



RAFFLES GIRLS' PRIMARY SCHOOL

PRELIMINARY EXAMINATION

2004

Name : _____ Class: P6 _____ Index No: _____

24 August 2004 **MATHEMATICS** ATT: 2 h 15 min

Your Score Out of 100 marks	
	Class Level
Highest score	
Average score	
Parent's Signature	

Booklet A1 (25 marks)

Questions 1 to 5 carry 1 mark each.

Questions 6 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) and shade the correct oval on the Optical Answer Sheet.

1. Arrange the following numbers in ascending order.

987 798, 897 787, 879 879, 978 989

- (1) 879 879, 897 787, 978 989, 987 798
- (2) 879 879, 897 787, 987 798, 978 989
- (3) 978 989, 987 798, 897 787, 879 879
- (4) 987 798, 978 989, 897 787, 879 879

()

2. What is the missing number in the box?

$$1\frac{2}{5} + 1\frac{2}{5} + 1\frac{2}{5} + 1\frac{2}{5} = \square \times \frac{7}{5} + 1\frac{2}{5}$$

- (1) 21
- (2) 2
- (3) 3
- (4) 4

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3. Round off 68.099 to the nearest hundredth.

- (1) 68.09
- (2) 68.10
- (3) 68.1
- (4) 69.10

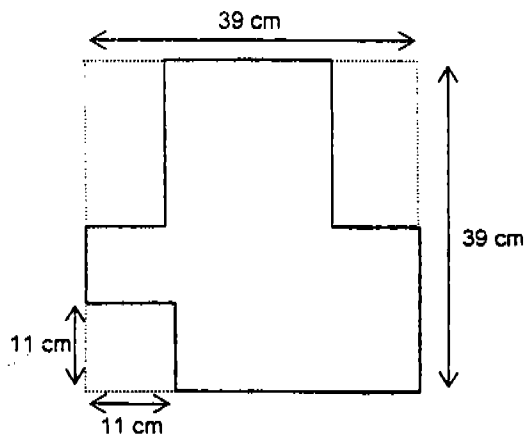
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4. What is ten times the length of $\frac{3}{5}$ metre?

- (1) 6 cm
- (2) 60 cm
- (3) 600 cm
- (4) 6000 cm

()

5. Find the perimeter of the shaded figure.



- (1) 117 cm
- (2) 128 cm
- (3) 134 cm
- (4) 156 cm

()

6. Which of the following is incorrect?

(1) $\frac{1}{9} < \frac{1}{8}$

(2) $\frac{3}{4} < \frac{5}{7}$

(3) $\frac{3}{5} > \frac{4}{8}$

(4) $\frac{1}{2} > \frac{1}{6}$

()

7. Jonathan bought 4 blue pencils at 40 cents each and a red pencil at 50 cents. Find the average cost of the pencils that Jonathan bought.

(1) 40 cents

(2) 42 cents

(3) 45 cents

(4) 50 cents

()

8. The average of three numbers is $7x$. One number is $2x$ and another number is 8. Express the third number in terms of x .

(1) $19x - 8$

(2) $21x - 8$

(3) $5x - 8$

(4) $9x + 8$

()

9. $\frac{2}{5}$ of the pupils in a school wear spectacles. Express as a percentage, pupils in the school who do not wear spectacles?

(1) 20 %

(2) 40 %

(3) 60 %

(4) 70 %

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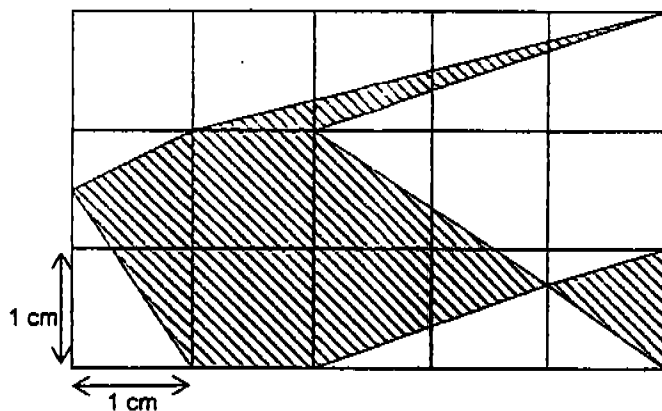
10. This table shows a part of the television programme planned for Tuesday.

6.45 p.m.	Cartoon Capers
7.10 p.m.	Movie
9.00 p.m.	News in Brief

However, the movie actually took 13 minutes longer to end than planned. How long did the movie last?

