



SEKOLAH BERASRAMA PENUH
BAHAGIAN PENGURUSAN
SEKOLAH BERASRAMA PENUH/ KLUSTER
KEMENTERIAN PELAJARAN MALAYSIA

PEPERIKSAAN PERCUBAAN PMR SELARAS SBP 2008
TINGKATAN 3
MATEMATIK
Kertas 1

50/1

Ogos 2008

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

Satu jam lima belas minit

JANGAN BUKA KERTAS SOALAN INI SEHINGGA DIBERITAHU

1. *Kertas soalan ini adalah dalam bahasa Inggeris.*
2. *Kertas soalan ini mengandungi **40** soalan.*
3. *Jawab **semua** soalan.*
4. *Tiap-tiap soalan diikuti oleh empat pilihan jawapan, iaitu **A, B, C dan D**. Bagi setiap soalan, pilih satu jawapan sahaja. Hitamkan jawapan anda pada kertas jawapan objektif yang disediakan.*
5. *Jika anda hendak menukar 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 diprogram.*

Kertas soalan ini mengandungi 27 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 = $2\pi rh$
- 3 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

Answer all questions

- 1 $1\,518 \div 3(20 - 6 \times 3) + 992$ round off to the nearest hundreds is
- A 1 300
 - B 1 250
 - C 1 245
 - D 1 200
- 2 Three bulbs which are red, blue and yellow are switched on simultaneously. Each bulb light up at third, fourth and sixth second respectively. At which second will the three bulbs light up simultaneously again?
- A 12
 - B 15
 - C 24
 - D 36
- 3 Calculate the sum of common factors of 8, 20 and 32.
- A 6
 - B 7
 - C 14
 - D 15
- 4 The sum of the first prime number and the first even number is
- A 2
 - B 3
 - C 4
 - D 5
- 5 Faridah has RM50, she uses $\frac{2}{5}$ of her money to buy $1\frac{1}{3}$ kg of prawns.
How much does 1 kg of prawns cost?
- A RM12
 - B RM14
 - C RM15
 - D RM14

- 6 The digit which represents the place value of hundredths from the product of 537.18 and 0.25 is
- A 3
 - B 4
 - C 5
 - D 9
- 7 Maznah's salary is RM 1 600. She received 8 % of increase in her salary. If she spends 25% of her new salary to buy a set of books, how much does the set of books cost?
- A RM128
 - B RM400
 - C RM432
 - D RM528
- 8 Table 1 shows the scores of school S , T , U in a Mathematics quiz. All schools must answer 20 questions. Each correct answer will be given 3 marks whereas for incorrect answer will be given (-2) marks.

School	S	T	U
Correct Answer	65%	90%	75%

Table 1

Find the different scores of schools S and school U .

- A 10
- B 13
- C 15
- D 18

- 9 The mass of an empty box is 2 kg. However, when the box is filled up with several cans of sardines of the same size, the mass becomes 6 kg 550 g. The mass of a can of sardine is 650 g.

How many cans of sardines are there in the box?

- A 7
- B 10
- C 13
- D 14

- 10 In Diagram 1, RST is a straight line.

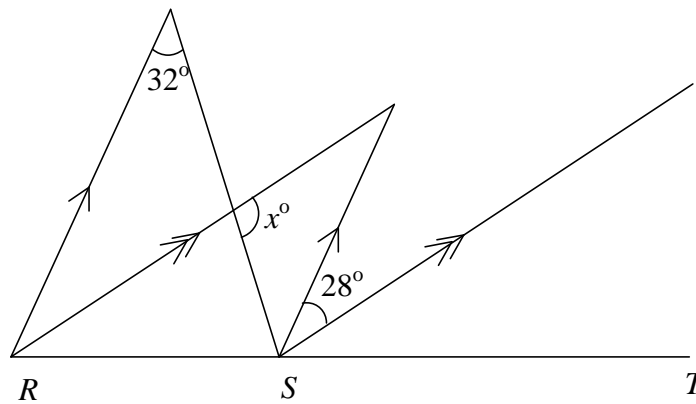


Diagram 1

Find the value of x .

