NANYANG PRIMARY SCHOOL

PRELIMINARY EXAMINATION 2005

PRIMARY 6

MATHEMATICS

TIME: 2 HOUR 15 MINUTES

Section A	/ 25	**Total:**	**/100**
Section B	/ 20		
Section C	/ 55		

Name: _____ (.)

Class: Primary 6 (   )

Parent's Signature: _____

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

SHOW ALL WORKINGS IN THE SPACES PROVIDED.

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.   There are _____ quarter millions in 1 000 000.

    (1)   25

    (2)   10

    (3)   8

    (4)   4

2.   For every 10 parcels delivered, 2 were delivered late. What percentage of the parcels were delivered on time?

    (1) $16\frac{2}{3}\%$

    (2)   20%

    (3)   80%

    (4) $83\frac{1}{3}\%$

3.   Kenric took 6 hours to complete a journey driving at a certain average speed. How long would he take to complete the same journey if he drove at half his previous speed?

    (1)   15 hours

    (2)   12 hours

    (3)   3 hours

    (4)   9 hours

1

4. The cuboid shown below has a volume of 840 m³. Find its length.

(1)   168 m

(2)   105 m

(3)   40 m

(4)   21 m
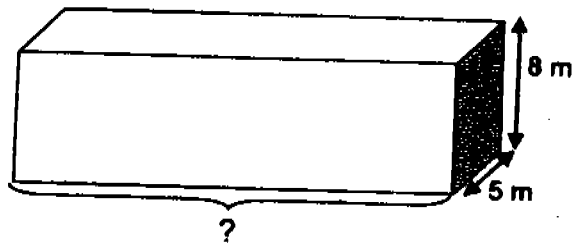
5. The number 24 is made up of the digits '2' and '4'. Which of the following numbers is twice the sum of its digits?

(1)   15

(2)   18

(3)   26

(4)   36

6. A pencil costs k cents and a ruler costs 30 cents more. Li Peng wants to buy 3 pencils and 2 rulers but he is short of 20 cents. How much money does Li Peng have?

(1) $(3k + 40)$ cents

(2) $(3k + 80)$ cents

(3) $(5k + 40)$ cents

(4) $(5k + 80)$ cents

2

7.	If C : D = 2 : 5 and D : E = 2 : 5, what fraction of C is E?

(1)	$\dfrac{4}{25}$

(2)	$\dfrac{2}{5}$
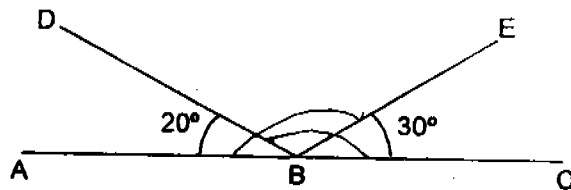
(3)	$\dfrac{5}{2}$

(4)	$\dfrac{25}{4}$

8.	In the figure not drawn to scale, AC is a straight line. Find the difference in size between ∠ABE and ∠CBD.

(1)	10°

(2)	20°

(3)	30°

(4)	40°

9.	The total length of 4 pieces of string is 42.8 m. The average length of 2 of them is 9.7 m. Find the average length of the remaining pieces.
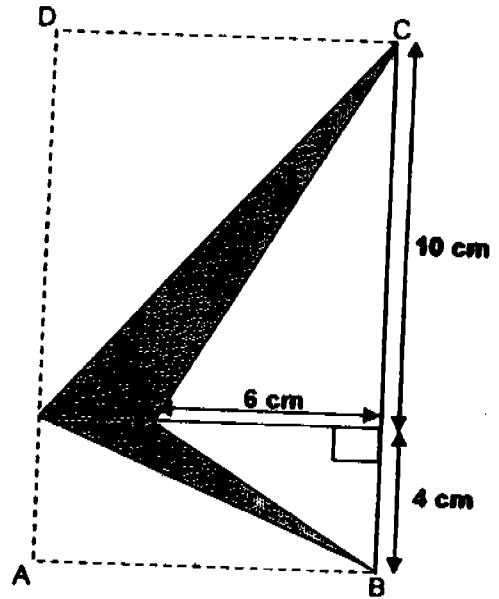
(1)	75.9 m