- (1) 1 h 50 min
 (2) 1 h 53 min
 (3) 2 h 3 min
 (4) 2 h 13 min ()

11. Part of a fish is shown in the square grid below. Find the area of the shaded part of the fish.



- (1) 5.0 cm^2
 (2) 5.5 cm^2
 (3) 6.0 cm^2
 (4) 6.5 cm^2 ()

12. The table below shows how Raju spent his pocket money last week.

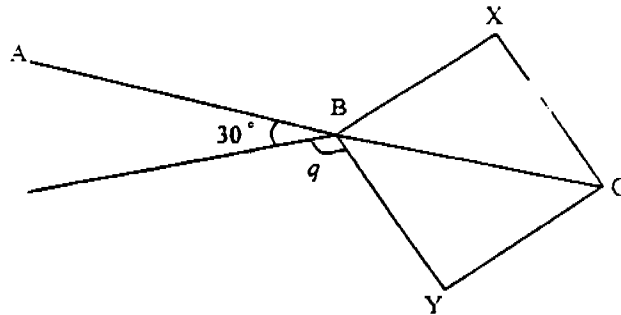
Expenditure	Book	Pen	Toy	Food
Amount (\$)	12	4	10	?

Raju spent 25% of his pocket money on the book and the toy.
How much was his pocket money?

- (1) \$22
- (2) \$26
- (3) \$74
- (4) \$88

()

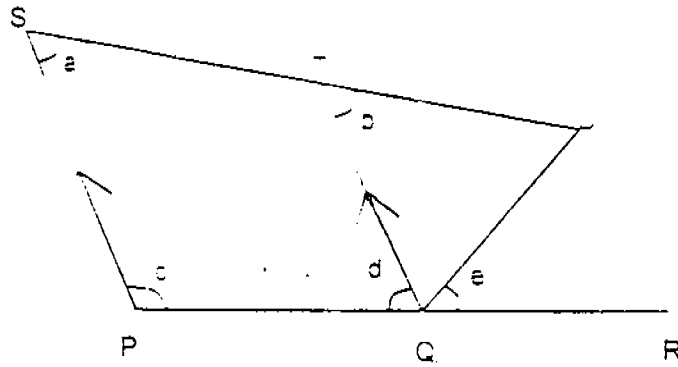
13. In the figure below, not drawn to scale, ABC is a straight line and BXC Y is a square. Find $\angle q$.



- (1) 75°
- (2) 105°
- (3) 120°
- (4) 135°

()

14. The figure below is not drawn to scale. SP is parallel to TQ. PQR and STU are straight lines. Which one of the following statements is true?



- (1) $\angle a - \angle b = 180^\circ$
 (2) $\angle a - \angle c = 180^\circ$
 (3) $\angle b - \angle e = 180^\circ$
 (4) $\angle c - \angle d = 180^\circ$

()

15. Jane bought half a dozen stalks of roses for \$7.
 Find the cost of 9 stalks of roses.

- (1) \$ 5.25
 (2) \$ 6.30
 (3) \$ 10.50
 (4) \$ 31.50

()

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Booklet A2 (20 marks)

Questions 16 to 35 carry 1 mark each.

Write your answer in the space provided.

Give your answer in the units stated.

16. Find the value of $(36 + 8 \times 2) + 36 \div 4$.

Ans: _____

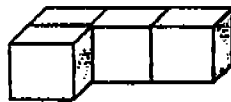
17. Express $\frac{25}{7}$ as a mixed number.

Ans: _____

18. Find the value of $7 + \frac{4}{5}$
Write your answer as a decimal.

Ans: _____

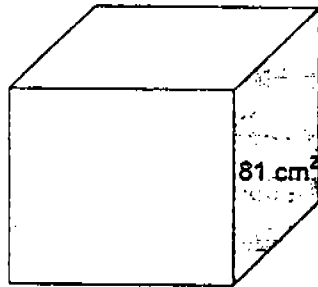
19.



All the cubes that make up this solid are identical and they add up to a total volume of 108 cm^3 . Find the length of each cube.

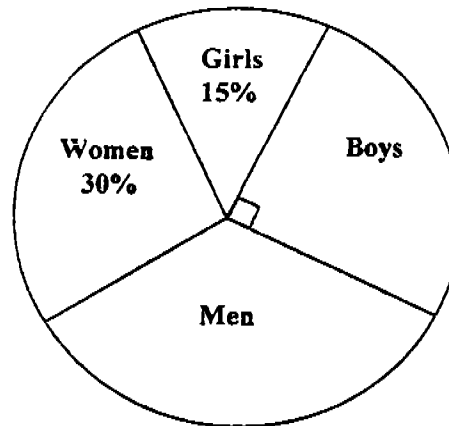
Ans: _____ cm

- 20 The area of one face of the cube is 81 cm^2 . What is the volume of the cube?