- A 118
- B 120
- C 148
- D 152

- 11 In Diagram 2, PRT and STU are straight lines.

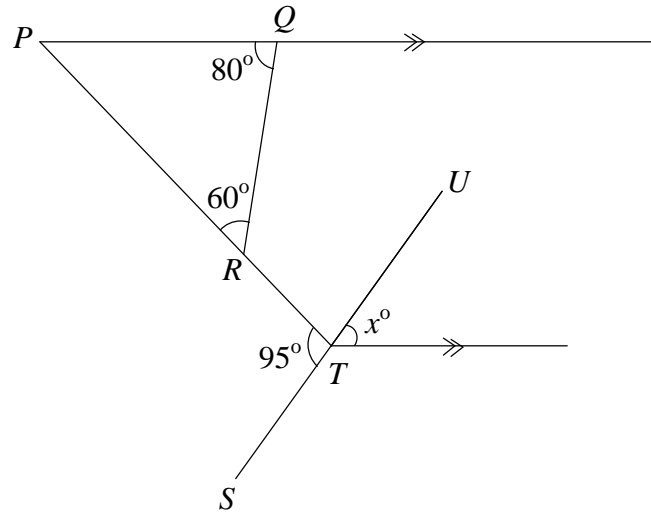


Diagram 2

Find the value of x .

- A 30
 - B 40
 - C 55
 - D 60
- 12 Solve the inequality $3(5 - x) > 3 + x$.
- A $x > 3$
 - B $x < 3$
 - C $x < 6$
 - D $x < 9$

- 13 In Diagram 3, JKL is an equilateral triangle. JLQ and NLM are straight lines.

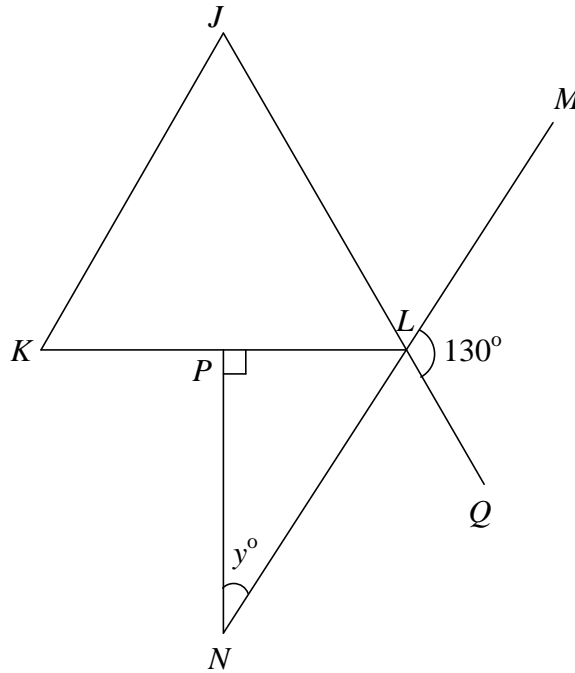


Diagram 3

Find the value of y .

- A 20
 B 30
 C 50
 D 70
- 14 Given $K(-3, 6)$, $L(-5, 4)$ and $M(7, 5)$. Find the distance between midpoint of the straight line KL and point M .
- A 3 units.
 B 6 units.
 C 8 units.
 D 11 units.

- 15 In Diagram 4, $RSTUV$ is a regular pentagon and PQR is a right-angled triangle.

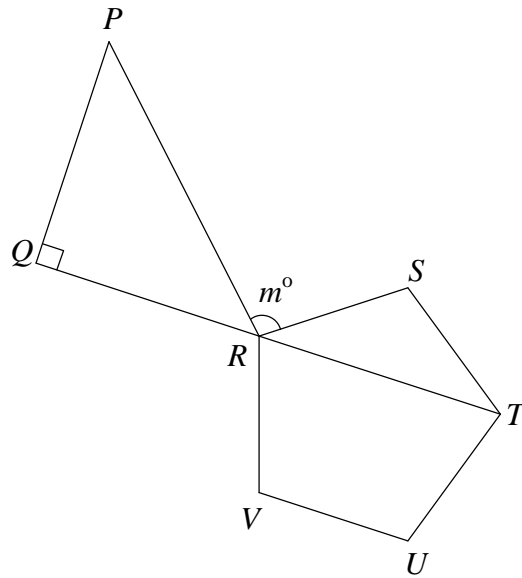


Diagram 4

Given that $PQ = QR$ and QRT is a straight line.

