



新加坡福建会馆属下五校小六统一考试

道南·爱同·崇福·南侨·光华

SINGAPORE HOKKIEN HUAY KUAN 5-SCHOOL PRIMARY 6
COMBINED PRELIMINARY EXAMINATION

TAO NAN · AI TONG · CHONGFU · NAN CHIAU · KONG HWA

2006

数学 MATHEMATICS

BOOKLET A

Total Time For Booklets A and B: 2 hours 15 minutes

INSTRUCTIONS TO CANDIDATES

- ✓ Do not open this booklet until you are told to do so.
- ✓ Follow all instructions carefully.
- ✓ Answer all questions.

School : _____

Name : _____

Class : _____

Date : 22 August 2006

TOTAL	20
-------	----

Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each.
For each question, four options are given. One of them is the correct answer.
Make your choice (1, 2, 3 or 4). Shade the oval (1, 2, 3 or 4) on the
Optical Answer Sheet. (20 marks)

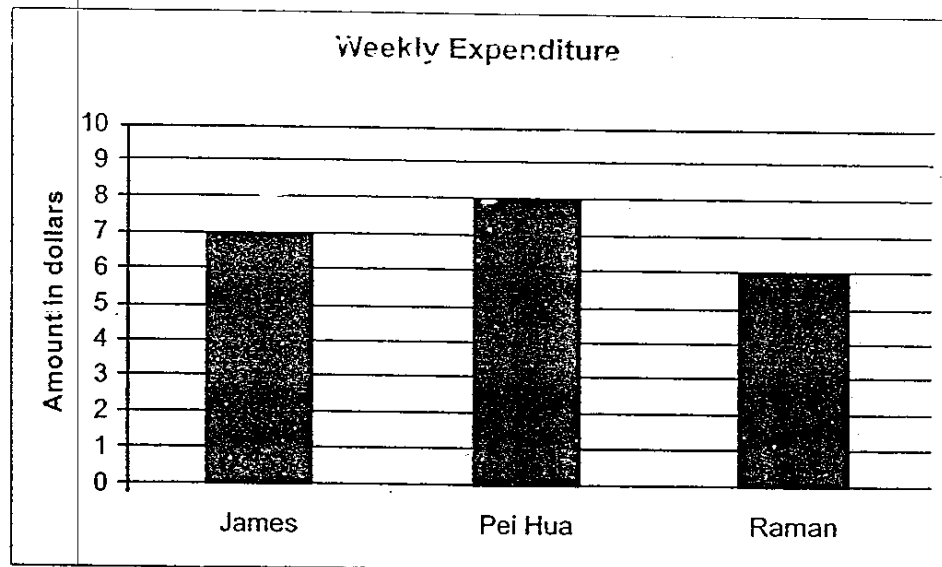
- 1 5 ones, 7 tenths and 9 thousandths is _____.
- (1) 0.579
 - (2) 5.079
 - (3) 5.709
 - (4) 5.790
- 2 Apples were sold at 5 for \$1. How much change did Mrs Tan get if she paid the cashier \$50 for 20 apples?
- (1) \$8
 - (2) \$10
 - (3) \$20
 - (4) \$46
- 3 The area of a rectangle is 48 cm^2 . The ratio of its length to its breadth is 3 : 1. Find the length of the rectangle.
- (1) 16 cm
 - (2) 12 cm
 - (3) 3 cm
 - (4) 8 cm

4. The table below shows the number of library books Primary 6M pupils borrowed last week.

Number of library books	0	1	2	3	4
Number of pupils	4	11	18	6	5

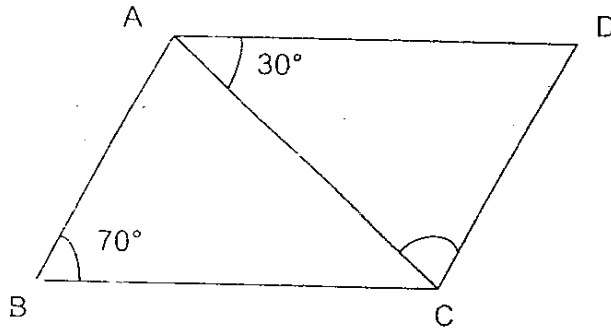
How many pupils borrowed at least 2 library books?

- (1) 18
(2) 29
(3) 33
(4) 44
5. The graph below shows the weekly expenditure of three children, James, Pei Hua and Raman. If their weekly allowance is \$10 each, what is their total savings?