Ans: _____ cm^3

21. The pie chart below shows the percentage of men, women, girls and boys who took part in a sports carnival.



What percentage of those who took part in the carnival were men?

Ans: _____ %

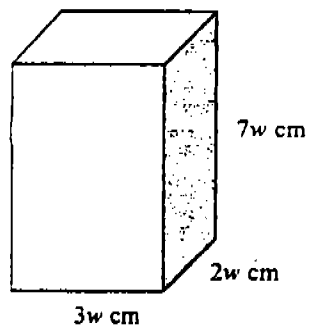
24. My father's car travels 17 km on 1 litre of petrol.
At this rate, how much petrol will be needed for the car to travel 187 km ?

Ans: _____ litres

25. John's savings is three times Mary's savings but is only $\frac{3}{5}$ Eric's savings.
What is the ratio of John's savings to Mary's savings to Eric's savings?

Ans: _____

26. Find the volume of the box below given that $w = 6$.



Ans: _____ cm^3

27. A car costing \$ 120 000 was sold for \$ 96 000.
What percentage of the original cost was the selling price?

Ans: _____ %

28. Mr. Zafar is less than 60 years old now. His present age is a multiple of 9.
Last year, his age was a multiple of 5. How old is he now?

Ans: _____ years old

29. Given that $10\ 800 + 3\ 300 = 14\ 100$

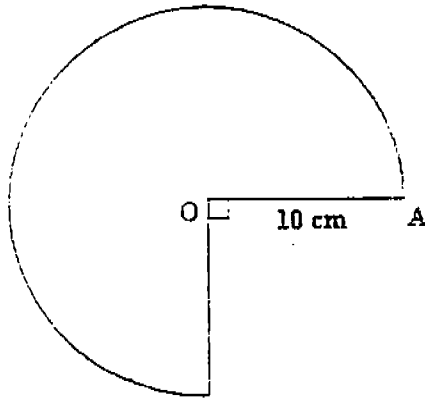
Then $10.8 + \square = 14.1$

Ans: _____

30. Find the total weight of 750g of meat and 5 mangoes if each mango has an average weight of 0.42 kg
Correct your answer to one decimal place.

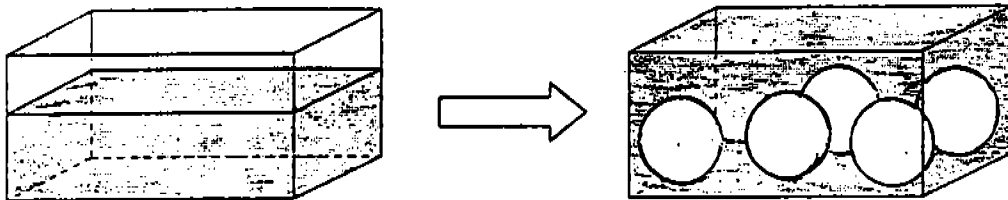
Ans: _____ kg

31. The figure below shows $\frac{3}{4}$ of a circle with O as its centre and AO its radius. Find the perimeter of the figure below in terms of π .



