

HENRY PARK PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2006
MATHEMATICS
PRIMARY SIX
Booklet A

Name : _____ () Class : P6 _____

Index No : _____

15 Questions

20 Marks

Total Time for Booklets A and B: 2 h 15 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.
FOLLOW ALL INSTRUCTIONS CAREFULLY.
ANSWER ALL QUESTIONS.

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)

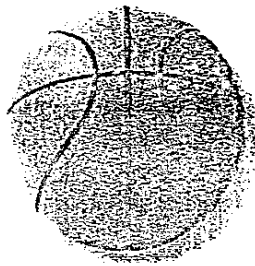
1. In the number 18.703, what is the value of the digit 7?

- (1) 0.007
- (2) 0.07
- (3) 0.7
- (4) 7

2. What is the value of $32 + 4 \times (14 - 6) \div 2$?

- (1) 32
- (2) 48
- (3) 85
- (4) 144

3. Which of the following is a good estimate of the diameter of a basketball?

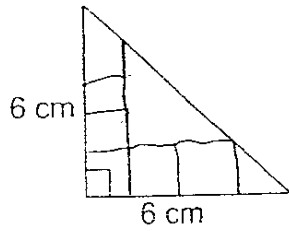


- (1) 2.2 cm
- (2) 22 cm
- (3) 2.2 m
- (4) 22 m

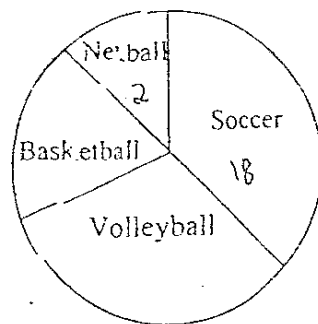
4. A vending machine only gives change in coins of 2 denominations, 10-cents and 20-cents. Jason uses a \$2-note to buy a can of drink which costs \$0.80. What is the fewest possible number of coins returned as change?

- (1) 2
- (2) 4
- (3) 6
- (4) 12

5. What is the maximum number of 2-cm squares that can be cut from this triangular piece of cardboard below?

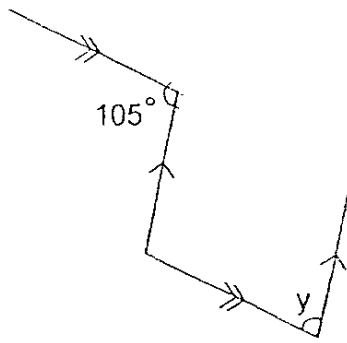


- (1) 3
 - (2) 4
 - (3) 5
 - (4) 9
6. The pie chart below shows the different CCAs chosen by 20 pupils in a class. If 2 pupils chose Netball as their CCA, how many pupils chose Soccer?



- (1) 18
- (2) 10
- (3) 8
- (4) 5

7. In the figure below, not drawn to scale, the value of $\angle y$ is _____°.



- (1) 105
- (2) 90
- (3) 85
- (4) 75

8. The ratio of men to women to children at a party is 3 : 4 : 5. If there are 24 women, how many children are there?

- (1) 10
- (2) 18
- (3) 30
- (4) 120

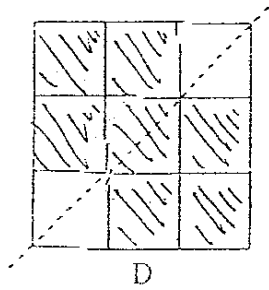
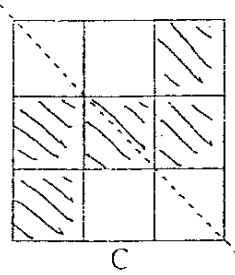
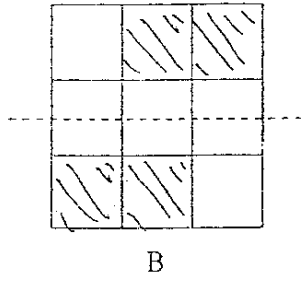
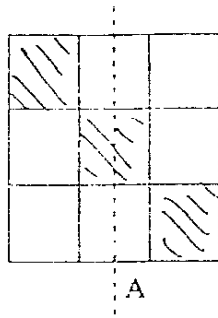
9. If 35% of a number is 70, what is the number?