- (1) \$9
(2) \$18
(3) \$21
(4) \$30

- 6 ABCD is a parallelogram. $\angle ABC = 70^\circ$ and $\angle CAD = 30^\circ$. Find $\angle ACD$.
The figure is not drawn to scale.



- (1) 60°
- (2) 70°
- (3) 80°
- (4) 90°

- 7 The table below shows the parking charges at a car park.
Find the cost of parking for $3\frac{3}{4}$ h.

1 st hour	\$0.90
Every additional $\frac{1}{2}$ h or part thereof	\$0.50

- (1) \$2.00
- (2) \$3.40
- (3) \$3.60
- (4) \$3.90

8 Marcus spent 40% of his money on a badminton racket and 25% of the remainder on a book. What fraction of his money was left?

(1) $\frac{3}{20}$

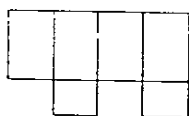
(2) $\frac{7}{20}$

(3) $\frac{9}{20}$

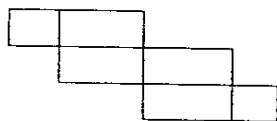
(4) $\frac{13}{20}$

9 Which of the following can be folded to form a cuboid?

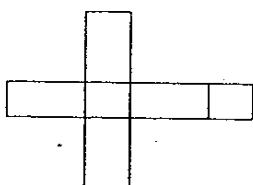
(1)



(2)



(3)



(4)



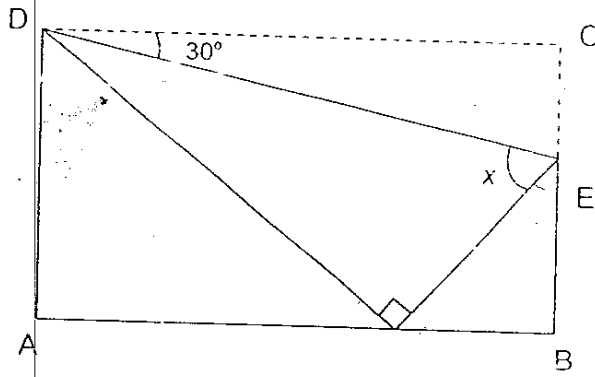
10 A book and a pencil case cost $\$2x$. If the book cost $\$11$, find the cost of the pencil case.

- (1) $\$11x$
- (2) $\$22x$
- (3) $\$(2x + 11)$
- (4) $\$(2x - 11)$

11 $\frac{1}{3}$ of a cup is filled with orange juice. The orange juice is then poured into an empty jug which has a volume four times that of a cup. What fraction of the jug is filled with orange juice?

- (1) $\frac{1}{12}$
- (2) $\frac{1}{6}$
- (3) $1\frac{5}{6}$
- (4) $2\frac{2}{3}$

- 12 The figure, not drawn to scale, shows a rectangle ABCD being folded along DE. Given that $\angle CDE = 30^\circ$, find $\angle x$.



- (1) 15°
(2) 30°
(3) 45°
(4) 60°
- 13 The Mathematics test scores for three girls are 55, 85 and 60 respectively. If the average score of Gopal and the three girls is 70, what is the Mathematics test score of Gopal?
- (1) 45
(2) 60
(3) 80
(4) 95

14 The ratio of Ali's stickers to Dominic's stickers is 3 : 4. The ratio of Ali's stickers to Dominic's and Wayne's stickers is 1 : 5. What is the ratio of Ali's stickers to Dominic's to Wayne's stickers?

(1) 1 : 4 : 5

(2) 3 : 4 : 5

(3) 3 : 4 : 11

(4) 3 : 4 : 15

15 Rosna bought 7 goldfish. Wei Li bought q more goldfish than Rosna. How many goldfish did they buy altogether?

(1) $q + 7$

(2) $q + 14$

(3) $2q + 7$

(4) $4q + 14$



新加坡福建会馆属下五校小六统一考试

道南·爱同·崇福·南侨·光华

SINGAPORE HOKKIEN HUAY KUAN 5-SCHOOL PRIMARY 6
COMBINED PRELIMINARY EXAMINATION

TAO NAN · AI TONG · CHONGFU · NAN CHIAU · KONG HWA

2006

数学 MATHEMATICS

BOOKLET B

Total Time For Booklets A and B: 2 hours 15 minutes

INSTRUCTIONS TO CANDIDATES

- ✓ Do not open this booklet until you are told to do so.
- ✓ Follow all instructions carefully.
- ✓ Answer all questions.