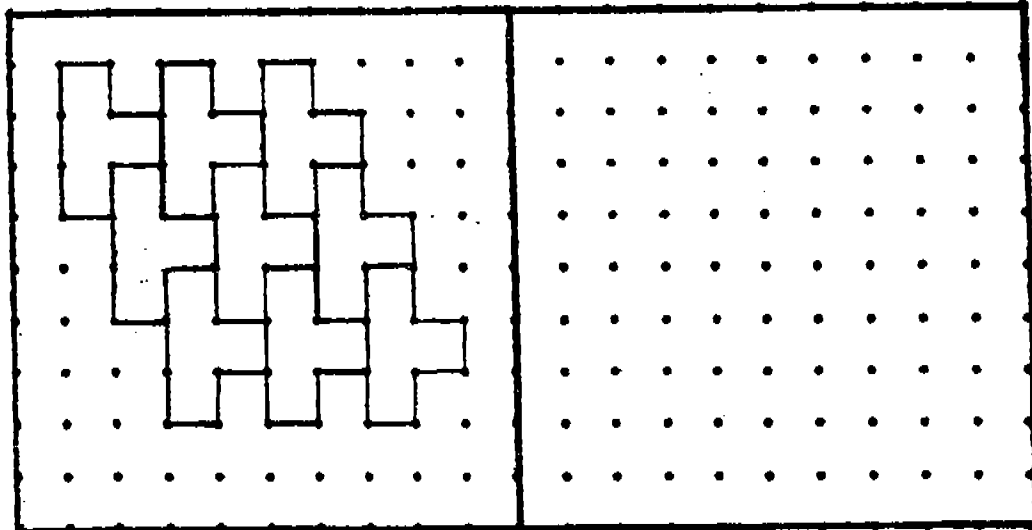
Ans: _____ cm

32. A rectangular tank measuring 60 cm by 50 cm by 40 cm is $\frac{2}{3}$ filled with water. Petra put 5 similar iron balls into the tank such that the water-level reaches the brim of the tank. Find the volume of each iron ball.



Ans: _____ cm^3

33. Identify the unit shape in the given tessellation. Use the same unit shape to show a different way of tessellating.



Tessellation A

Tessellation B

34. Mr Tay drove at an average speed of 92 km/h.
How far would he have travelled in 15 minutes?

Ans: _____ km

35. 40% of the pupils in 6A are girls. If there were 18 boys, how many pupils were there in the class?

Ans: _____ pupils

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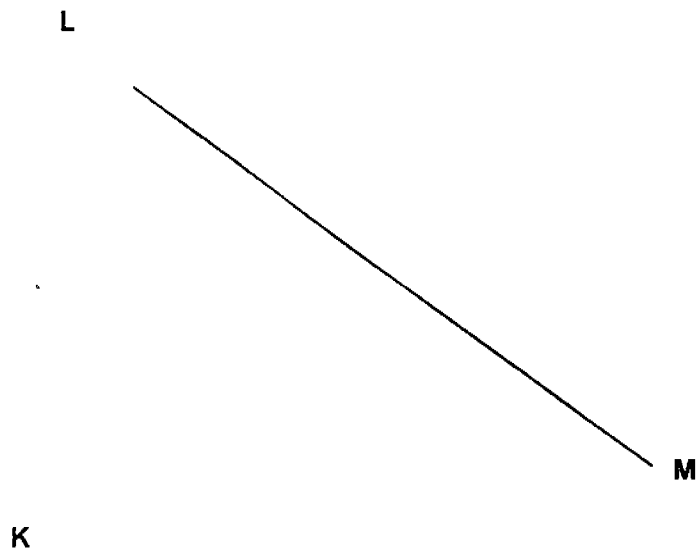
Booklet B (55 marks)

For Q36 to Q50, show your working clearly in the space below each question and write your answers in the spaces provided.

The number of marks available is shown in the brackets [] at the end of each question or part question.

36. In the figure, LM is a straight line.

Construct a line perpendicular to LM passing through point K. [2]



- 37 The water rates of PUB charges for domestic users are given below:

First 20 m ³	80 cents per m ³
Next 20 m ³	90 cents per m ³
Above 40 m ³	130 cents per m ³

Mrs Lau's family used 47 m³ of water in June.
How much did she pay for her water bill?

Ans: \$ _____ [2]

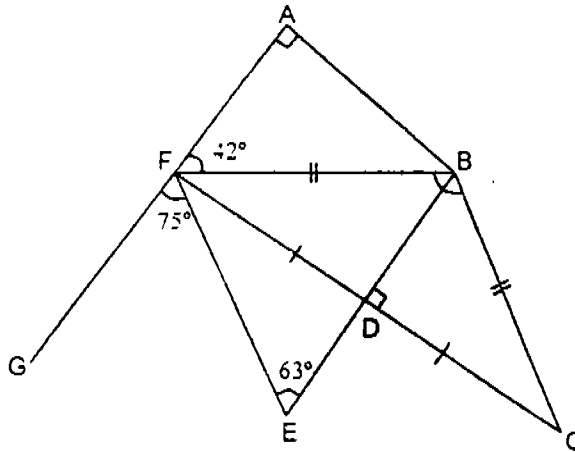
38. Mrs Chew had 20 large-sized carrots. If 4 of the carrots could make 3 glasses of carrot juice, how many glasses of the juice could she make with all the 20 carrots?

Ans: _____ [2]

39. Jim has a total of \$27.50 in coins.
If there are 13 more fifty-cent coins than ten-cent coins, how many fifty-cent coins does Jim have?

Ans: _____ [2]

40. In the figure below, BA is perpendicular to AG and BD is perpendicular to FC. AG and BE are straight lines. $FD = DC$ and $FB = BC$, find $\angle FBC$.