Find the value of m .

- A** 72
B 81
C 99
D 108
- 16 The sum of interior angles of a regular polygon is $1\ 800^\circ$. The exterior angle of the polygon is
- A** 25°
B 28°
C 30
D 40°

- 17 In Diagram 5, the area of rectangular $KLMN$ is $32xy \text{ cm}^2$.

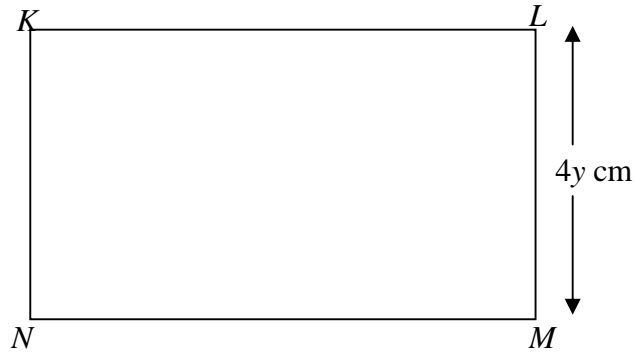


Diagram 5

Express the perimeter, in cm, of the whole diagram.

- A $8x + 4y$
 - B $16x + 16y$
 - C $16x + 8y$
 - D $24xy$
- 18 Given that $2m + 2n = 4$ and $2m = -3$, then $n - m =$

- A -1
- B 2
- C 5
- D 12

- 19 In Diagram 6, KLM is an equilateral triangle whereas $GHJK$ is a square.

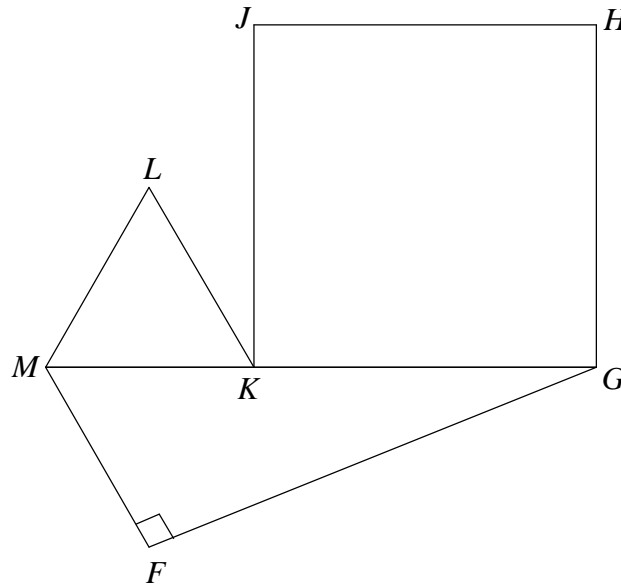


Diagram 6

It is given that the area of $GHJK$ is 64 cm^2 and $FM = LM = 5 \text{ cm}$.

Calculate the perimeter, in cm, of the whole diagram.

- A 48
 B 51
 C 59
 D 64
- 20 At 8.30 a.m, Shah cycled from his house to Shazwan's house at average speed of 27 km/h and arrived at 9.10 a.m.
- What is the distance, in km, from Shah's house to Shazwan's house?
- A 28.5
 B 36.0
 C 18.0
 D 40.5

- 21 In Diagram 7, $PQ'R'S'$ is the image of $PQRS$ under an enlargement.