School : _____

Name : _____

Class : _____

Date : 22 August 2006

TOTAL	80
-------	----

Questions 16 to 25 carry 1 mark each. Write your answers in the spaces provided.
For questions which require units, give your answers in the units stated. (10 marks)

16 Write sixty-nine thousand and eleven in figures.

Ans: _____

17 Find the value of $\frac{7}{9} \div 21$.

Ans: _____

18 Express $5\frac{1}{4}$ as a decimal.

Ans: _____

19 Sally spent $2\frac{1}{5}$ h doing her Social Studies project. Express the time she spent doing her project in minutes.

Ans: _____ min

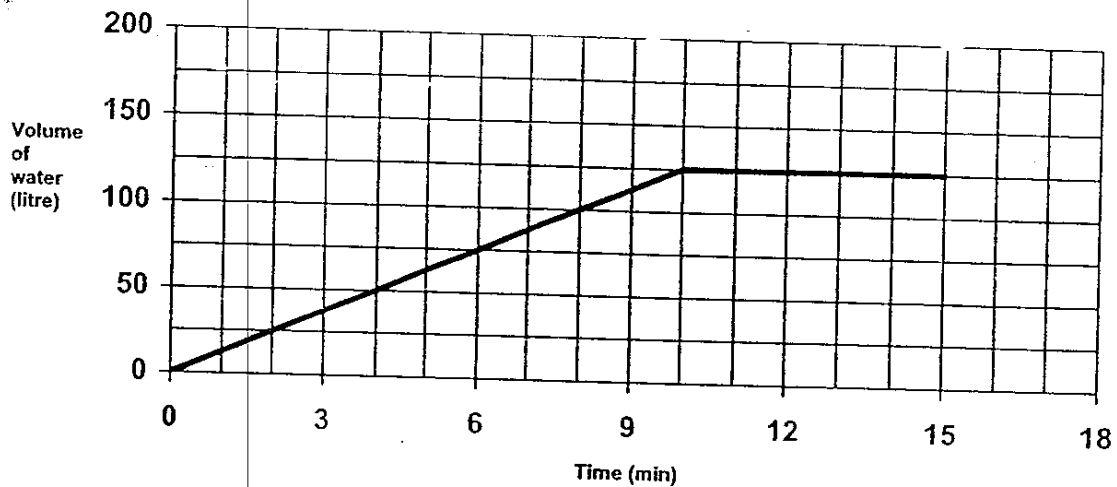
20 A machine packs 36 packets of peanuts in 12 seconds. At this rate, how many packets of peanuts can it pack in 1 minute?

Ans: _____

21 A rectangular block of wood measures 30 cm by 12 cm by 10 cm. David wants to cut out as many 3-cm cubes as possible from it. How many such cubes can he cut?

Ans: _____

22 A tap was turned on to fill a tank with water to its brim. The line graph shows the volume of water in the tank at regular intervals of time.



How long did it take to fill the tank to its brim?

Ans: _____ min

23 $\frac{2}{3}$ of a number is 16. What is $2\frac{1}{2}$ times the number?

Ans: _____

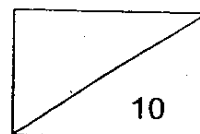
24 In a hall, there are 450 chairs. Four out of every five chairs are occupied. How many chairs are occupied?

Ans: _____

25 What is the sum of $12 + 4r$ and $16 - 2r$?

Ans: _____

Total mark for questions 16 to 25

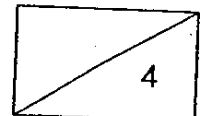
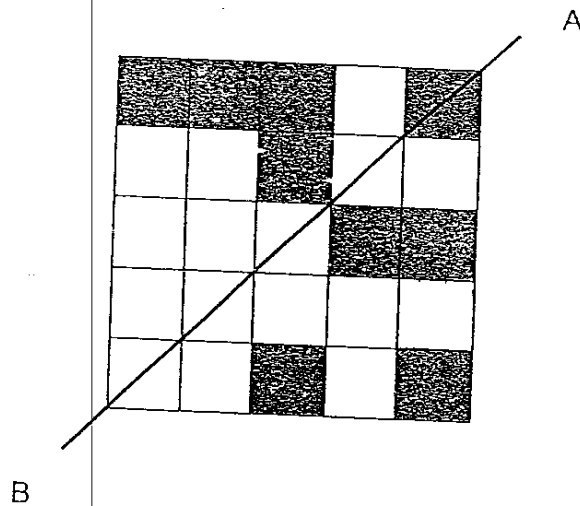


Questions 26 to 35 carry 2 marks each. Show your working clearly in the space below each question and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (20 marks)

- 26 Use all the digits 4, 2, 1 and 6 to form the largest four-digit whole number that is divisible by 7.