Ans: _____ [3]

41. k people hired a van for an excursion. The transport company charged a fixed amount of \$34 and an extra \$9 for each person.
- (a) Find in terms of k , the cost of hiring the van.
- (b) Mr Wee booked the van for the group and paid \$150. How much change would he receive given that $k = 11$.

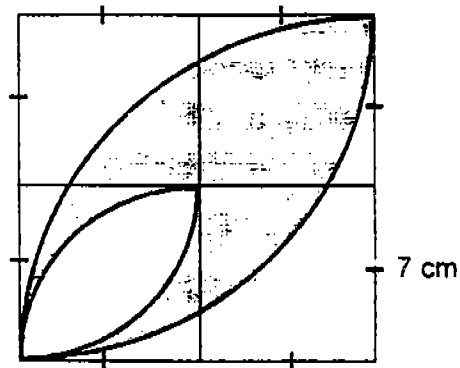
Ans: (a) _____ [1]
 (b) _____ [2]

42. Jennifer spent $\frac{1}{3}$ of her money on a watch. Her mother gave her \$12 more.
Jennifer later spent $\frac{1}{3}$ of what she had on a dress.
After all her shopping, Jennifer had \$57 left.

- (a) Find the cost of the dress.
(b) How much money did Jennifer have at first?

Ans: (a) _____ [2]
(b) _____ [2]

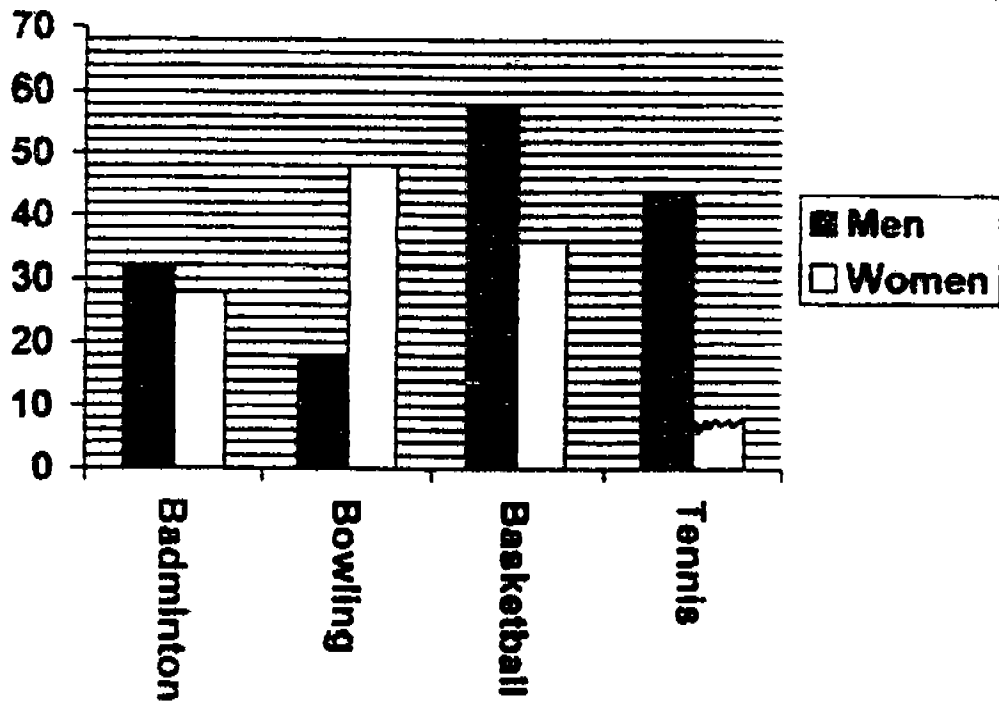
43. The figure below is made up of 2 big quadrants and 2 small quadrants. Find the shaded area. Take $\pi = \frac{22}{7}$.



Ans: _____ [4]

44. The graph below shows the number of participants in 4 different sports. Study the graph carefully before you answer the questions.

- (a) What fraction of the participants in Badminton were men?
- (b) What percentage of the total number of participants in Bowling and Basketball were women?
- (c) If the average number of participants in all four sports was 78, how many women had participated in Tennis?



Ans: (a) _____ [1]
 (b) _____ [1]
 (c) _____ [2]

45. Town A and Town B were 600 km apart. At 10.45 a.m., a lorry traveling at a uniform speed left Town A for Town B. At the same time, a taxi set off from Town B to Town A at a uniform speed which was 12 km/h faster than that of the lorry's. The two vehicles met at 3.45 p.m. Find the speed of the taxi.

