

242

NANYANG PRIMARY SCHOOL  
PRELIMINARY EXAMINATION  
2004

PRIMARY 6  
MATHEMATICS

12 AUGUST 2004  
TIME: 2 HOUR 15 MINUTES

Section A	/ 25
Section B	/ 20
Section C	/ 55

Total:	/100
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Name: \_\_\_\_\_ ( )

Class: Primary 6 ( )

Parent's Signature: \_\_\_\_\_

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

Section A

Questions 1 to 5 carry one mark each. Questions 6 to 15 carry two 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 correct oval (1, 2, 3 or 4) on the Optical Answer Sheet.

(Total: 25 marks)

1. The height of the classroom door in Nanyang Primary School is about \_\_\_\_\_.

(1) 150 cm

(2) 2 m

(3) 350 cm

(4) 4 m

2. Find the quotient when 3015 is divided by 3.

(1) 15

(2) 105

(3) 1005

(4) 1055

3.  $7.335 \div 80$  is the same as \_\_\_\_\_.

(1)  $\frac{7335}{8}$

(2)  $\frac{7335}{80}$

(3)  $\frac{7335}{800}$

(4)  $\frac{7335}{8000}$

4.  $\frac{1}{9} + \frac{2}{9} + \frac{3}{9} = \square \times 2$

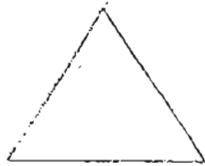
(1)  $\frac{1}{9}$

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

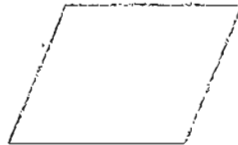
(3)  $\frac{2}{3}$

(4)  $\frac{3}{4}$

5. Which one of the following figures has perpendicular lines?



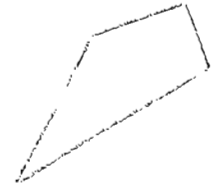
A



B



C



D

(1) A

(2) B

(3) C

(4) D

6. Meng Lai spent  $\frac{1}{3}$  of his money while his sister spent

$\frac{3}{8}$  of her money. They each had \$40 left after that.

How much did they have altogether at first?

(1) \$60

(2) \$54

(3) \$124

(4) \$220

7. A is  $\frac{2}{3}$  the weight of B. C is  $\frac{1}{2}$  the weight of B.  
Find the ratio of the weight of A to the weight of B  
to the weight of C.

(1) 2 : 3 : 1  
(3) 4 : 5 : 3

(2) 2 : 5 : 1  
(4) 4 : 5 : 3

8. The distance between Town A and Town B was 180 km.  
A car started travelling from Town A to Town B at  
70 km/h. At the same time, a van travelled from Town  
B to Town A at 50 km/h. If they passed each other at  
9 a.m., at what time did they start their journey?

(1) 6.30 a.m.  
(3) 7.30 a.m.

(2) 7.00 a.m.  
(4) 8.00 a.m.

9. Tap A can fill a tank in 2 hours. Tap B can fill  
the same tank in 4 hours. If both taps are turned  
on at the same time, how long would it take to fill  
half the tank?

~~(A)~~  $\frac{3}{8}$  h

~~(B)~~  $\frac{2}{3}$  h

~~(C)~~  $\frac{1}{2}$  h

~~(D)~~  $\frac{3}{4}$  h

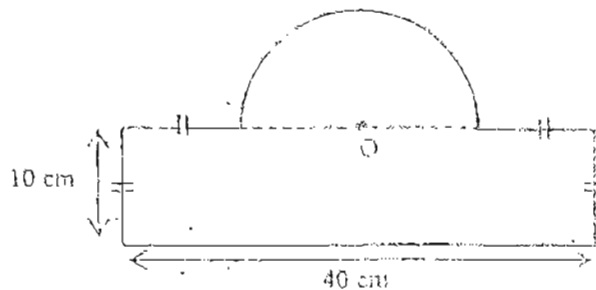
10. Eddie saved 30% less money than Fred. George saved 30% less than Eddie. Express George's savings as a percentage of Fred's savings.