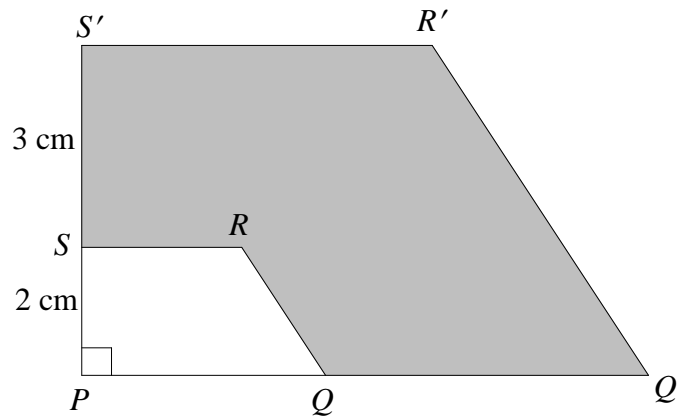


Diagram 7

It is given that the area of $PQRS$ is 12 cm^2 . Find the area, in cm^2 , of the shaded region.

- A 75
 B 63
 C 18
 D 13
- 22 In a stall, the amount of durians and mangosteens sold, in kg, were in the ratio of 13 : 7. At the same time, the ratio of the mass of rambutans sold to the mangosteens was 3 : 2. Find the ratio of the mass of durians sold to the rambutans sold.
- A 13 : 12
 B 26 : 21
 C 39 : 14
 D 49 : 156

- 23 Diagram 8 shows the uniform cross section of two identical hemispherical containers which are arranged in such that touch each other on a horizontal table.

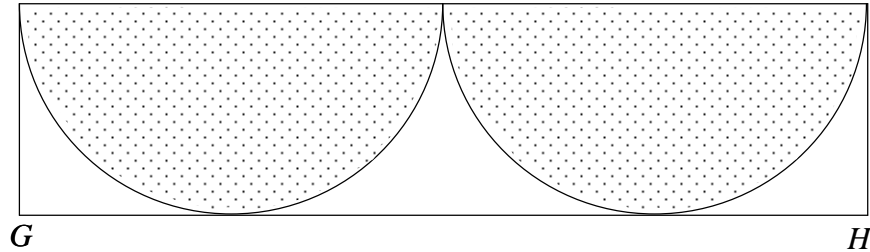


Diagram 8

It is given that both containers are completely filled up with water.

Find the length, in cm, of GH if the volume of water in both container is $288\pi \text{ cm}^3$.

- A 6
B 12
C 18
D 24
- 24 The length of the river is 40 cm on a map. If the scale 1 : 50 000, what is the actual length, in km, of the river?
- A 0.2
B 2
C 20
D 200

- 25 In Diagram 9, JKL is a right-angled triangle drawn on a Cartesian plane.

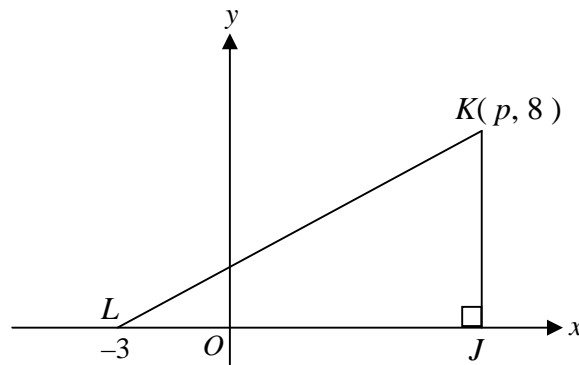


Diagram 9

If the area of the triangle JKL is 36 cm^2 , find the value of p .