- (1) 200
- (2) 105
- (3) 50
- (4) 35

10. A number, Y, when rounded off to the nearest tenth is 3.0. Which of the following number can Y be?

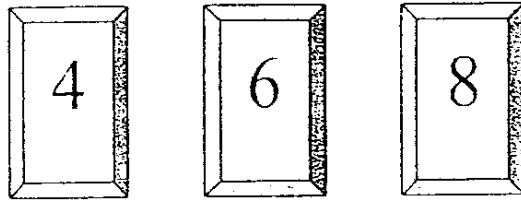
- (1) 2.898
- (2) 2.945
- (3) 3.046
- (4) 3.196

11. Which of these diagrams is the dotted line a line of symmetry?

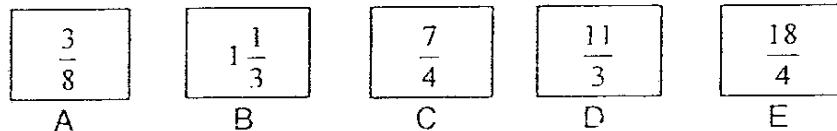


- (1) A
- (2) B
- (3) C
- (4) D

12. Jane has three cards. If she picks any two cards and adds up the two numbers, what is the average of all the possible sums?



- (1) 6
(2) 10
(3) 12
(4) 14
13. The average rainfall for the period from January 2006 to May 2006 is 1.55 cm. Each month had 0.01 cm more rainfall than the month before it. What is the rainfall for January?
- (1) 1.53cm
(2) 1.57cm
(3) 1.59cm
(4) 1.60cm
14. Lyn had some fraction cards and she arranged them in ascending order as shown:



After she had arranged the cards, she realised that she left out a card with the fraction $3\frac{5}{8}$.

Where should Lyn place this card?

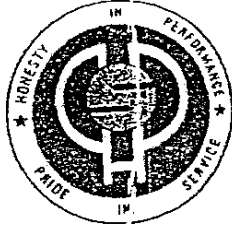
- (1) Between A & B
(2) Between B & C
(3) Between C & D
(4) Between D & E

15. The table below shows the payments made by John and David during a trip they took.

Expenses		Paid By
Food	\$58.00	John
Accommodation	\$132.00	John
Transportation	\$61.00	David
Entertainment	\$119.00	David

How much does David owe John if they were to split the expenses equally?

- (1) \$5
- (2) \$10
- (3) \$85
- (4) \$90



HENRY PARK PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2006
MATHEMATICS
PRIMARY SIX
Booklet B

Name : _____ () Class : P6 _____

Index No : _____

80 Marks

Total Time for Booklets A and B: 2 h 15 min

DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

FOLLOW ALL INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS.

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. Mrs Eng ate $\frac{1}{4}$ of a pie and shared the remainder equally among her 6 children.
What fraction of the pie did each child get?