- (1) 40%                      (2) 49%  
(3) 62.5%                    (4) 70%

11. 20% of the 400 balls in a box are red. 100 more red balls are added to the box. What percentage of the balls in the box is red now?

- (1) 25%                      (2) 36%  
(3) 45%                      (4) 64%

12. A piece of wire is bent into the figure shown below. O is the centre of the semi-circle. Find the length of the wire used. (Take  $\pi = 3.14$ )

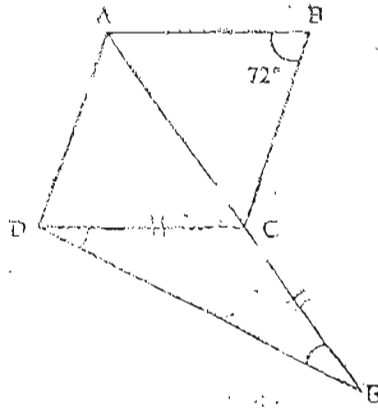


- (1) 31.4 cm                      (2) 91.4 cm  
(3) 111.4 cm                    (4) 131.4 cm

13. Pieces of paper 5 cm by 6 cm are to be cut from a bigger piece of paper 60 cm by 50 cm. What is the maximum number of pieces of paper that can be cut with the least amount of wastage?

- (1) 20 (2) 30  
(3) 96 (4) 100

14. ABCD is a rhombus and CDE is an isosceles triangle. Find  $\angle CDE$ .



- (1)  $27^\circ$  (2)  $54^\circ$   
(3)  $108^\circ$  (4)  $126^\circ$

15. There are some fruits in a basket. 12 of them are oranges and pears. 9 of them are oranges and apples and 11 of them are apples and pears. How many fruits are there in the basket?

- (1) 16 (2) 20  
(3) 23 (4) 30

Name: \_\_\_\_\_ ( ) Class: P6 ( )

Section B

Questions 16 to 35 carry 1 mark each. Write your answers in the spaces provided. Give your answers in the units stated. (Total: 20 marks)

16.  $200 - (40 + 20) \times 100 \div 120$

Answer: \_\_\_\_\_

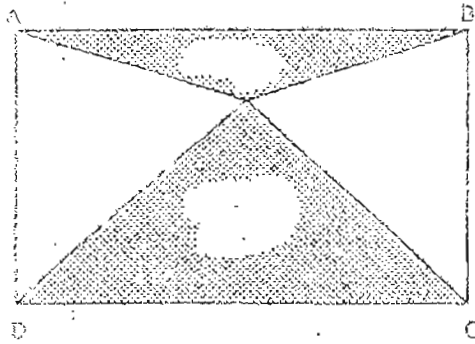
17. Jacob has \$15. Samuel has \$3 less. Their mother gives them \$k each. How much do they have altogether?

Answer: \$ \_\_\_\_\_

18. Teck Seng took 6.8 minutes to run 1.5 km. Kangli was 0.2 minutes faster. How long did Kangli take to run 1.5 km?

Answer: \_\_\_\_\_ min

19. ABCD is a rectangle 30 cm by 35 cm. Find the area of the shaded parts

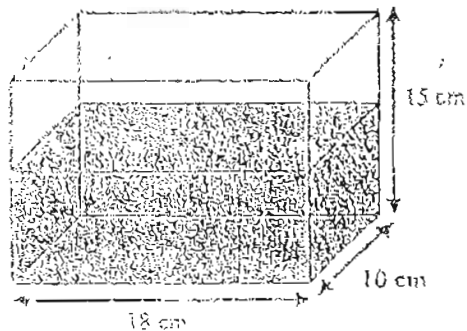


Answer: \_\_\_\_\_  $\text{cm}^2$

20. A bolster cost \$3 more than a pillow. Mr Samy bought 10 of each type and paid a total of \$190. How much did he pay for each pillow?