Ans: _____ [4]

46. Alice, Belinda and Cathy teamed up to participate in a Mathematics quiz. At the end of the quiz, Alice scored $\frac{1}{4}$ of the total number of points scored by the team. The rest of the points were scored by Belinda and Cathy in the ratio 5:3. If the team had scored a total of 96 points,

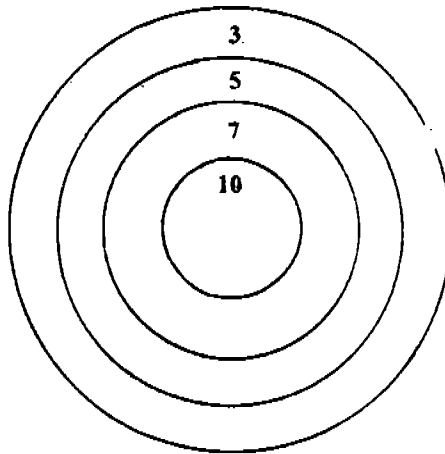
(a) how many more points did Belinda score than Alice?

(b) express as a ratio in its simplest form, the number of points scored by Cathy to the total number of points scored by the team.

Ans: (a) _____ [2]

(b) _____ [2]

47. For every round in a dart game, three darts are thrown at the target as shown below and the points are added up. Each player has 5 rounds. The winner is the one with the highest total number of points scored after the 5 rounds.
- (a) If only 2 darts hit the target, how many possible even number total score could one get after one round?
- (b) If all the darts hit the target, what is the difference between the highest possible odd number score and the lowest possible odd number score in the game?



Ans: (a) _____ [2]
(b) _____ [3]

48. Rahim used 7 litres of syrup to make a drink. To every litre of syrup, Rahim added 4.6 litres of water. The drink was poured into three 1-litre bottles and the rest into cups of 250 ml.

(a) How many cups of the drink would there be?

(b) If the cups of drink were sold at \$0.65 a cup, how much money would be collected if all but two cups were sold?

Ans: (a) _____ [3]

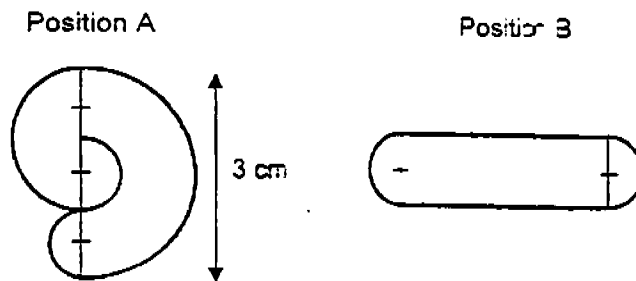
(b) _____ [2]

49. Nicole places a caterpillar on a piece of paper. She notices that the caterpillar covers the same area of the paper when it is curled up as in Position A or when it is straightened up as in Position B. Nicole also discovers that the shape formed in Position A is made up of four semi-circles and the shape formed in Position B is made up of two semi-circles and one rectangle.

(a) What area of the paper is covered by the caterpillar?

(b) What is the length of the caterpillar when it is in Position B?

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



Ans: (a) _____ [2]
 (b) _____ [3]

50 The usual price of a NONY television set was \$4 000. At the annual year-end sale, it was sold at a discount of 60%. As a result, the shopkeeper incurred a loss of \$300.

(a) What was the cost price of the television set?

(b) What percentage discount should the shopkeeper give on the usual price if a profit of \$300 on the television set was to be made?

Ans: (a) _____ [2]

(b) _____ [3]

The End

Setters: Mdm Adlina, Miss Aishah,
Miss Leong O H, Mr Teo W T, Mrs Ching C M

Answer key P6 Prelim 2004

Booklet A1 (25 marks)