Answer : _____

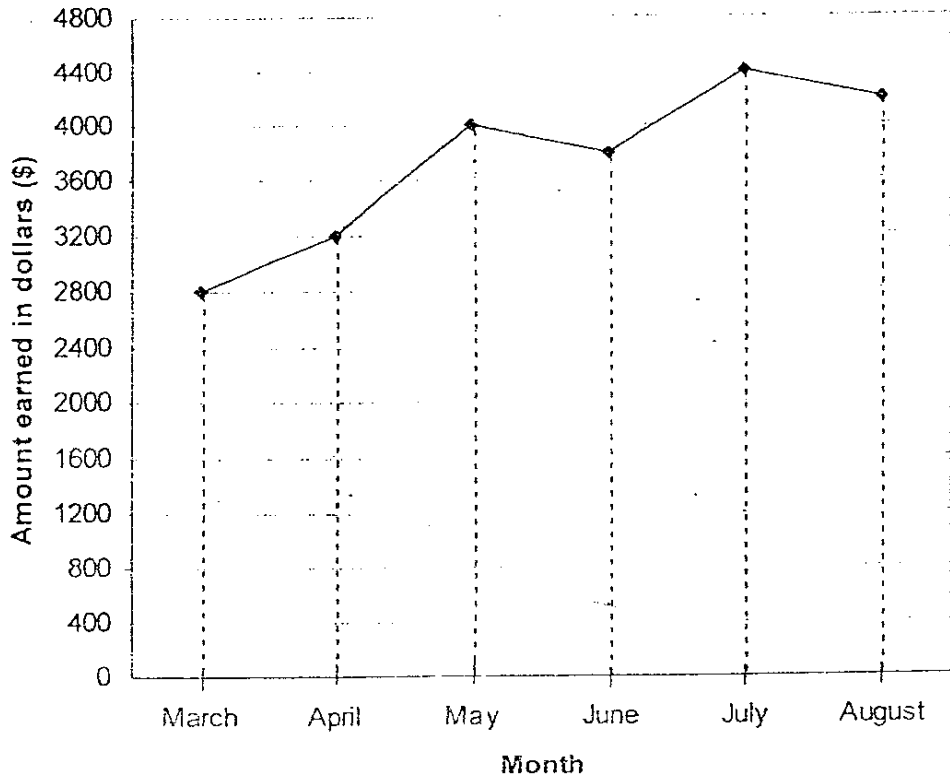
17. Find the quotient when 543 is divided by 8.

Answer : _____

18. Find the capacity of a glass tank measuring 15 cm by 10 cm by 20 cm.

Answer : _____ cm^3

19. The graph below shows the amount earned by a salesman from March to August. Study the graph carefully and answer the following question.



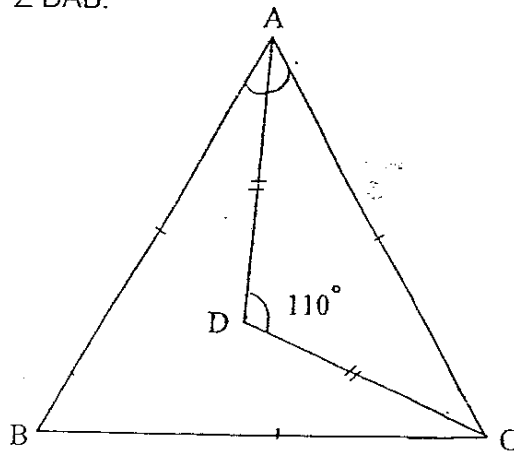
What is the amount earned by the salesman in September if it is 50% of his total earnings in April, May and August?

Answer :\$ _____

20. A carton containing 1 ℓ of milk has sprung a leak at the bottom. 15 minutes later 700 ml of milk was left. What was the rate at which the milk was leaking from the carton?

Answer : _____ ml/min

21. In the figure below, ABC is an equilateral triangle and ADC is an isosceles triangle. Find $\angle DAB$.

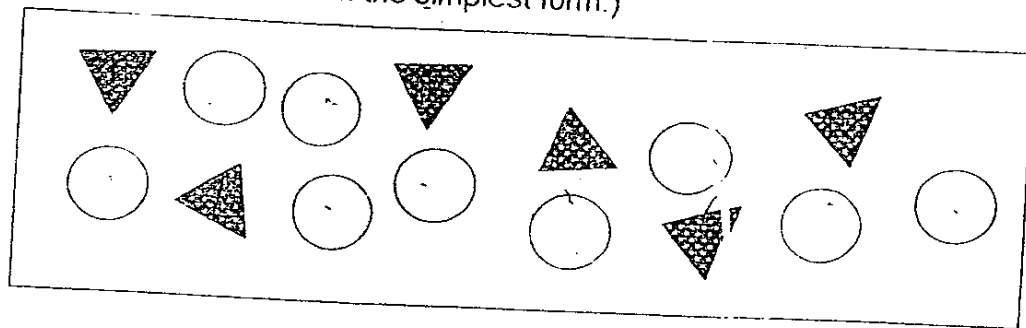


Answer : _____ °

22. It takes Henry 20 minutes to cycle home from school. If he cycled at a speed of 15 km/h, how far away from home is his school?