Answer: \$ \_\_\_\_\_

21.  $\frac{2}{3}$  of the container shown in the figure below is completely filled with water. How much water is in the container?



Answer: \_\_\_\_\_ l



22. The table below shows the rates of processing CDs at a shop.

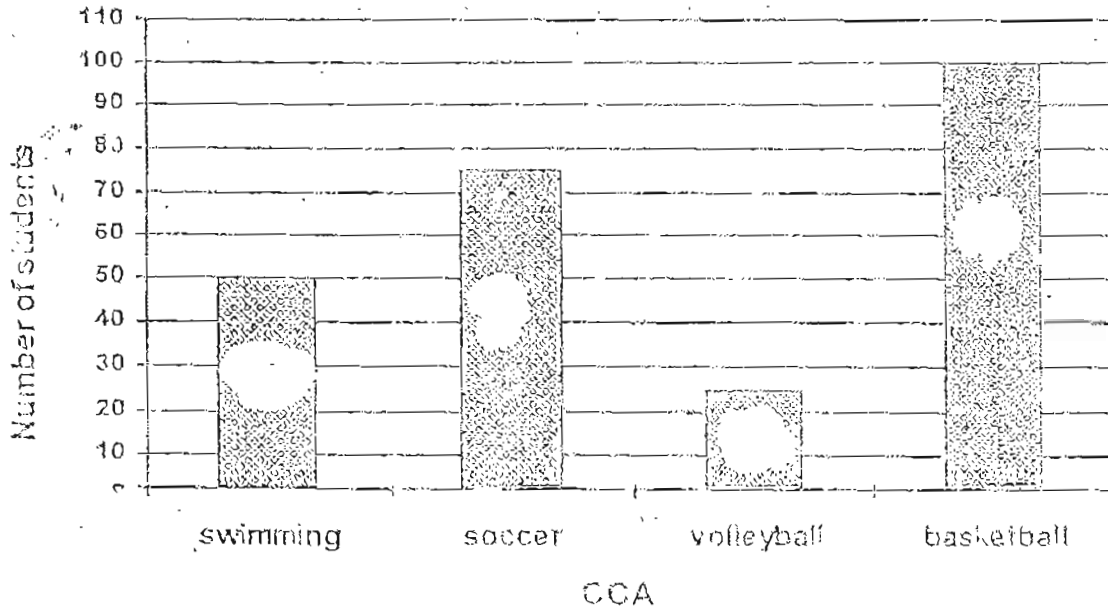
1 to 3 CDs	\$8 per CD
4 to 6 CDs	\$7 per CD
7 to 9 CDs	\$6 per CD
10 CDs or more	\$5 per CD

How much would Ahmad have to pay for processing 11 CDs?

Answer: \$ \_\_\_\_\_

23. The graph below shows the favourite sports of the students in the Yellow House. Study it and answer the following question.

What percentage of the students in Yellow House like swimming?

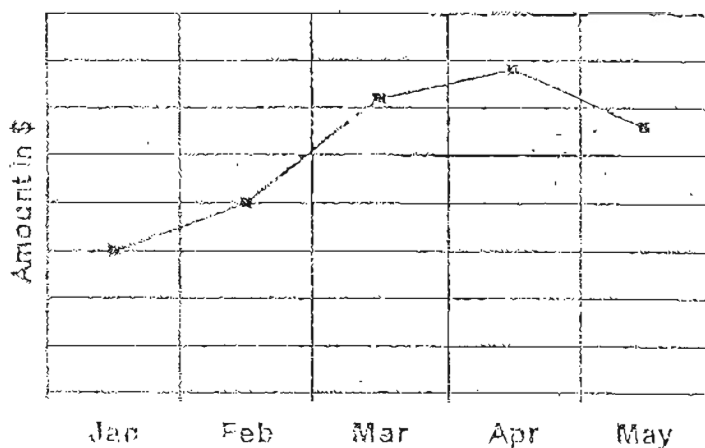


Answer: \_\_\_\_\_ %

24. Mother bought a dictionary, a book, a magazine and a pen from a shop. The dictionary cost as much as the total cost of the book and magazine. If the dictionary cost \$13 and the pen cost \$10, find the average cost of the items bought.