(2)	33.1 m

(3)	23.4 m

(4)	11.7 m

3

10. Find the shaded area in the figure.

(1) 56 cm²

(2) 42 cm²

(3) 28 cm²

(4) 14 cm²

11. $\frac{5}{6}$ of the pupils in Primary 4 wear spectacles while $\frac{4}{7}$ of the pupils in Primary 5 wear spectacles. The total number of pupils in the 2 levels is the same. Find the ratio of the number of pupils in Primary 4 who do not wear spectacles to those in Primary 5 who do not wear spectacles.

(1) 1 : 3

(2) 5 : 4

(3) 7 : 18

(4) 35 : 24

4

12. Peter and Jane went jogging round a circular track as shown in the diagram. The table below shows the number of rounds each of them ran round the track on different days. On which day did the two of them complete the same distance?

Day	No of rounds completed by	
	Peter	Jane
Monday	4	2
Wednesday	2	4
Friday	4	6
Sunday	3	5

Peter
Jane
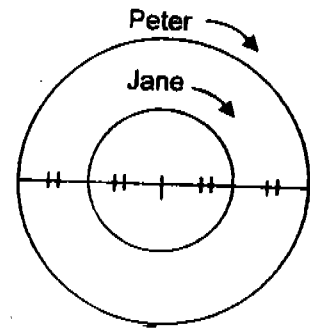
(1)   Monday

(2)   Wednesday

(3)   Friday

(4)   Sunday

13. The table shows the parking charges at a carpark.

Parking Charges	
First hour	Free
Second hour	$2.00
Every additional $\frac{1}{2}$ hour or less	80¢

How much must Mr Ramu pay for parking his car from 11 a.m. to 3.45 p.m. on the same day?
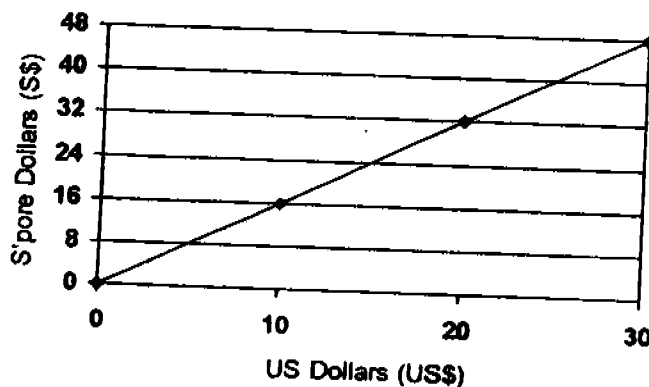
(1) $6.00

(2) $6.80

(3) $7.60

(4) $8.40

14. In the figure not drawn to scale, ABCD is a rhombus and BCE and CDE are isosceles triangles. ∠BCD = 100° and ∠DCE = 94°. Find ∠ABE.

(1)   7°

(2)   87°

(3)   97°

(4)   107°
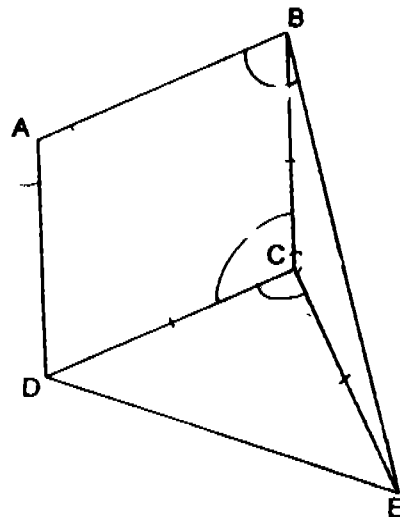
15. The line graph shows the approximate exchange rate between US and Singapore dollars. The table below it shows the entrance fees to a tourist attraction in Singapore.