Answer : _____ km

23. Write down the ratio of the number of circles to the number of triangles in the box below. (Give your answer in the simplest form.)



Answer : _____

24. If each side of a square is increased by 20%, then the area will be increased by _____ %.

Answer : _____

25. Simplify $16 - 5p - 3 + 8p$

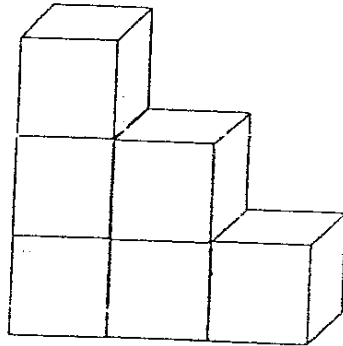
Answer : _____

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. Sue has a packet of sweets. She gives away $\frac{5}{12}$ of her sweets and has 203 sweets left. How many sweets does she have at first?

Answer : _____

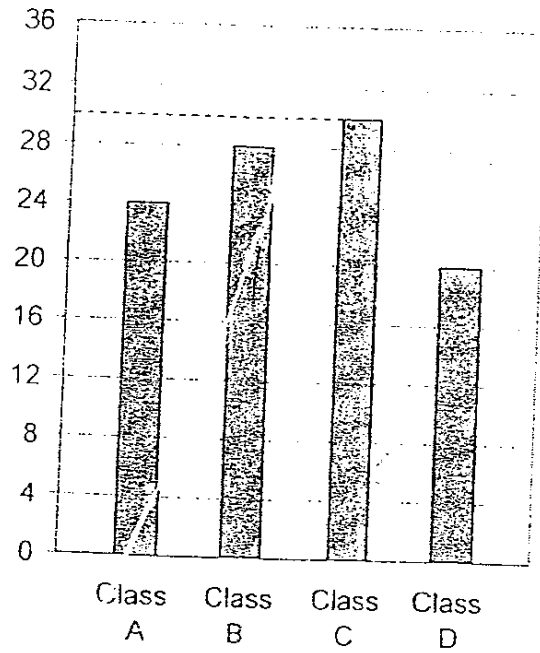
27. The 3-step stairway below is made of 6 similar cubes. Find how many similar cubes will be required to make a stairway with 10 steps.



Answer : _____

28. The bar graph below shows the number of pupils in four different classes with computers at home. Study the graph and answer the question below.

Number of pupils with computers at



If there are 30 pupils in each class, what percentage of the total number of pupils have computers at home?

Answer : _____ %

29. The length of a rectangular piece of paper is 3 times as long as the breadth. If the length was 5 cm shorter and the breadth was 5 cm longer, it would be a square. What is the area of the piece of paper?

Answer : _____ cm²

30. $\frac{2}{3}$ of Nancy's marbles is equal to $\frac{4}{5}$ of Peggy's marbles. Given that Nancy has 20 more marbles than Peggy, how many marbles does Nancy have?

Answer : _____

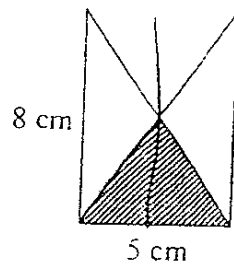
31.

Soup	Main Course	Dessert
Chicken Mushroom	Spaghetti Grilled Fish Chicken Chop	Chocolate Cake Ice-cream

The above table shows the different types of soup, main course and dessert served in a restaurant. For a set meal, the guest can have his choice of a soup, a main course and a dessert. How many different sets of meals can be served based on the menu given above?

Answer : _____

32. The figure below is formed by placing 2 identical right-angled triangles one over the other.
Find the shaded area in the figure.