Answer: \$ \_\_\_\_\_

25. The graph below shows Mark's mobile phone usage from January to May. Study it and answer the following question.



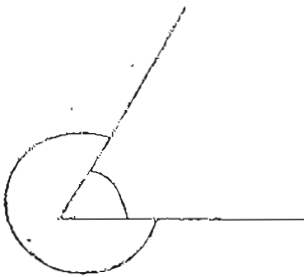
The increase in his usage was the greatest from \_\_\_\_\_ to \_\_\_\_\_.

Answer: \_\_\_\_\_ to \_\_\_\_\_

26. A car travelled 35 km in  $\frac{1}{2}$  hour and another 205 km in  $3\frac{1}{2}$  hours. Find its average speed for the whole journey.

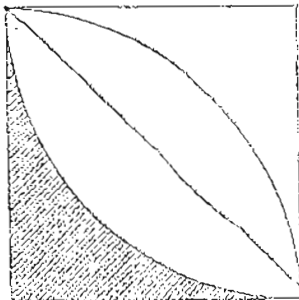
Answer: \_\_\_\_\_ km/h

27. The smaller angle is  $\frac{1}{5}$  the size of the bigger one. What is the size of the bigger angle?



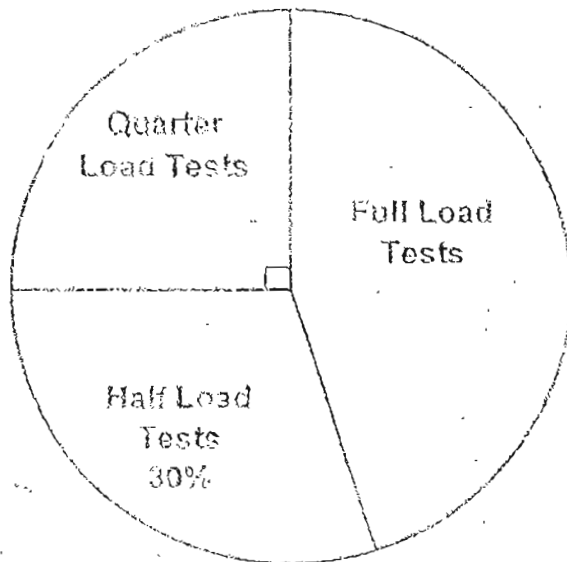
Answer: \_\_\_\_\_°

28. The figure below shows two quadrants which overlap each other. The radius of each quadrant is 14 cm. Find the area of the shaded part. Leave your answer in terms of  $\pi$ .



Answer: \_\_\_\_\_ cm<sup>2</sup>

The pie chart below shows the number of students in Pr 6A who have completed the various types of tests from the website PSLE2go.com. Study it and answer questions 29 and 30.



29. If there were 40 students in the class, how many students completed the full load tests?

Answer: \_\_\_\_\_

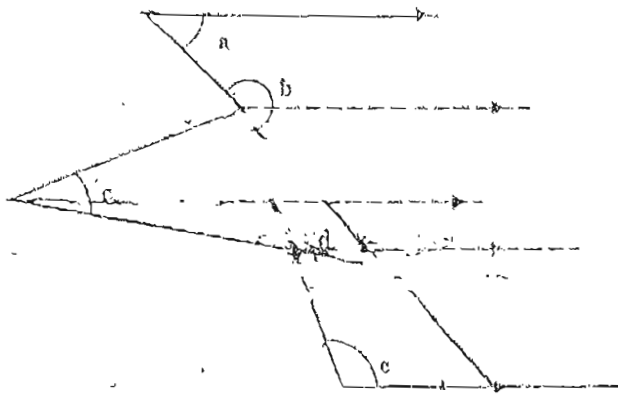
30. For every 3 students who completed the full load tests, one student scored full marks. How many students scored full marks for the full load tests?