Price of Entrance Ticket (in S$)	
Adult	$12
Child	$8

Mr Nelson wants to buy 3 adult tickets. He has some US$ and S$4 with him. How much US$ must he exchange so that he has just enough S$ for the entrance fees?

(1)   US$30

(2)   US$25

(3)   US$20

(4)   US$15

6

Name: _____ _____ (   )   Class: Pr 6 (   )

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. Write down 2 common factors of 18 and 48.

Answer: _____

17. Arrange these numbers in decreasing order.

2.801,   2.018,   2.108,   2.81

Answer: _____ . _____

18. $505 \times 20 = 500 \times A + A + A + A + A + A$. Find the value of A.

Answer: _____ _____

19. What is the missing number in the box?

$6 : 15 = 10 : \boxed{}$

Answer: _____

7

20. The sum of 3 consecutive even numbers is 468. What is the smallest number?

Answer: _____

21. A TV programme started at 11.50 a.m. and ended at 2.25 p.m. How long was the programme?

Answer: _____ h _____ min

22. Find the value of $\frac{12}{35} \div 2$. Give your answer as a fraction in its simplest form.

Answer: _____

23. Ten such pieces of wallpaper are used to cover a wall completely without overlapping. Find the area covered by the wallpaper. Give your answer in its simplest form.

$\frac{1}{2}$ m

$\frac{1}{4}$ m

Answer: _____ m^2

8
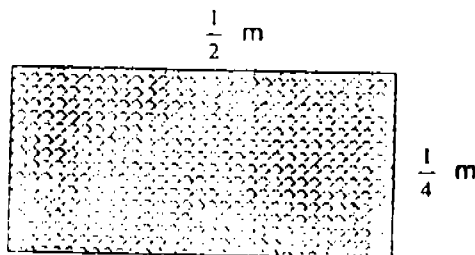
24. Linda's monthly salary is 40% of Joan's monthly salary. Find Joan's monthly salary if their combined monthly salary is $14 000.

Answer: $ _____

25. The pie charts show the results of a survey conducted with some pupils to find out if there is too much violence in the media. Equal number of boys and girls took part in the survey.
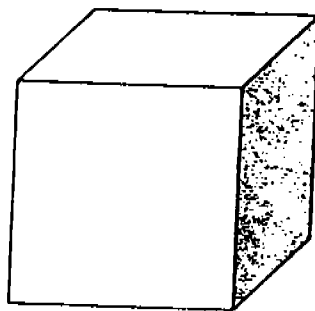
Girls

No 44%   Yes 56%

Boys

Yes 28%   No 72%
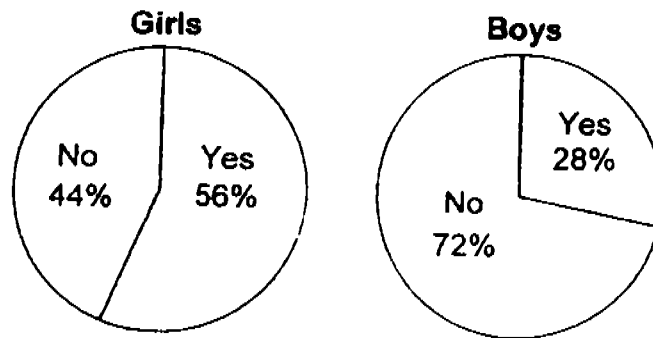
From the survey results, did the pupils think there was too much violence in the media? Write "**Yes**" or "**No**" in the answer blank.

Answer: _____

9

26. The side of Cube A is 2 cm. The side of Cube B is thrice the side of Cube A. Find the ratio of the volume of Cube A to the volume of Cube B. Give your answer in its simplest form.
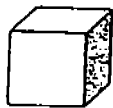
Cube A   Cube B

Answer: _____ ____

27. A solid block of metal 25 m by 10 m by 4 m was melted down and re-cast into cubes of sides 3 m each. What was the volume of the remaining liquid metal?
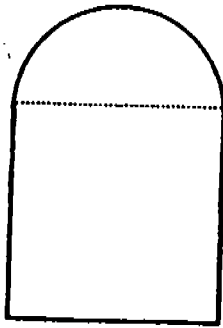
Answer: _____ m³

