukkan sebuah prisma tegak.



Calculate the volume, in cm^3 , of the prism.
Hitung isipadu, dalam cm^3 , prisma tersebut.

- A 48
 B 52
 C 60
 D 80
27. Simplify $\frac{(2r)^2 + 4r}{r^2 - 1}$

Permudahkan

- A $\frac{4}{r - 1}$
 B $\frac{4r}{r - 1}$
 C $\frac{4r + 1}{r - 1}$
 D $\frac{4r + 1}{r + 1}$
28. Solve the inequality $x - 5 \leq 7 - 5x$
Selesaikan ketaksamaan $x - 5 \leq 7 - 5x$
- A $x \leq 2$
 B $x \geq 2$
 C $x \leq 3$
 D $x \leq -3$

29. In Diagram 14, $OP'Q'R'S'T'$ is the image of $OPQRST$ under a certain enlargement. Given that the area of the object is 12 cm^2 .
 Dalam Rajah 14, $OP'Q'R'S'T'$ ialah imej $OPQRST$ dibawah satu pembesaran. Diberi, luas objek ialah 12 cm^2 .

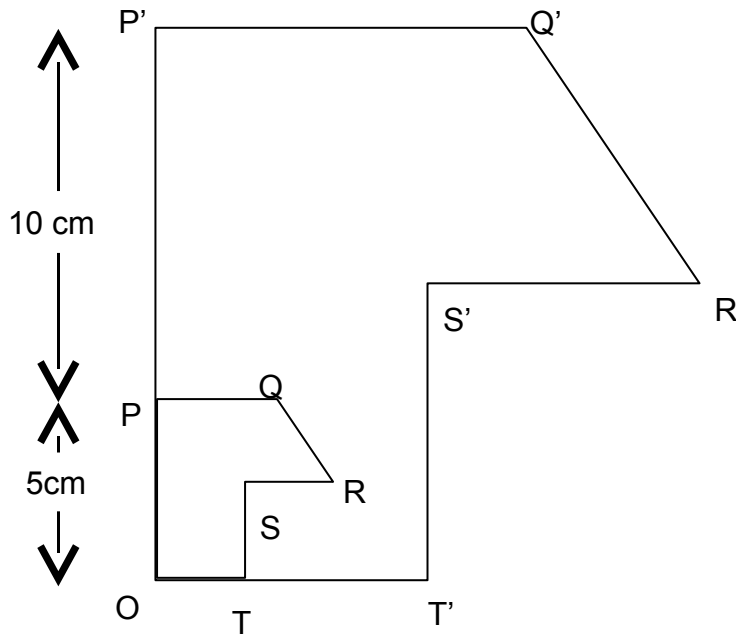


Diagram 14

Find the area of the shaded region.
 Cari luas kawasan berlorek.

- A 24
- B 36
- C 96
- D 108

30. In Diagram 15, PQRST is a regular pentagon and RUV is a straight line.
Dalam Rajah 15, PQRST ialah sebuah pentagon sekata dan RUV ialah satu garis lurus.

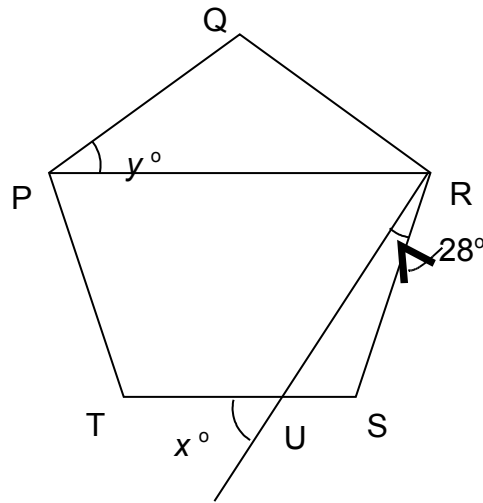


Diagram 15

- Find the value of $x + y$
Cari nilai $x + y$.
- A 64
 B 80
 C 82
 D 98
31. Given that $\frac{2(4p-r)}{r} = 5$, thus $r =$
Diberi $\frac{2(4p-r)}{r} = 5$, maka $r =$

- A $\frac{8p}{7}$
 B $\frac{8p}{3}$
 C $\frac{4p}{3}$
 D $\frac{3p}{2}$

32. In Diagram 16, PRS is a straight line.
Dalam Rajah 16, PRS ialah garis lurus.

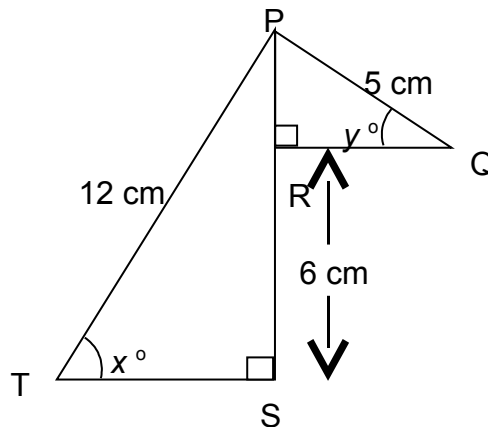


Diagram 16

Given that $\sin x = \frac{3}{4}$, then $\tan y^\circ =$

Diberi $\sin x = \frac{3}{4}$, maka $\tan y^\circ =$

- A $\frac{4}{3}$
 B $\frac{4}{5}$
 C $\frac{3}{4}$
 D $\frac{3}{5}$
33. $\frac{9}{xy} - \frac{4x}{y} =$

- A $\frac{9-4x^2}{xy}$
 B $\frac{9y-4x}{xy}$
 C $\frac{9-4x}{xy^2}$
 D $\frac{9y-4x}{xy^2}$

34. Diagram 17 shows a solid which is a part of a cone.
Rajah 17 menunjukkan bongkah sebahagian daripada kon.

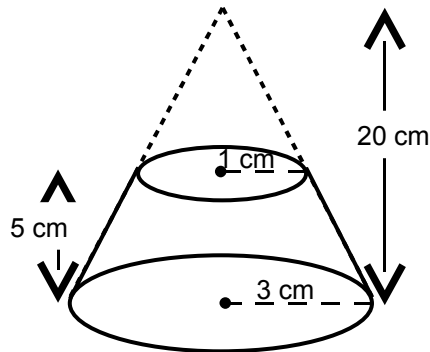


Diagram 17

Calculate the volume of the solid in cm^3 .
Kirakan isipadu bongkah tersebut dalam cm^3 .