- A** 6
B 7
C 8
D 9
- 26 Given $F(-3, 8)$ and $G(-3, -10)$, which of the following statements is/are true about FG on the Cartesian plane.
- I FG is a straight line parallel to y -axis.
II FG is a straight line which passes through point $(0, -3)$.
III The distance between point F and point G is 18 units.
- A** I only
B I and II only
C I and III only
D II and III only

27 Diagram 10 shows points marked on a grid of equal squares with sides of 1 unit.

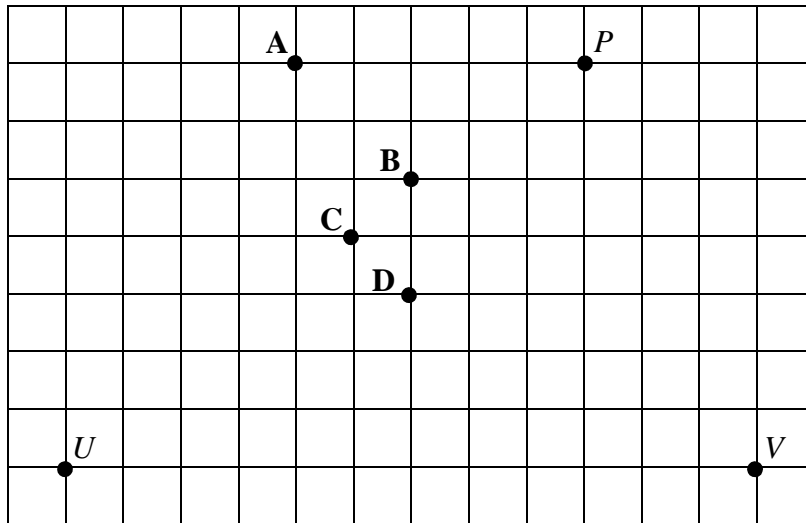


Diagram 10

Which of the points **A**, **B**, **C** and **D** is equidistant from point *U* and point *V* and 5 units from point *P*?

- 28 Diagram 11 shows a sector of a circle with centre O . Given that the length of major arc FGH is 110 cm.

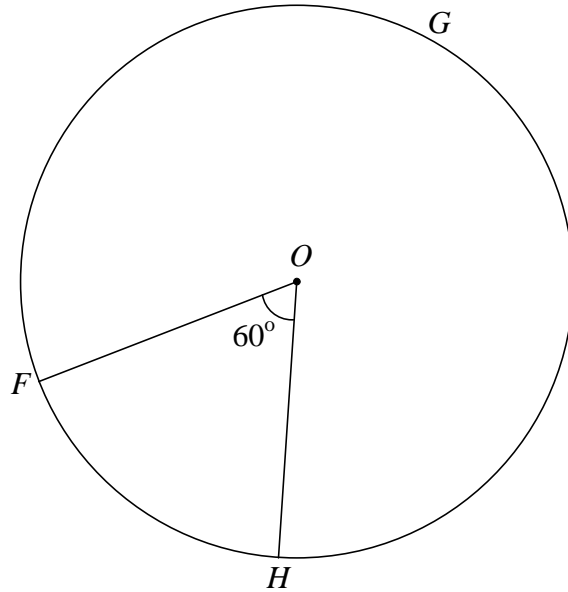


Diagram 11

Find the length, in cm, the radius of the circle.

(use $\pi = \frac{22}{7}$)

- A 5.92
- B 21
- C 35
- D 42

29 Diagram 12 shows a circle with centre O . It is given that MOP is a straight line.

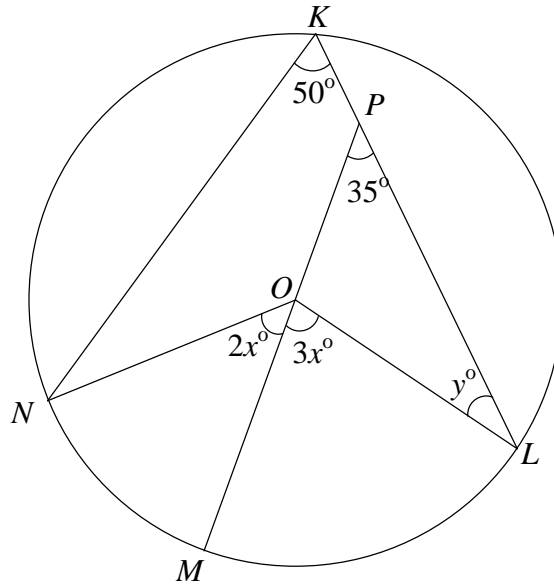


Diagram 12

Find the value of y .