Ans: _____

- 27 Shade two more unit squares to make the figure below symmetrical about the line AB.



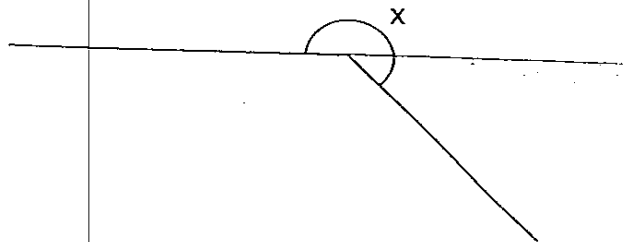
28 Write down the fraction exactly halfway between $\frac{2}{9}$ and $\frac{3}{9}$, in its simplest form.

Ans: _____

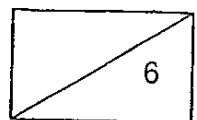
29 The ratio of Siti's cards to Jiaming's cards was 4 : 9. If Jiaming gave away $\frac{1}{2}$ of his cards, what would the ratio of Siti's cards to Jiaming's cards be?

Ans: _____

30 Measure and write down the size of $\angle x$.



Ans: _____ °



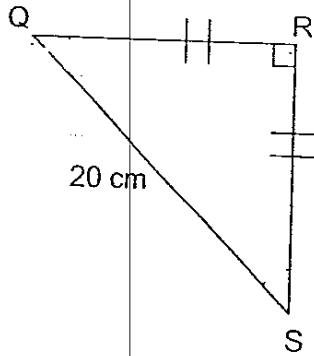
- 31 The timetable below shows when the bus departs from Orchard Hotel and arrives at the airport.

Departure from Hotel	Arrival at Airport
1305	1350
1340	1425
1415	1500
1440	1525
1515	1600

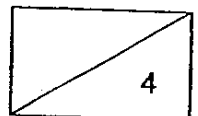
Mr Robinson wanted to take the 1305 bus from the hotel but he was 50 minutes late. What would be the earliest time he could reach the airport if he were to take the next available bus?

Ans: _____ p.m.

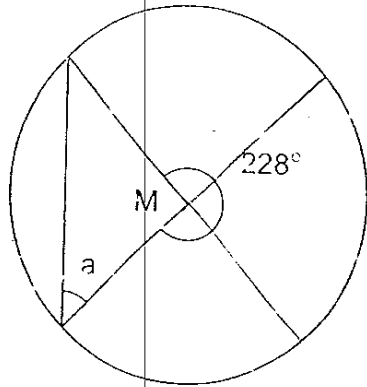
- 32 QRS is an isosceles triangle. If $QS = 20$ cm, find the area of the triangle.



Ans: _____ cm^2



- 33 In the figure, not drawn to scale, M is the centre of the circle.
What is the value of $\angle a$?



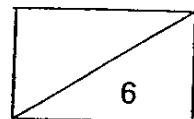
Ans: _____°

- 34 A motorist started his journey at 10.45 a.m. He reached his destination at 11.30 a.m. How far did he travel if his average speed was 80 km/h?

Ans: _____ km

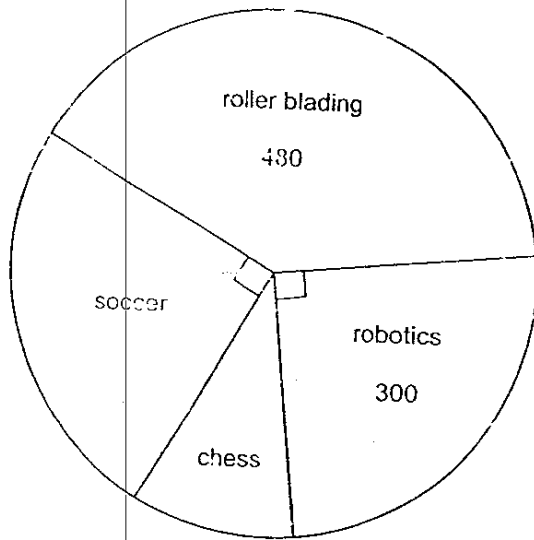
- 35 25% of Ramu's stamps were Malaysia stamps, 40% of them were Singapore stamps and the rest were China stamps. If he had 40 more Singapore stamps than China stamps, how many Malaysia stamps did he have?

Ans: _____



For questions 36 to 48, show your working clearly in the space provided for each question and write your answers in the spaces provided.
 The number of marks available is shown in brackets [] at the end of each question or part-question.
 (50 marks)

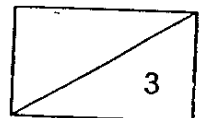
36 The pie chart below shows the number of pupils who are interested in the respective Co-curricular Activities in a school.