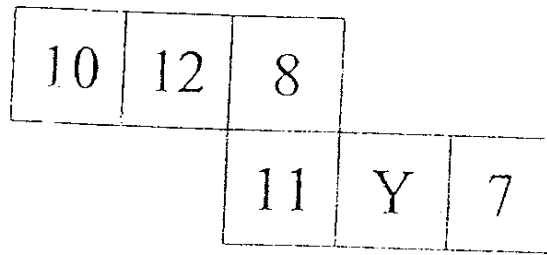


Answer : _____ cm^2

33. Jane bought 7 t-shirts at \$8.00 each. The cashier charged her \$2.80 for GST. If she had \$6.70 left after paying, how much did she have before buying the t-shirts?

Answer : \$ _____

34. The figure shows the net of a cube. The sum of the numbers on each pair of opposite faces is the same. Find the missing number at the face marked "Y".



Answer : _____

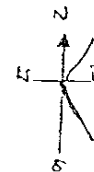
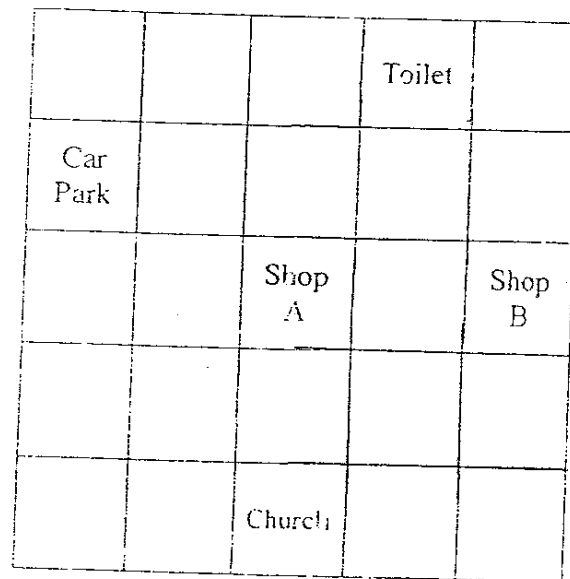
35. Linda was standing in one of the empty boxes, facing North. She saw that the toilet was in front of her and there was nothing to her left.

(a) Shade the box she was standing in.

[1]

(b) What is the direction of the Church from the Car Park?

[1]



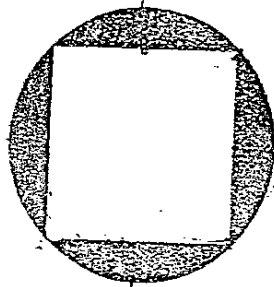
Answer: (b) _____

Section C (50 marks)

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.

36. The figure below is made up of a square in a circle with a 14 cm diameter.

Find the area of the shaded parts. (Take $\pi = \frac{22}{7}$)



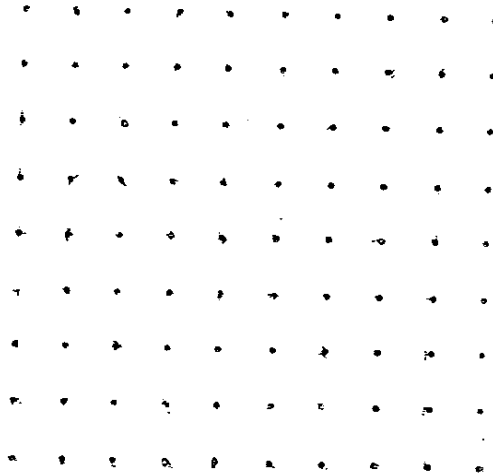
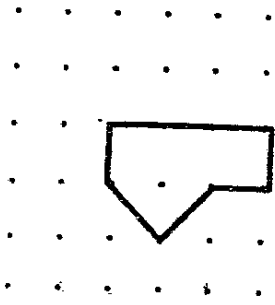
Answer: _____ [3]

37. In a shop that sells hats and bags, a hat is sold for \$2.50 more than a bag. If a hat and a bag are purchased together as a set, customers need only pay \$8.50, which saves them \$1.00.

How much will a customer need to pay if he buys 4 bags?