Answer: \_\_\_\_\_

31. Find the value of  $1001 \div \frac{1}{5}$ .

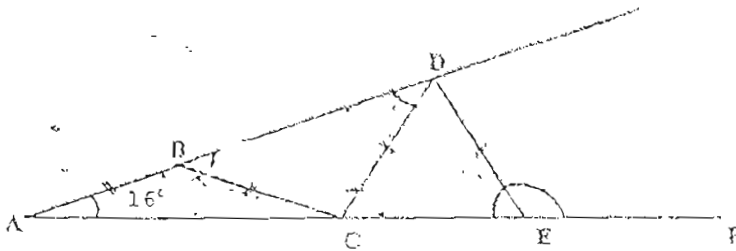
Answer: \_\_\_\_\_

32. Find the sum of  $\angle a$ ,  $\angle b$ ,  $\angle c$ ,  $\angle d$  and  $\angle e$ .



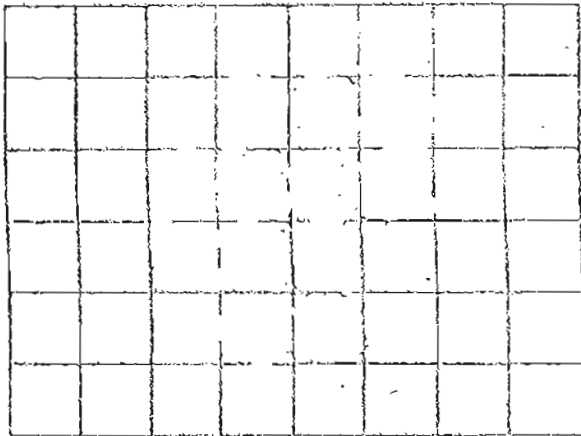
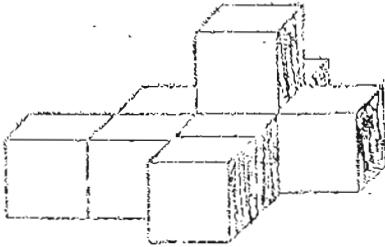
Answer: \_\_\_\_\_

33. In the figure below, a sequence of isosceles triangles is constructed with  $AB = BC$ , then  $BC = CD$ , and so on. If  $\angle BAC = 16^\circ$ , find the size of  $\angle DEF$ .



Answer: \_\_\_\_\_

34. The figure below shows a solid figure made up of cubes. Shade the grid on the right to indicate the top view of the solid figure.



35. Use the information below to answer the question. The table below shows the expenditures of the boys and girls in 3 different days.

Days	Boys	Girls
Monday	\$7.90	\$3.20
Tuesday	\$2.50	\$7.60
Wednesday	\$10.00	\$9.10

The total expenditures of the boys and girls are the same on 2 days. Which are the 2 days?

Answer: \_\_\_\_\_ and \_\_\_\_\_

Section C

For questions 36 to 50, show your working clearly in the space below each question and write your answers in the space provided.

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

(Total: 55 marks)

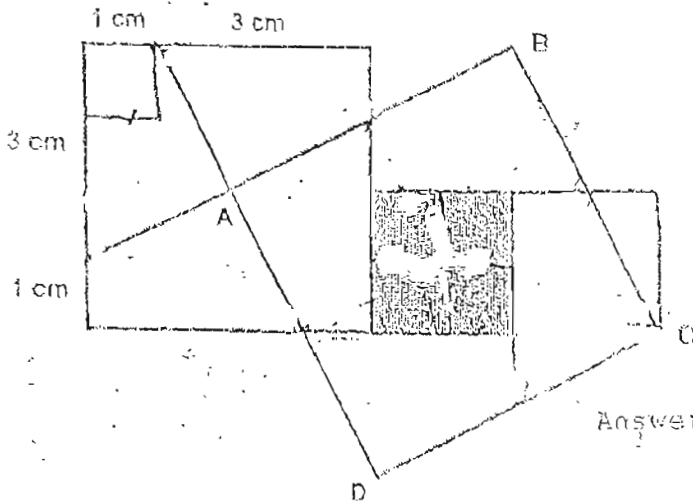
36. The table showed the goals scored by Team XYZ for an inter-school soccer tournament.