- A 20
- B 25
- C 30
- D 35

30 In Diagram 13, $GHJK$ is a square and EFG is a sector of a circle with centre K .

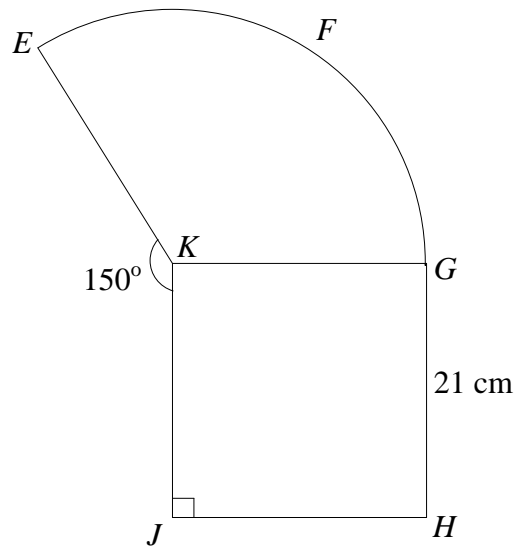


Diagram 13

Calculate the perimeter, in cm, of the whole diagram.

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

- A 107
- B 128
- C 149
- D 152

31 Diagram 14 shows a semicircle RST with centre O .

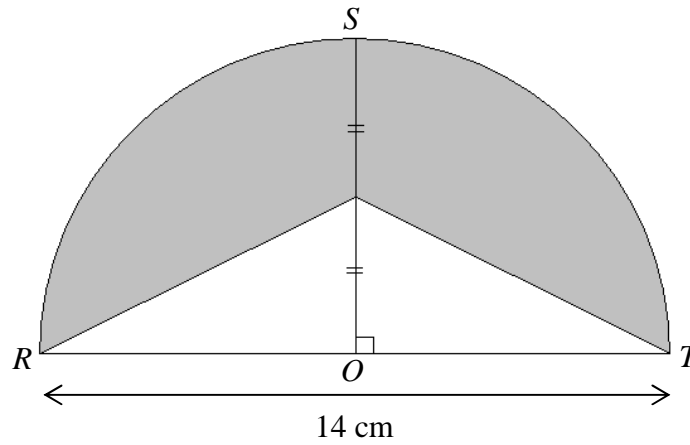


Diagram 14

Calculate the area, in cm^2 , of the shaded region.

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

- A 19.5
- B 28.0
- C 52.5
- D 77.0

32 Diagram 15 shows a circle with centre O . $POUS$ and RUT are straight lines.

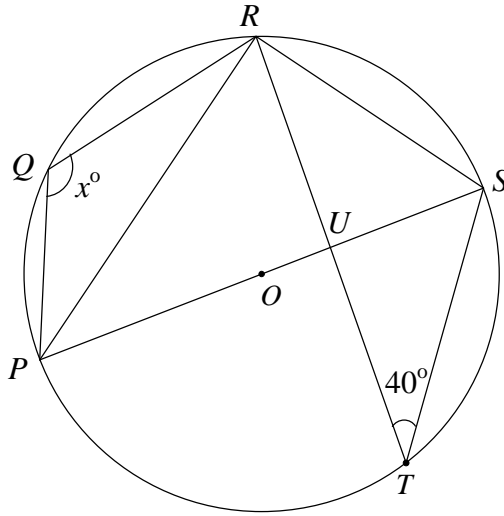


Diagram 15

Find value of x .