Answer: _____ [3]

38. Using the unit shape given on the left, draw a tessellation with 4 unit shapes on the grid on the right. [3]



39. Rita had some pens. 60% of them were red and the rest were blue. She gave $\frac{1}{2}$ of the red pens and $\frac{3}{4}$ of the blue pens to her brother. What percentage of her pens was left?

Answer: _____ [3]

40. Jing and Ling earn a total of \$450. Jing earns \$2y more than Ling. How much does Jing earn?

Answer: _____ [3]

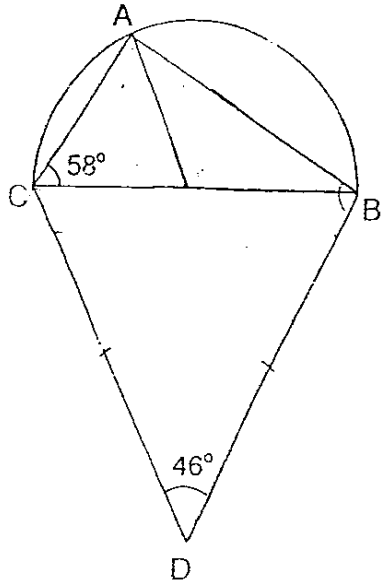
41. Three rods of lengths 88 cm, 132 cm and 165 cm are cut into pieces of equal length without wastage. Find the longest possible length each piece can be.

Answer: _____ [3]

42. Jackson found a bag of 20¢ and 50¢ coins with a total value of \$30.80. If there were 7 more 20¢ coins than 50¢ coins, how many coins were there in the bag?

Answer: _____ [4]

43. In the figure below, O is the centre of a semicircle and BCD is an isosceles triangle. Find $\angle ABD$.

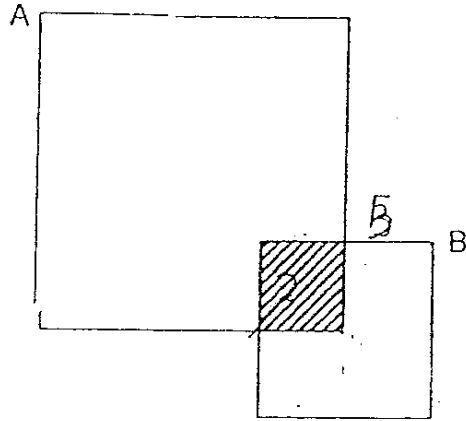


Answer: _____ [4]

44. A north bound train left a station at noon. 4 hours later, a south bound train left the same station. At 5 o'clock, they were 370 km apart. What was the speed of the north bound train if it was going at 20 km/h faster than the other train?

Answer: _____ [4]

45. The figure below is made up of 2 overlapping squares A and B. A is 4 times as big as B. The overlapped portion is a square with an area of 25 cm^2 . If 3 more such squares can be cut out with the remaining part of the square B, find the perimeter of the whole figure.



Answer: _____ [5]

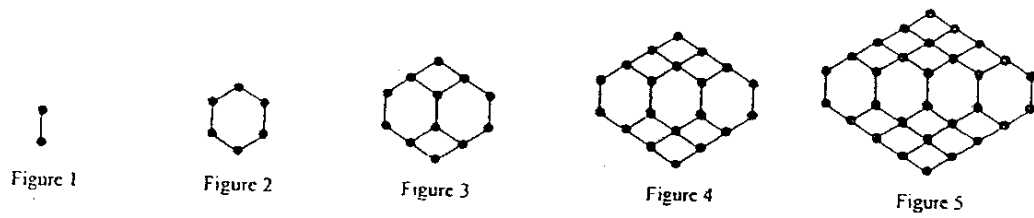
46. Richard, Dan and Tom shared a bag of marbles. Richard received 60 marbles and Tom received 25% less marbles than Dan. Later, Richard gave 28 marbles to be shared by Dan and Tom. As a result, Tom still has 25% fewer marbles than Dan and the number of marbles Dan receives increases by 40%. How many marbles were there in the bag?