- (a) What percentage of the total number of pupils is interested in roller blading?
- (b) What is the ratio of the number of pupils who are interested in robotics to those who are interested in chess?

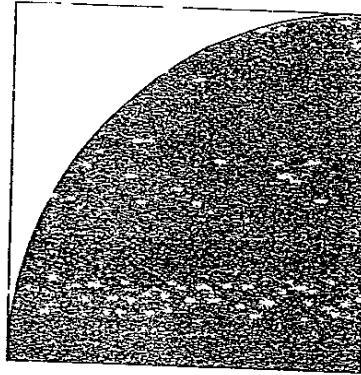
Ans: (a) _____ [1]

(b) _____ [2]



- 37 The shaded part of the square is a quarter circle. If the area of the square is 36 cm^2 , find the area of the quarter circle. (Take $\pi = 3.14$)

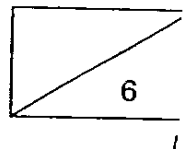
(Give your answer correct to 1 decimal place)



Ans: _____ [3]

- 38 In 2004, the number of male monkeys to the number of female monkeys in a zoo was $1 : 2$. In 2005, 35 monkeys were added to the zoo. As a result, the number of male monkeys was 4 times as many as in 2004 and the number of female monkeys was 3 times as many as in 2004. How many monkeys were there altogether in 2004?

Ans: _____ [3]

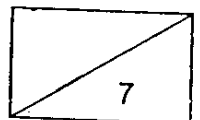


- 39 A large piece of construction paper is cut in half and one piece is placed on top of the other. These two pieces are cut in half and all pieces are placed in a pile. The process is continued. After the pieces have been cut and piled for the tenth time, how many pieces of paper are there in the pile?

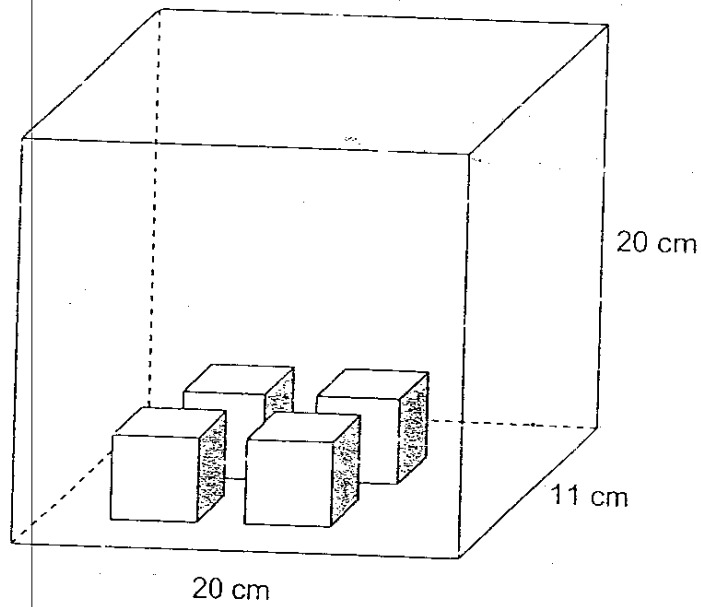
Ans: _____ [3]

- 40 Mrs Singh is 30 years old now. Ranjit is $\frac{1}{15}$ of her age. In how many years' time will Mrs Singh be thrice Ranjit's age?

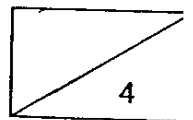
Ans: _____ [4]