Number of goals	0	1	2	3
Number of matches	2	3	4	1

What was the average score of XYZ team?

Answer: \_\_\_\_\_ [2]

37. The figure shown below is made up of 7 identical quadrilaterals and a shaded region, find the area of the shaded region.



Answer: \_\_\_\_\_

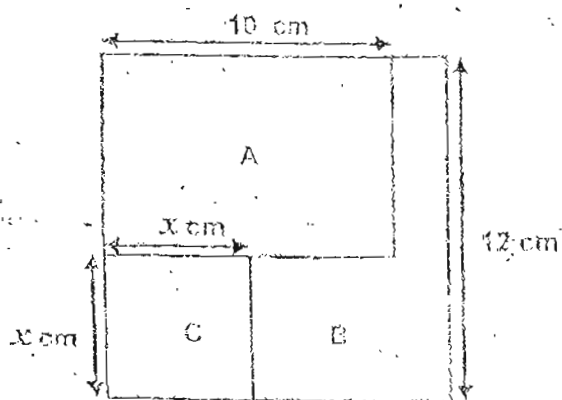
38. A laser printer prints at a constant rate of 10 copies in 10 seconds. How many copies can it print in an hour?

Answer: \_\_\_\_\_ [2]

39. A square of side 12 cm is divided into parts A, B and C.

(a) Find the total area of A and B in terms of  $x$ .  
Leave your answer in the simplest form.

(b) If  $x = 5$ , find the area of B.



Answer: a) \_\_\_\_\_ [1]

b) \_\_\_\_\_ [2]



40. Ahmad and his sister each has a sum of money. When Ahmad gives \$120 to his sister, he has 3 times as much money as his sister. When Ahmad gives another \$40 to his sister, he has \$240 more than his sister. How much money does his sister have at first?

Answer: \_\_\_\_\_ [3]

41. 0.6 of Mary's marks is the same as 1.5 that of Raja's. What is the ratio of Raja's marks to their total marks?

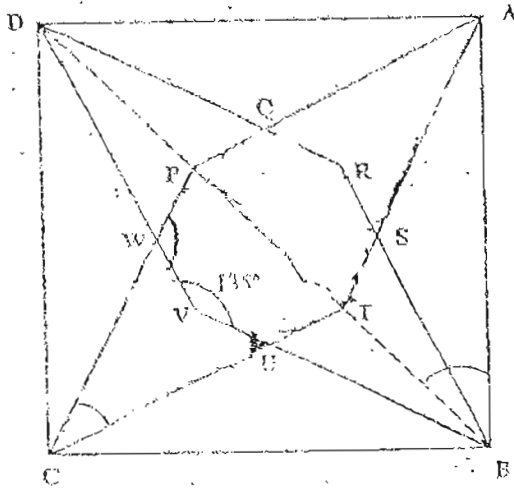
Answer: \_\_\_\_\_ [3]

42. The figure below is made up of a square ABCD and two rhombuses ATCP and DRBV.

Given that  $\angle BVD = 135^\circ$  and  $AT = BR$ , find

(a)  $\angle PCT$ ,

(b)  $\angle AED$ .



Answer: a) \_\_\_\_\_ [2]

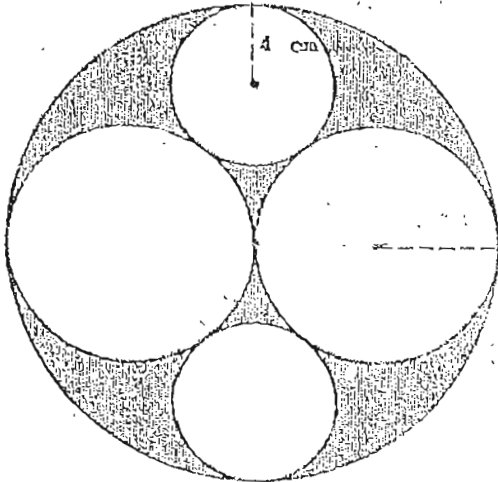
b) \_\_\_\_\_ [2]

43. The figure below is made up of one big circle, two identical medium circles and two identical small circles. The ratio of the radius of the small circle to the radius of the medium circle is 2 : 3.