Answer: _____ [5]

47. Mrs Chan used 3 types of flour, X, Y and Z to bake some cakes. Each packet of flour X, Y and Z had a mass of 250 g, 400 g and 600 g respectively. The ratio of the number of packets of flour X, Y and Z used was 6 : 5 : 3. The total mass of the flour used was 26.5 kg. How many packets of flour were used altogether?

Answer: _____ [5]

48. The figures below are made up of sticks and dots.



(a) Study the pattern above and complete the table below.

Figure	No. of Sticks	No. of Dots
1	1	2
2	6	6
3	15	12
4	28	20
5	45	30
6	66	

[1]

(b) Find the number of sticks and dots which make up Figure 100 of the pattern above.

Answer _____ Sticks [2]
 _____ Dots [2]

Have you checked through your work?

END OF PAPER

Henry Park Primary School

Primary 6 Maths Preliminary Exams (2006)

Answer Sheets

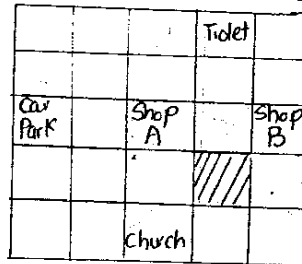
Q1	Q2	Q3	Q4	Q5
3	2	2	3	1
Q6	Q7	Q8	Q9	Q10
3	4	3	1	3
Q11	Q12	Q13	Q14	Q15
4	3	1	3	1

- | | |
|-------------------------|--------------|
| 16. $\frac{1}{8}$ | 21. 25% |
| 17. 67 | 22. 100km |
| 18. 3000cm ³ | 23. 3 : 2 |
| 19. \$5700 | 24. 44% |
| 20. 20ml / min | 25. (13 +3p) |

<p>26. 7 sweets = 203 12 sweets = 29 x 12 = <u>348 sweets</u> (Ans)</p>	<p>27. 55 cubes</p>
<p>28. Total pupils in class with computers = 102 $= \frac{102}{120} \times 100 = \underline{85\%}$</p>	<p>29. Area of rectangle = 15 x 5 = <u>75cm²</u> (Ans)</p>
<p>30. 10 units = 20 units 12 units = 12 x 10 = <u>120 marbles.</u> (Ans)</p>	<p>31. Soup + Dessert = 4 choices Main course = 3 sets Sets meal = 4 x 3 = <u>12 sets</u> (Ans)</p>
<p>32. Area of triangle = $\frac{1}{2} \times 5 \times 4$ = <u>10cm²</u> (Ans)</p>	<p>33. 7 T-shirts = \$(7 x 8) = \$(56 x 5% GST) = \$58.80 + \$6.70 = <u>\$65.50</u> (Ans)</p>

34. $11 + 17 = 18$
 $18 - 12 = 6$

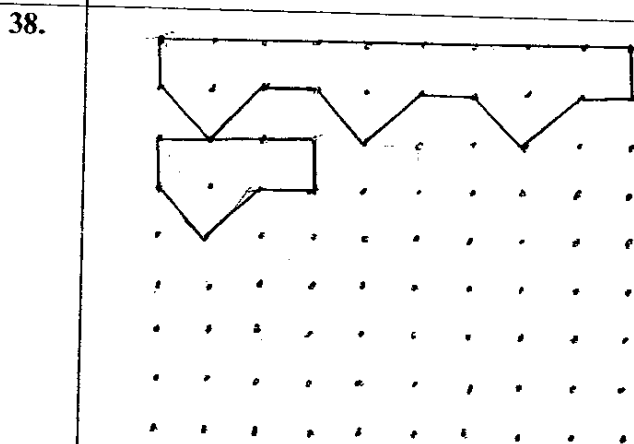
35a.