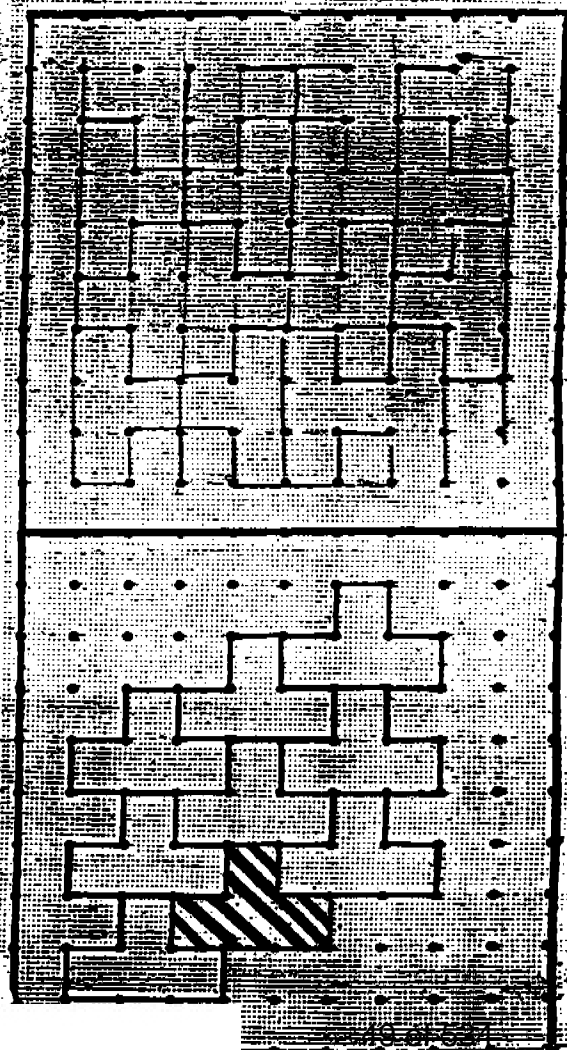
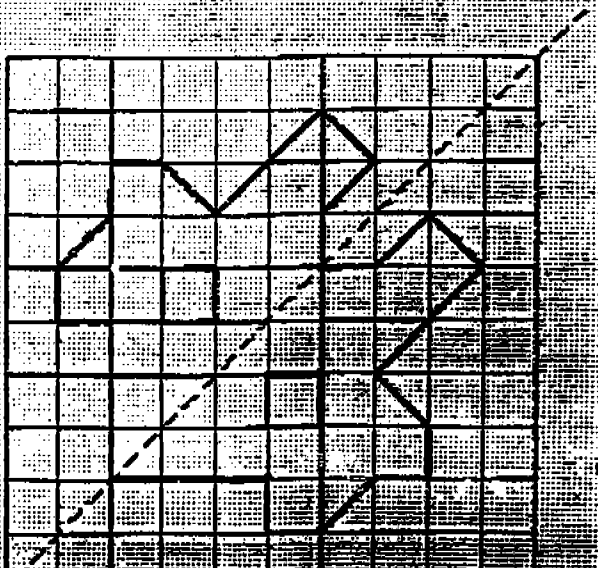
- 1. 1
- 2. 3
- 3. 2
- 4. 3
- 5. 4
- 6. 2
- 7. 2
- 8. 1
- 9. 3
- 10. 3
- 11. 3
- 12. 4
- 13. 2
- 14. 4
- 15. 3

Booklet A2 (20 marks)

- 16. 61
- 17. $\frac{4}{7}$
- 18. 7.5
- 19. 3 cm
- 20. 729 cm³
- 21. 30%
- 22. *
- 23. 18°
- 24. 21 lines
- 25. 3-1-5
- 26. 9072 cm³
- 27. 80%
- 28. 36 years old
- 29. 3.3
- 30. 2.9 kg

- 31. (15π + 20) cm
- 32. 8000 cm³
- 33. *
- 34. 23 km
- 35. 30 pupils

22.



36 ensure line is perpendicular
mark out right angle

MI MI

1st 20 = 80 x 20 = \$16
 Next 20 = 90 x 20 = \$18
 Next 7 = 130 x 7 = \$910
 Total = 16 + 18 + 910 = \$430 - M1A

$(20 + 4) \times 3 = 15 \text{ blisses}$

M1
 No. of blisses = 15

No. of blisses	Total blisses	Total cost	
10	10	\$11.30	X
18	18	\$15.50	X
35	35	\$27.50	✓
108	108		

90 - 63 = 27 M1
 180 - 27 = 153 M1
 180 - 36 = 144 M1/2 A1
 180 - 75 = 105 M1/2
 180 - 63 = 117 M1
 180 - 108 = 72 M1/2

a) cost = \$34 + (\$9 x k) = \$(34 + 9k) AI
 b) 11.9(11) = \$133
 11.9(10) = \$127.1
 11.9(12) = \$139.8
 MI A1

MI
 110 = \$49 + 4 = \$12.25
 (a) dress = \$12.25 x 2 + 4 = \$28.50 AI
 (b) 12.25 x 9 = \$110.25 MI A1

Area of small square → 7 x 7 = 49 cm²
 Area of big square → 4 x 49 = 196 cm²



Area of small quadrant → $\frac{1}{4} \pi r^2 = \frac{1}{4} \times \frac{22}{7} \times 7 \times 7 = 38.5 \text{ cm}^2$