(a) What is the total area of the unshaded portions in the figure?

Give your answer in terms of  $\pi$ .

(b) What fraction of the big circle is unshaded?



Answer: a) \_\_\_\_\_ (2)

b) \_\_\_\_\_ (2)

44. A 6-sided dice with equal chances has the numbers 1, 2, 3, 4, 5 and 6 written on its faces. The dice is tossed twice and the numbers obtained are recorded accordingly. What is the maximum number of ways for the sum of the two recorded numbers to be a number that has 2 factors only?

Answer: \_\_\_\_\_ [4]

45. The product of the ages of 3 Nanyang Primary School pupils is 693. Express the age of the youngest pupil as a fraction of the sum of the other 2 pupils.

Answer: \_\_\_\_\_ [4]

46. Fanny had a total of 150 hairclips and headbands. She bought another 50 more hairclips and gave away  $\frac{1}{3}$  of her headbands. The number of hairclips and headbands became the same after that. What was the ratio of the number of headbands to the number of hairclips at first?

Answer: \_\_\_\_\_ [4]

47. A tank measuring 30 cm by 20 cm by 27 cm contained 10.224 litres of water. 9 cubes of the same size were placed into the tank and the water level rose to  $\frac{2}{3}$  the height of the tank (as shown in figure A).

(a) Find the volume of a cube.

(b) The cubes were then re-arranged to form the solid figure as shown in figure B. How far is the top of the solid figure away from the water surface?

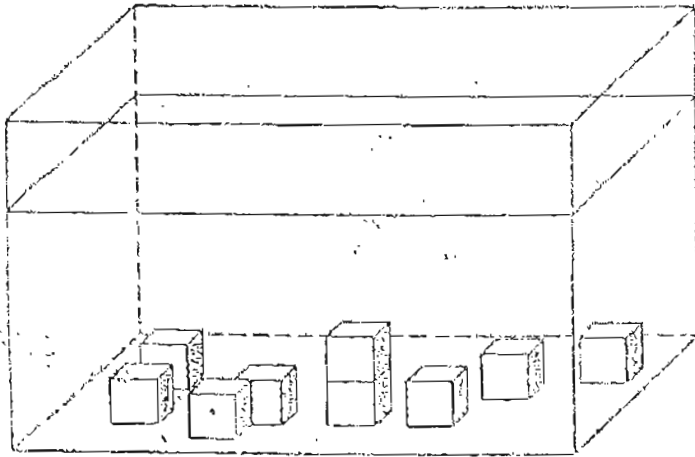


Figure A

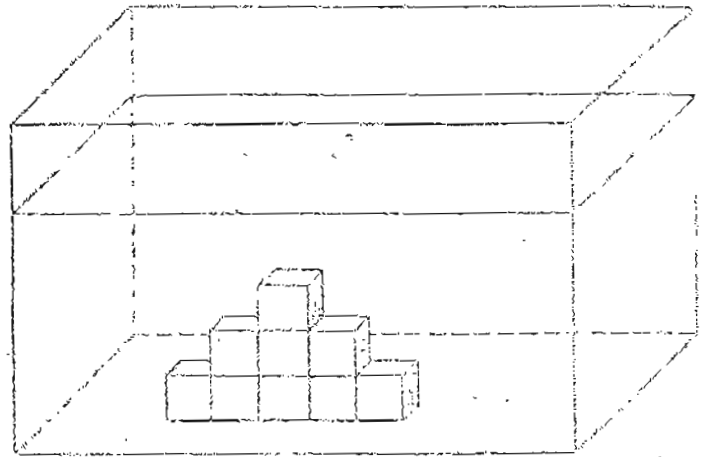


Figure B

Answer: a) \_\_\_\_\_ [3]

b) \_\_\_\_\_ [2]

48. A sum of money was shared by 3 boys, Weiwei, Xavier and Yishen. Weiwei received 150% of what Xavier received plus \$6. Yishen received  $\frac{1}{3}$  of what Weiwei received plus \$4. Yishen received \$2 less than Xavier.