28. A man drives at a speed of 87 km/h. How far can he travel in 20 minutes?

Answer: _____ km

29. Find the area of a quarter circle with a radius of 14 cm. Leave your answer in terms of π.

Answer: _____ cm²

10

30. The figure below is made up of a semi-circle of radius 20 cm and a square. Find its perimeter. (Take $\pi = 3.14$)
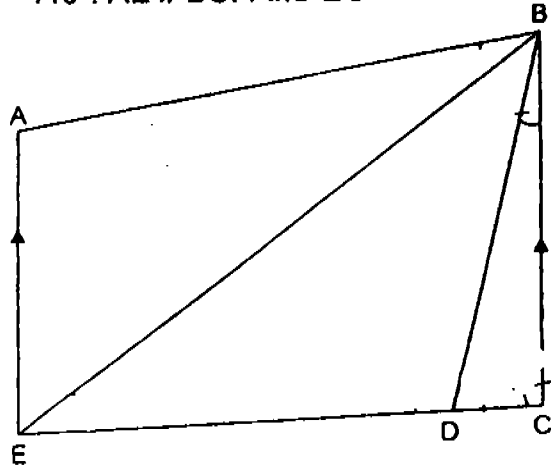
Answer: _____ cm

31. Study the following diagrams. Identical mugs and bowling pins are used. Express the weight of a can of soda as a fraction of the weight of a mug. Give your answer in its simplest form.
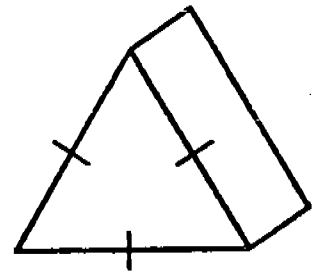
Mugs

Soda

Answer: _____

11
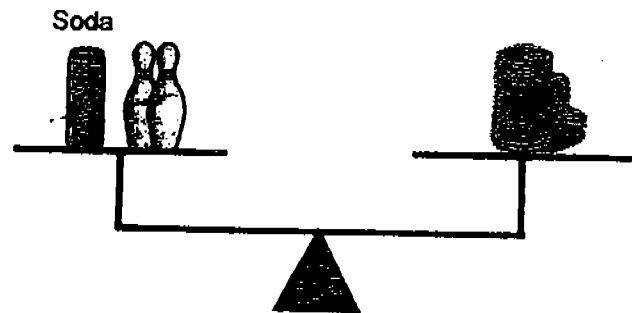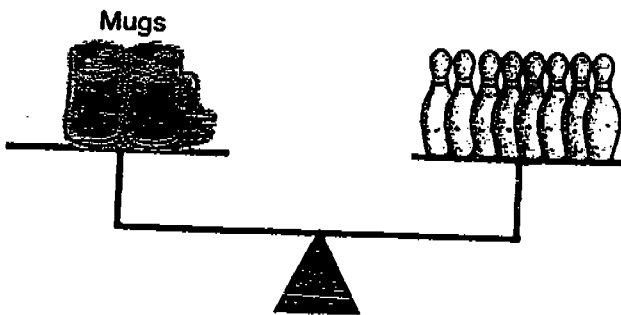
32. The figure shown below is not drawn to scale. ∠CBD = 15°, ∠AEB = 65° and ∠BDE = 110°. AE // BC. Find ∠BED.
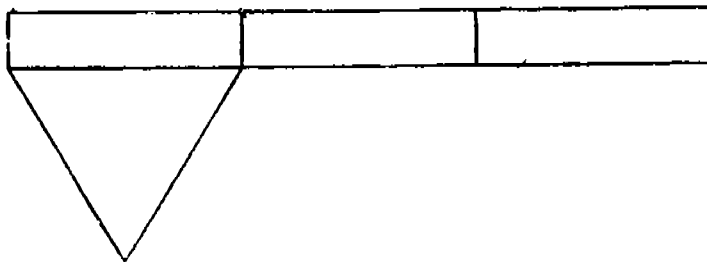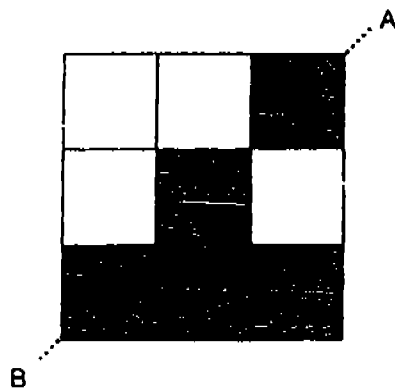