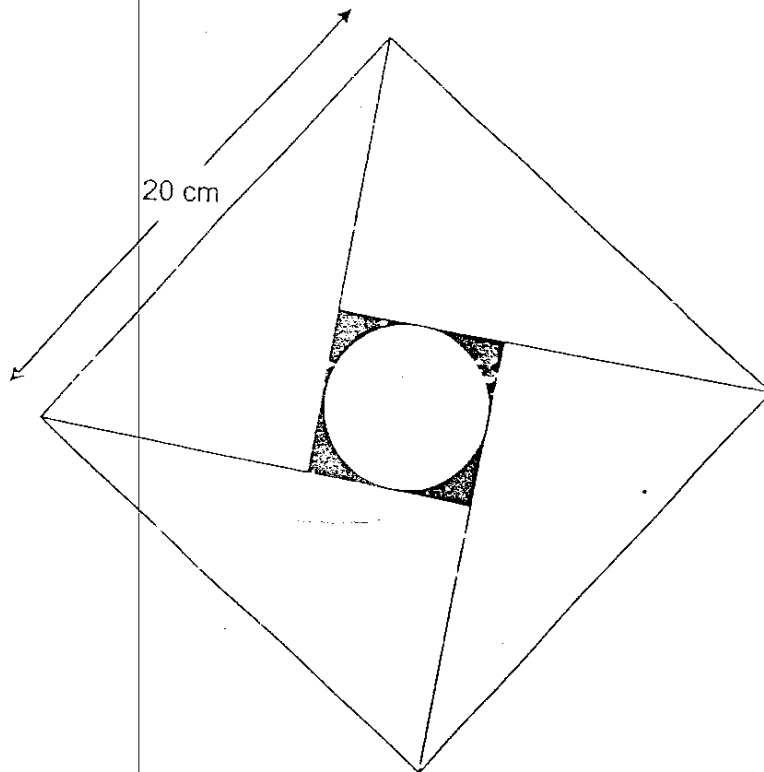
- 41 4 metal cubes of edge 5 cm are placed in an empty rectangular tank measuring 20 cm by 11 cm by 20 cm. The tank is to be filled with water flowing from a tap at a rate of 6 litres per minute. How long will it take to fill up the tank? (1 litre = 1 000 cm³)



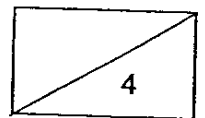
Ans: _____ [4]



- 42 The figure shows four identical triangles, each of area 91 cm^2 , arranged to form a big and a small square. A circle lies within the small square. Find the area of the shaded part. (Take $\pi = 3.14$)



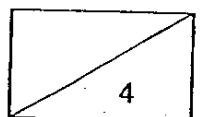
Ans: _____ [4]



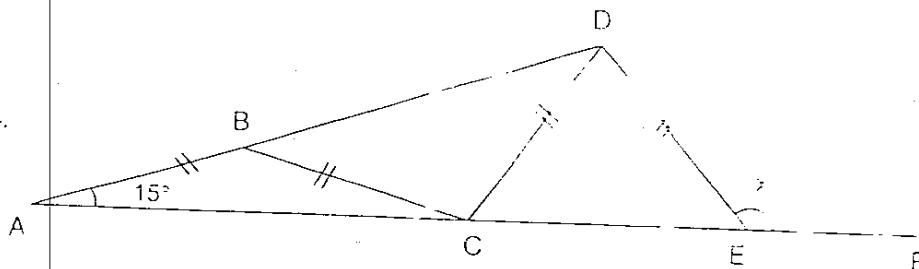
- 43 There were more than 20 children at Mr Tan's party. When Mr Tan tried to divide the children into 5 equal groups, the last group was short of 2 children. When he tried to divide them into 7 equal groups, the last group was short of 4 children. How many children were at the party?

(Write down the smallest possible number.)

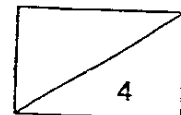
Ans: _____ [4]



- 44 In the figure below, not drawn to scale, both ABD and $ACEF$ are straight lines. $\angle BAC = 15^\circ$ and $AB = BC = CD = DE$. Find $\angle x$.



Ans: _____ [4]



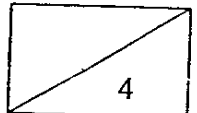
45 Town A and Town B are 435 km apart. At 9.15 a.m., a car left Town A and travelled towards Town B at a constant speed of 80 km/h. At the same time, a lorry left Town B and travelled towards Town A at a constant speed. When they met, the car had travelled a distance of 240 km.

(a) At what time did the two vehicles meet?

(b) Find the speed of the lorry.

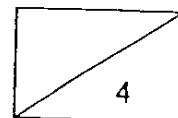
Ans: (a) _____ [2]

(b) _____ [2]



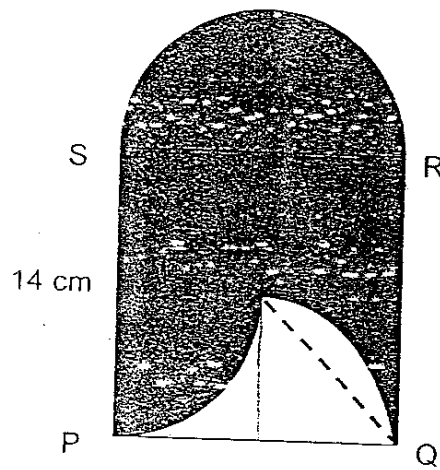
- 46 There were 80 members in the Gymnastics club. 30% of them were girls. When some girls left the club, the percentage of the girls dropped to 20%. How many girls left the club?