- A 100
- B 110
- C 130
- D 140

33 Diagram 16(i) shows a right cylinder whereas Diagram 16(ii) is its net.

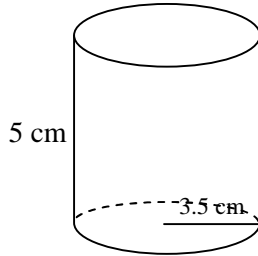


Diagram 16(i)

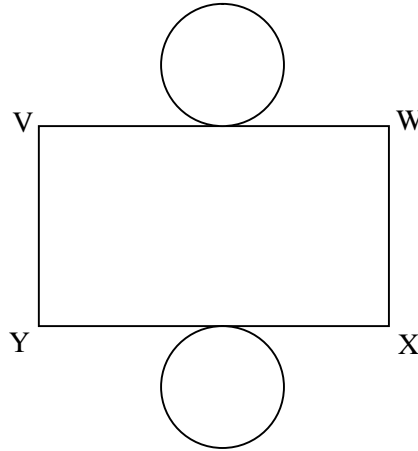


Diagram 16(ii)

Calculate the perimeter, in cm, of rectangle VWXY.

(Using $\pi = \frac{22}{7}$)

- A 24
- B 32
- C 38
- D 54

34 Diagram 17 shows an isosceles triangle PQR .

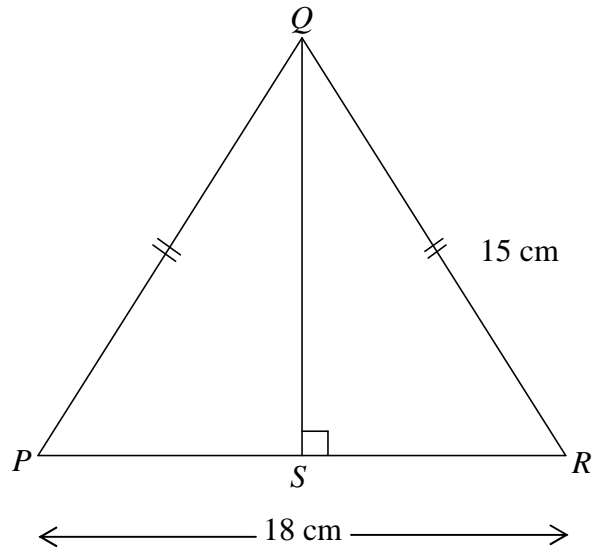


Diagram 17

Find the area, in cm^2 , of the triangle.

- A 54
- B 108
- C 135
- D 270

- 35 Table 2 shows the number of students who score A in four subjects. Given that the students who score A in English is only 15% of the total number of students taking these subjects.

Subject	Mathematics	Science	English	History
Number of Students	35	28	18	m

Table 2

Find the value of m .

- A 12
 B 15
 C 18
 D 39
- 36 Table 3 shows the number of Form 5 students who was selected from a school for *PLKN*.

Year	Tally
2004	### ## ///
2005	### //
2006	### ////
2007	### ##

Table 3

Calculate the mean of the data.

- A 3.25
 B 8.25
 C 9.75
 D 13.0

37 Diagram 18 is a bar chart which shows the type of flowers in Muliana's garden.

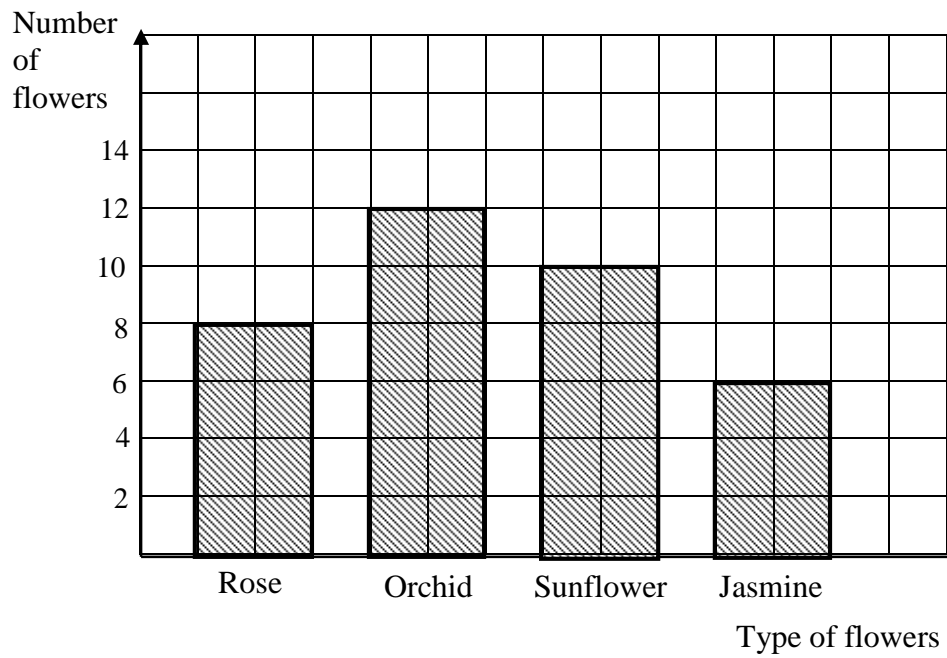
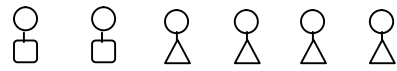
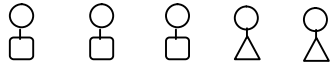