35b. South-East

36. Area of circle = πr^2
 $= \frac{22}{7} \times 7 \times 7$
 $= 154\text{cm}^2$
 Area of square = $\frac{1}{2} \times 14 \times 7 \times 2$
 $= 98\text{cm}^2$
 Area of shaded part = $154 - 98$
 $= 56\text{cm}^2$ (Ans)

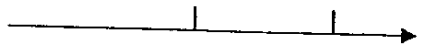
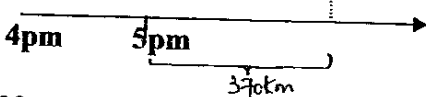
37. 1 set (hat + bag) = \$8.50
 $= \$ (8.50 - 2.50)$
 $= \$ 6.00$
 1 hat = $\$(6.00 - 2.50)$
 $= \$3.50$
 4 bags = $\$(3.50 \times 4) = \underline{\$14.00}$ (Ans)



39. $(100 - 60)\% = 40\%$ (Blue)
 $\frac{1}{2} \times 60\% = 30\%$ (Blue left)
 $1 - \frac{3}{4} = \frac{1}{4}$
 $\frac{1}{4} \times 40\% = 10\%$ (Blue left)
 $30\% + 10\% = \underline{40\%}$ (Ans)

40. $\left. \begin{array}{l} \text{J } \boxed{} \quad \boxed{\$2y} \\ \text{L } \boxed{} \end{array} \right\} \450
 $2 \text{ units} = \$450 - \$2y$
 $1 \text{ unit} = \frac{\$(450 - 2y)}{2}$
 $= \underline{\$(225 - y)}$ Ans

41. Find HCF 88, 132, 165
 $= \frac{88 \quad 132 \quad 165}{8 \quad 12 \quad 15}$
 $= \underline{11\text{cm}}$ (Ans)

42.	$0.20¢ \times 7 = \$1.40$ $\$3.80 - \$1.40 = \$29.40$ $\$29.40 \div 0.70 = 42$ $42 \times 2 = 84$ $84 + 7 = \underline{91}$ (Ans)	43.	$180^\circ - 46^\circ = 134^\circ$ $134^\circ \div 2 = 67^\circ$ ΔACO isosceles = ΔAOB $58^\circ + 58^\circ = 116^\circ$ $\Delta ABO = \frac{180^\circ - 116^\circ}{2} = 32^\circ$ $= 32^\circ + 67^\circ = \underline{99^\circ}$ (Ans)
44.	<p style="text-align: center;">12pm 4pm 5pm</p> <p>N </p> <p>S </p> $370 - 20 = 350$ $350 \div 4 = \underline{87.5\text{km/hr}}$ (N) (Ans) $87.5 - 20 = \underline{67.5\text{km/hr}}$ (S) (Ans)	45.	$\frac{1}{4} \div B = 25\text{cm}^2$ $B = 25 \times 4 = 100\text{cm}^2$ $A = 100 \times 4 = 400\text{cm}^2$ $= 20 \times 20 = 400\text{cm}^2$ Length A = 20cm^2 $= 5 \times 5 = 25\text{cm}^2$ Length B = $5 \times 2 = 10\text{cm}$ Perimeter A = $20 \times 4 = 80\text{cm}$ Perimeter B = $10 \times 4 = 40\text{cm}$ Total length = 120cm $= 120 - (4 \times 5) = \underline{100\text{cm}}$ (Ans)
46.	Dan : 100% (140%) Tom : 75% (105%) $= \frac{3}{4} \times 140\% = 105\%$ $(140 - 100)\% = 40\%$ $(105 - 75)\% = 30\%$ $(40 + 30)\% = 70\%$ $70\% = 28$ $75\% = \frac{28}{70} \times 75 = 30$ $40 + 30 + 60 = \underline{130}$ (Ans)	47.	$6 \times 250\text{g} = 1500\text{g}$ $5 \times 400\text{g} = 2000\text{g}$ $3 \times 60\text{g} = 1800\text{g}$ $(1500 + 2000 + 1800)\text{g}$ $= 5300\text{g}$ $= \frac{26500}{5300} \text{g} = 5$ $= 6 + 5 + 3 = 14$ $= 14 \times 5 = \underline{70}$ (Ans)

48a. Difference = 2

$$6 \times 2 = 12$$

$$12 + 30 = \underline{42} \text{ (Ans)}$$

48b. $101 \times 100 = \underline{10100}$ (Ans)