Ans: _____ [4]



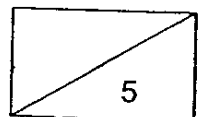
- 47 PQRS is a square of sides 14 cm. A semicircle sits on top of the square. PO and OQ are two equal quarter arcs. (Take $\pi = \frac{22}{7}$)

- (a) Find the total shaded area of the figure.
 (b) Find the perimeter of the shaded figure.

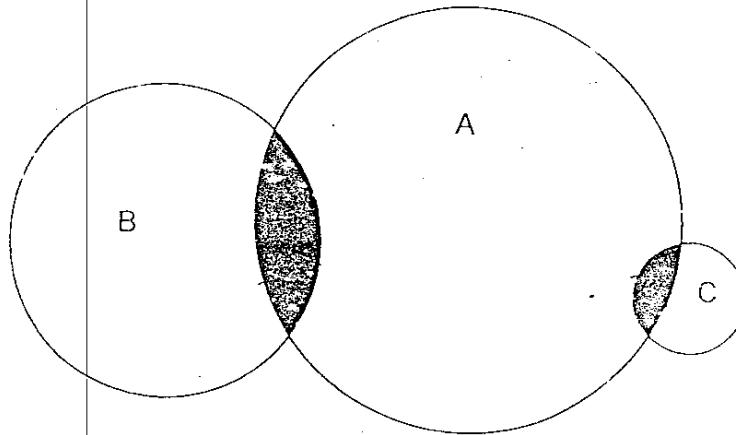


Ans: (a) _____ [3]

(b) _____ [2]

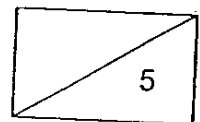


- 48 The diagram below shows 3 circles, A, B and C, overlapping one another. The total area of B and C is $\frac{4}{5}$ that of A. Given that $\frac{1}{6}$ of A is shaded, $\frac{1}{5}$ of B is shaded and $\frac{1}{3}$ of C is shaded, find the ratio of the area of A to the area of B to the area of C.



Ans: _____ [5]

End of Paper



27

Answer Sheets

Q1	Q2	Q3	Q4	Q5
3	4	2	2	1
Q6	Q7	Q8	Q9	Q10
3	4	3	3	4
Q11	Q12	Q13	Q14	Q15
1	4	3	3	2

- | | |
|----------------------------|-----------------|
| 16. 69011 | 21. 120 cubes |
| 17. $\frac{1}{27}$ | 22. 10 minutes |
| 18. 5.25 | 23. 60 |
| 19. 132 minutes | 24. 360 chairs |
| 20. 180 packets of peanuts | 25. $(28 + 2r)$ |

26.	<u>6414</u>	27.	
28.	$\frac{2}{9} = \frac{4}{18} \quad \frac{3}{9} = \frac{6}{18}$ $= \frac{5}{18} \text{ (Ans)}$	29.	<p>S : J</p> <p>4 : 9</p> <p>8 : 18 (-9)</p> <p><u>8 : 9 (Ans)</u></p>
30.	<u>223° (Ans)</u>	31.	<u>3 pm (Ans)</u>

32.	$20 \times 20 = 400$ $= 400 \div 4 = 100\text{cm}^2$		33.	24°			
34..	60km		35.	$25\% = \text{Malaysia}$ $40\% = \text{Singapore}$ $35\% = \text{China}$ $(100 - 25 - 40)\% = 35\%$ $(40 - 35)\% = 5\%$ $5\% = 40$ $25\% = \underline{200} \text{ (Ans)}$			
36a.	$300 \times 4 = 1200$ $\frac{480}{1200} \times 100 = 40$ It is 40%		37.	$\sqrt[3]{36} = 6\text{cm}$ $6 \times 6 \times 3.14 \times \frac{1}{4} = 28.26$ ≈ 28.3 It is <u>28.3cm²</u> (Ans)			
36b.	$1200 - 300 - 300 - 480 = 120$ $300 : 120 = \underline{5 : 2} \text{ (Ans)}$		38.	$1^{\text{st}} \text{ time} = 1 \times 2 = 2$ $2^{\text{nd}} \text{ time} = 2 \times 2 = 4$ $3^{\text{rd}} \text{ time} = 4 \times 2 = 8$ $10^{\text{th}} \text{ time} = 512 \times 2 = 1024$ In the 10 th time, there are <u>1024 pieces of paper.</u> (Ans)			
40.	$\frac{1}{15} \times 30 = 2$ $30 - 2 = 28$ S <table border="1" style="display: inline-table; vertical-align: middle;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr></table> 28 $28 \div 2 = 14$ $14 - 2 = \underline{12} \text{ (Ans)}$ In 12 years time, Mrs Singh will be thrice of Ranjit's age.				$\frac{2005}{M : F}$ $4 : 6$ $(4 - 6) + (6 - 2) = 7u$ $7u = 35$ $1u = 5$ $3u = 15$ There were <u>15 monkeys</u> in 2004 (Ans)	41.	$5^3\text{cm} = 125\text{cm}^3$ $125 \times 4 = 500\text{cm}^3$ $20 \times 11 \times 20 = 4400\text{cm}^3$ $= 4400 - 500 = 3900\text{cm}^3$ $= \frac{3900}{6000}$ $= \underline{0.65 \text{ minutes}} \text{ (Ans)}$