- A 45π
 B 55π
 C $102\frac{1}{2}\pi$
 D 165π
35. Diagram 18 shows a solid made up of a prism and a cuboid.
Rajah 18 menunjukkan bongkah dari gabungan prisma dan kuboid.

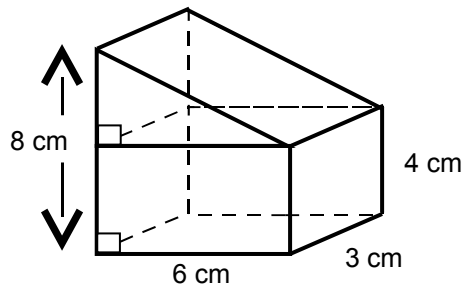


Diagram 18

The volume of the solid in cm^3 is
Isipadu bongkah tersebut dalam cm^3 ialah

- A 144
 B 140
 C 108
 D 96

36. $(2p + 3r)(p - 6r) =$

- A $2p^2 - 9pr - 18r^2$
- B $2p^2 + 3pr - 18r^2$
- C $2p^2 - 9r^2$
- D $2p^2 - 18r^2$

37. Table 1 shows the price of pineapples and mangoes.
Jadual 1 menunjukkan harga nenas dan mangga.

Fruit (<i>Buah</i>)	Price (<i>Harga</i>)
Pineapple (<i>Nenas</i>)	RM10 for 5 (<i>RM10 untuk 5 biji</i>)
Mango (<i>Mangga</i>)	RM1.80 each (<i>RM1.80 sebiji</i>)

Table 1

Puan Aminah buys 3 pineapples and 5 mangoes. How much should she pay?

Puan Aminah membeli 3 biji nenas dan 5 biji mangga. Berapakah jumlah harga yang perlu dibayar

- A RM 24.00
 - B RM 16.00
 - C RM 15.40
 - D RM 15.00
38. The solution for simultaneous linear equations $x + 4y = 7$ and $4x + 3y = -11$ are
Penyelesaian bagi persamaan linear serentak $x + 4y = 7$ dan $4x + 3y = -11$ adalah
- A $x = -9, y = 4$
 - B $x = -9, y = -2$
 - C $x = 19, y = 3$
 - D $x = -5, y = 3$

39. In Diagram 19, Q is the image of P under an enlargement.
Dalam Rajah 19 , Q ialah imej kepada P di bawah satu pembesaran.

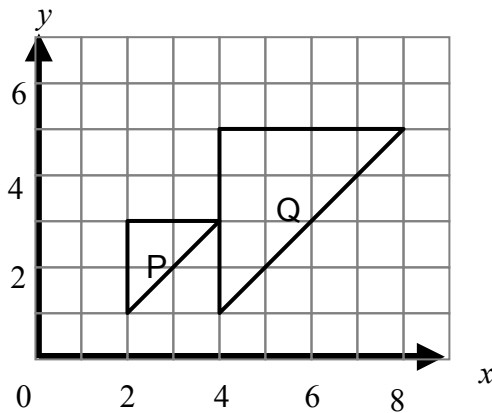


Diagram 19

- Find the coordinates of the centre of the enlargement.
Apakah koordinat bagi pusat pembesaran tersebut.
- A (0,0)
 B (0,1)
 C (0,2)
 D (1,0)
40. Diagram 20 shows a straight line $2y = x + 10$ passes through point $(0, k)$.
Rajah 20 menunjukkan garis lurus $2y = x + 10$ melalui titik $(0, k)$.

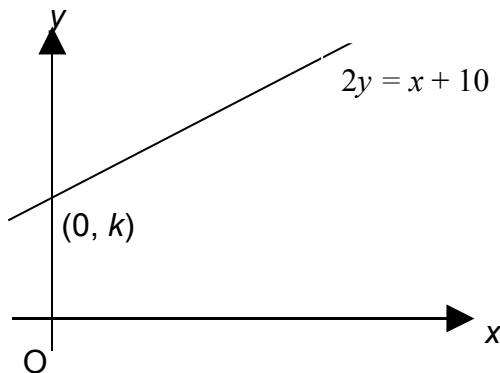


Diagram 20

The value of k is
Nilai k ialah

- A 0
 B 2
 C 5
 D 10

SKEMAPEPERIKSAAN PERCUBAAN PMR TAHUN 2008
MATEMATIK KERTAS 1
TINGKATAN 3 Negeri Pahang

QUESTION NUMBER	ANSWER		QUESTION NUMBER	ANSWER
1	B		21	C
2	C		22	C
3	A		23	B
4	B		24	A
5	C		25	D
6	D		26	A
7	B		27	B
8	B		28	A
9	D		29	C
10	D		30	B
11	B		31	A
12	C		32	C
13	C		33	A
14	B		34	B
15	C		35	C
16	D		36	A
17	D		37	D
18	D		38	D
19	B		39	B
20	A		40	C