Answer: _____ °

33. The diagram below shows an incomplete net of the solid figure shown on the right. Complete the net of the solid figure.
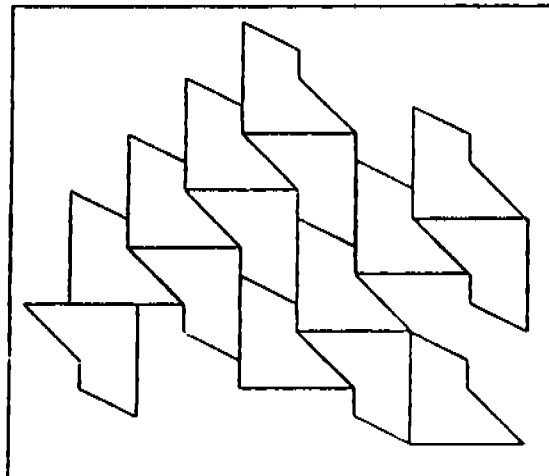

Solid figure

34. Shade the least number of squares to complete the figure which has the dotted line AB as the line of symmetry.

35. Two unit shapes of the tessellation shown in the diagram below are not correctly placed. Shade them.
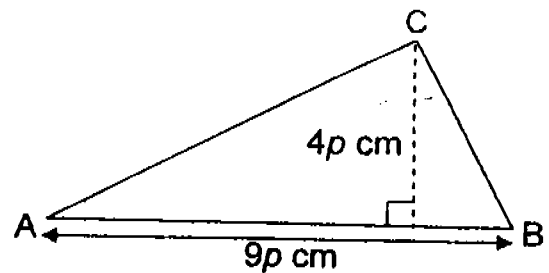

13

P6 Prelims 2005

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)

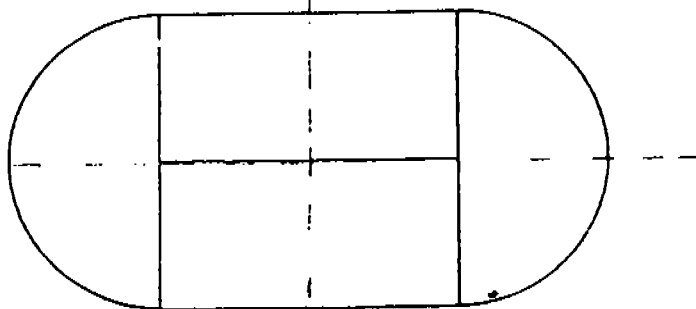36.   Find the area of $\triangle ABC$ in terms of p.

C

4p cm

A

9p cm

B

Answer: _____[2]

37.   Susan had $120 less than Alice. After Alice spent $210, Susan had 6 times as much money as Alice. How much money did Susan have?

Answer: _____[2]

14

38. The figure is made up of 2 identical rectangles and 2 identical semicircles. Draw **all** its line(s) of symmetry in the figure. [2]

39. Three pails A, B and C each contained a certain amount of water. When $\frac{1}{3}$ of the water in Pail A and $\frac{1}{4}$ of the water in Pail B were poured into Pail C, the 3 pails each had 9.6 litres of water. How many millilitres of water were there in Pail C at first?

Answer: _____ [3]

15

40. Aii and Bala had 44 marbles. Colin and Ali had 52 marbles. The ratio of the number of marbles that Ali had to the total number of marbles that Bala and Colin had was 5 :14. How many marbles did Ali have?