Diagram 18

If the information in the bar chart is represented in a pie chart, find the angle of Orchid.

- A 60°
- B 80°
- C 100°
- D 120°

- 38 Diagram 19 is an incomplete pictograph showing the number of Form 1 and Form 2 students. The number of Form 3 girl students is half of the total number of Form 1 and Form 2 girl students.

Form 1	
Form 2	
Form 3	

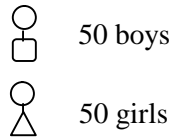


Diagram 19

If the total number of Form 3 students is 350, find the number of Form 3 boy students.

- A 200
- B 150
- C 125
- D 100

39 Diagram 20 shows the graph of a function on a Cartesian plane.

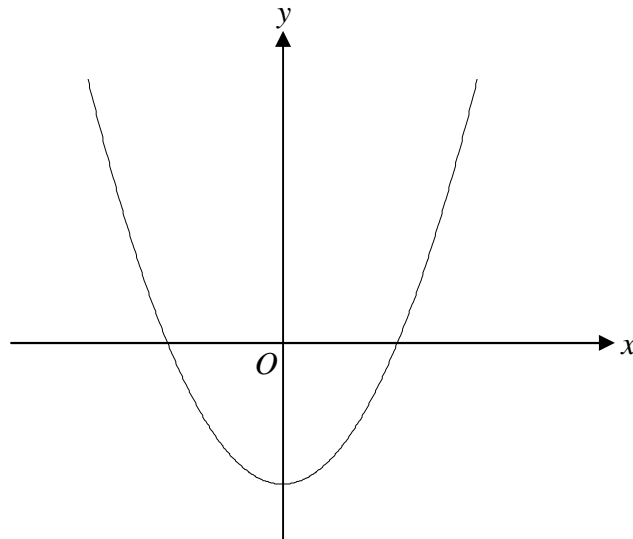


Diagram 20

The possible equation of the function is

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

40 Diagram 21 shows a graph of function $y = x^3 + 8$

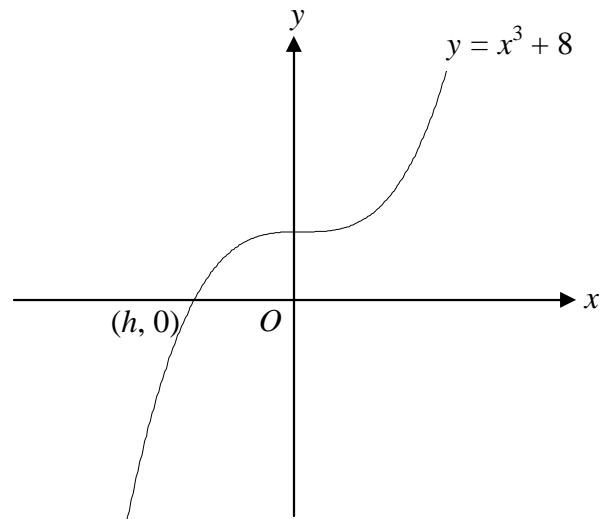


Diagram 21

Find the value of h .

- A - 8
- B - 4
- C - 3
- D - 2

END OF QUESTION PAPER