- (a) What percentage of the sum of money did Weiwei receive?
- (b) How much would Xavier have to give to Yishen so that both of them have the same amount of money?

Answer: a) \_\_\_\_\_ [3]

b) \_\_\_\_\_ [2]



49. Mr Lee and Mr Tan both drove from Town X to Town Y. Mr Lee started his journey at 10.00 a.m. travelling at an average speed of 75 km/h. Some time later, Mr Tan started his journey. At 12.00 noon, Mr Tan overtook Mr Lee. When Mr Tan reached Town Y at 2.00 p.m., Mr Lee was still 50 km from Town Y.

Find (a) Mr Tan's average speed,

(b) The time at which Mr Tan started his journey.

Answer. a) \_\_\_\_\_ (2)

b) \_\_\_\_\_ (3)

50. Study the following patterns to answer the following questions.



Figure 1



Figure 2

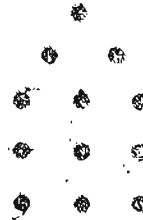


Figure 3

(a) Complete the following table to find the unknowns  $a$  and  $b$ .

Figure	1	2	3	4	...	10
Number of dots	1	5	$a$	$b$		?

(i) (ii)

(b) Show with workings the number of dots required for figure 10.

Answer: (a) (i) \_\_\_\_\_ [1]

(ii) \_\_\_\_\_ [1]

(b) \_\_\_\_\_ [2]


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Please Check Carefully

Setters: Ms Mok Pui Terk, Ms Serene Yeo and Mrs Lilian Eng

NANYANG PRIMARY SCHOOL  
 PRELIMINARY EXAMINATION 2004  
 MATHEMATICS  
 PRIMARY SIX

2004

- |                 |   |   |
|-----------------|---|---|
| 1) 2            | 28) $(196 - 49\pi)$                         |   |
| 2) 3            | 29) 18 students                             |   |
| 3) 3            | 30) 6                                       |   |
| 4) 2            | 31) 5005                                    |   |
| 5) 4            | 32) 720                                     |   |
| 6) 3            | 33) 132                                     |   |
| 7) 4            | 34)   |  |
| 8) 3            |   |   |
| 9) 3            |   |   |
| 10) 2           | 35) Tuesday                                 | Wednesday   |
| 11) 2           | 36) 1.4                                     |   |
| 12) 3           | 37) $4 \text{ cm}^2$                        |   |
| 13) 4           | 38) 3600 copies                             |   |
| 14) 1           | 39) a) $(144 - \frac{x^2}{2}) \text{ cm}^2$ |   |
| 15) 1           | b) 49 cm                                    |   |
| 16) 150         | 40) \$ 40                                   |   |
| 17) $(27 + 2k)$ | 41) 2 : 7                                   |   |
| 18) 6.6         | 42) $45^\circ$                              |   |
| 19) 375         | b) $45^\circ$                               |   |
| 20) 8           | 43) a) $(1047\pi) \text{ cm}^2$             |   |
| 21) 1.8         | b) $13/18$                                  |   |
| 22) 55          | 44) 15 ways                                 |   |
| 23) 20          | 45) $7/10$                                  | 49) a) 100 km/h   |
| 24) 9           | 46) 4 : 1                                   | b) 10.30 a.m.   |
| 25) February    | 47) a) $64 \text{ cm}^3$                    | 50) a) i) 12 dots   |
| March           | b) 6 cm                                     | ii) 22 dots   |
| 26) 60          | 48) a) 50%                                  | b) 145 dots   |
| 27) 100         | b) \$ 1                                     |   |