42.	$20 \times 20 = 400$ $= 400 - (91 \times 4) = 36$ $\sqrt[2]{36} = 6\text{cm}$ $6 \div 2 = 3$ $3 \times 3 \times 3.14 = 28.26$ $= 36 - 28.26 = 7.74$ It is <u>7.74cm²</u> (Ans)	43. <p>Multiples of 5 minus 2 (above 20) $(25 - 2) \quad (30 - 2) \quad (35 - 2) \quad (40 - 2)$ $= 23 \quad 28 \quad 33 \quad 38$</p> <p>Multiples of 7 minus 4 (above 20) $(28 - 4) \quad (35 - 4) \quad (42 - 4)$ $= 24 \quad 31 \quad 38$</p>
44.	$180^\circ - 15^\circ - 15^\circ = 150^\circ$ $180^\circ - 150^\circ = 30^\circ$ $180^\circ - 30^\circ - 30^\circ = 120^\circ$ $180^\circ - 15^\circ - 120^\circ = 45^\circ$ $180^\circ - 45^\circ = 135^\circ$ $\angle x$ is <u>135^o</u> (Ans)	45a. <p>$240 \div 80 = 3\text{hours}$ $9.15\text{am} + 3\text{hours} = 12.15\text{pm}$ At 12.15pm the two vehicles met.</p> 45b. <p>$435 - 240 = 195$ $3\text{hours} = 195$ $1\text{hour} = 65$ Its speed is <u>65km/h</u> (Ans)</p>
46.	$(100 - 30)\% = 70\%$ $70\% \times 80 = 56\text{ boys}$ $= 80 - 56$ $= 24\text{ girls}$ $(100 - 20)\% = 80\%$ $80\% = 56$ $20\% \times 70 = 14$ $= 24 - 14$ $= 10$ <u>10 girls</u> left the club. (Ans)	47a. <p>$\frac{3}{4} \times 14 \times 14 = 147$ $14 \div 2 = 7$ $\frac{1}{2} \times 7 \times 7 \times \frac{22}{7} = 77$ $77 + 147 = 224$ It is <u>224cm²</u></p> 47b. <p>$\frac{1}{2} \times 14 \times \frac{22}{7} = 22$ $14 \times \frac{22}{7} \times \frac{1}{4} = 11$ $11 + 11 + 14 + 14 + 22 = 72\text{cm}$ It is <u>72cm</u> (Ans)</p>

48.

$$B + C = 40$$

$$A = 5u$$

$$C = xu$$

$$B = (4 - x)u$$

$$\text{Shaded A} = \frac{1}{6} \times 5u = \frac{5}{6}u$$

$$\text{Shaded B} = \frac{1}{5}(4 - x)u$$

$$\text{Shaded C} = \frac{1}{3}xu$$

$$\frac{1}{5}(4 - x) + \frac{1}{3}x = \frac{5}{6}$$

$$\frac{4}{5} - \frac{1}{5}x + \frac{1}{3}x = \frac{5}{6}$$

$$\frac{1}{3}x - \frac{1}{5}x = \frac{5}{6} - \frac{4}{5}$$

$$\frac{10}{30}x - \frac{6}{30}x = \frac{25}{30} - \frac{24}{30}$$

$$\frac{4}{30}x = \frac{1}{30}$$

$$x = \frac{1}{30} \times \frac{30}{4}$$

$$= \frac{1}{4}u$$

$$C = x = \frac{1}{4}u$$

$$B = (4 - x)u$$

$$= 3\frac{3}{4}u$$

A	:	B	:	C
5	:	$3\frac{3}{4}$:	$\frac{1}{4}$
5	:	$\frac{15}{4}$:	$\frac{1}{4}$
20	:	15	:	1 (Ans)