Area A for the small square = Area B for the small square
 = 2 x (49 - 38.5) = 10.5 cm² x 2 = 21 cm²

Area C for the small square → 49 - 21 = 28 cm²

Area C for the big square → 4 x 28 = 112 cm²

Area of the shaded part → 112 - 28 = 84 cm²

8) $\frac{32}{60} = \frac{16}{30} = \frac{8}{15}$ (A1)

b) $\frac{84}{160} \times 100\% = \frac{105}{2} = 52\frac{1}{2}\%$ (A1)

c) Total $\rightarrow 78 \times 4 = 312$
 $312 - (32 - 28 - 18 - 48 - 58 - 36 - 44)$ (M1)
 $= 612 - 284$
 $= 48$ (A1)

10.5 a.m. to 3.45 p.m. $\rightarrow 5$ h (M1)

11 $\rightarrow 12$ km faster
 5×12 km faster
 $= 60$ km faster (M1)

$1600 - 60 = 540$ km
 $540 \div 2 = 270$ km
 $270 + 60 = 330$ km (M1)

The taxi travelled 330 km
 Speed of the taxi = $330 \div 5$
 $= 66$ km/h (A1)

5-
 - 7/3 END -

46. Alice's score $\rightarrow 96 + 4 = 24$ ----- M1s

$B + C = 96 - 24 = 72$
 1 unit $\rightarrow 72 \div 8$
 $= 9$ marks

Belinda $\rightarrow 5 \times 9$
 $= 45$ marks ----- M1s
 $45 - 24 = 21$ marks ----- A1

a) Belinda scored 21 more marks than Alice.

Cathy $\rightarrow 3 \times 9 = 27$ ----- M1

Cathy	Total
27	96
(b) $= 9$	32

(b) $= 9$ A1

47. a) $7 + 7 = 14$
 $5 + 7 = 12$
 $5 + 5 = 10$
 $3 + 3 = 6$
 $3 + 5 = 8$
 $3 + 7 = 10$
 $10 + 10 = 20$

There are 6 possible even number scores. (M1)

Highest odd number score $\rightarrow 30 + 30 + 30 + 27 = 117$
 Lowest odd number score $\rightarrow 9 + 9 + 9 + 9 = 36$
 Difference $= 117 - 36 = 81$ (A1)

48. a) $7 + 4.6 \times 7 = 39.2$ litres ----- M1
 $39.2 - 3 = 36.2$ l = 36200 ml
 a) $36200 \div 250 = 144.8$ cups ----- M1
 ≈ 144

no. of cups sold = $144 - 2 = 142$ ----- M1s
 b) sum collected = $0.65 \times 142 = \$92.30$ ----- A1

50.

Discounted Price → 4 000 x 0.4 = \$1 600 (M1)

Cost price → 1 600 + 300 = \$1 900 (A1)

To earn a profit of \$300,
New discounted price → 1 900 + 300 = \$2 200 (M1)

Percentage discount
that we can give → $\frac{(4000 - 2200)}{4000} \times 100\%$ (M1)

= 45% (A1)

radius of small circle = $3 + 6 = \frac{1}{2}$ cm

radius of medium circle = $\frac{1}{2} + \frac{1}{2} = 1$ cm

radius of big circle = $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} = 1\frac{1}{2}$ cm

area of big semi-circle = $\frac{1}{2} \times \frac{22}{7} \times 1\frac{1}{2} \times 1\frac{1}{2} = 3\frac{15}{28}$ cm²

area of medium semi-circle = $\frac{1}{2} \times \frac{22}{7} \times 1 \times 1 = 1\frac{4}{7}$ cm²

area of small semi-circle = $\frac{1}{2} \times \frac{22}{7} \times \frac{1}{2} \times \frac{1}{2} = \frac{11}{28}$ cm²

(a) area of caterpillar = $3\frac{15}{28} + 1\frac{4}{7} + \frac{11}{28} = 5\frac{1}{2}$ cm²

..... M1 A1

Area of 2 semi-circles = $\frac{22}{7} \times \frac{1}{2} \times \frac{1}{2} = \frac{11}{28}$ cm²

Area of rect = $5\frac{1}{2} - \frac{11}{28} - \frac{11}{28} = 4\frac{5}{7}$ cm²

Length of rect = $4\frac{5}{7} + 1 = 4\frac{5}{7}$ cm

(b) Length of caterpillar = $4\frac{5}{7} + 1 = 5\frac{5}{7}$ cm

M1

M1 A1