Answer: _____[3]

41. The figure is made up of a rectangle ABEF and a square BCDE of side 12 cm. The perimeter of the square is 80% of the perimeter of the rectangle. Find the area of the shaded part.
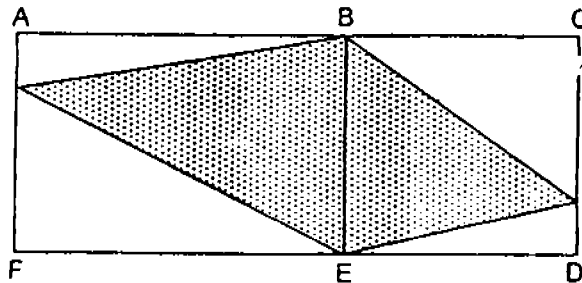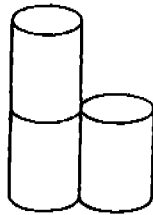

Answer: _____[3]

42. Jennifer and Tommy had an equal amount of money. Each day, Jennifer spent $28 and Tommy spent $35. When Jennifer had $70 left, Tommy had $\frac{1}{5}$ as much money left as Jennifer. How much money did Tommy have at first?
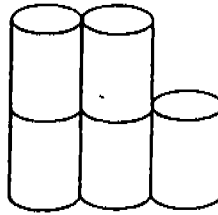
Answer: _____[4]

17

68

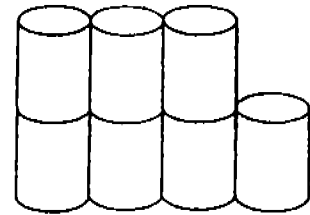43.   The sequence of patterns below is formed with cans of drink.

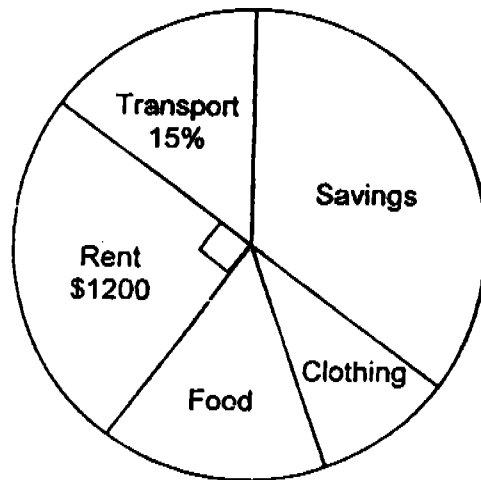Pattern 1   Pattern 2   Pattern 3   Pattern 4

(a)   How many cans of drink are needed for Pattern 7?

(b)   Peter has 100 cans of drink. He wants to use them to form Pattern 50.
       How many can(s) of drink will be left unused?

(c)   Find the pattern that has a total of 205 cans of drink.

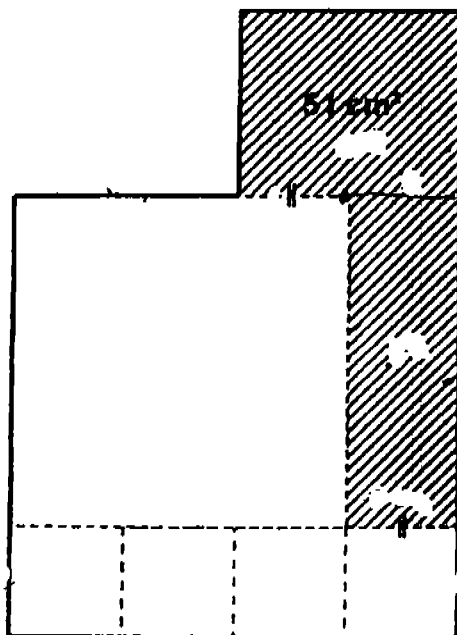Answer:(a) _____ [1]

(b) _____ [1]

(c) Pattern _____ [2]

18

44. The graph shows how Amy used her monthly salary in May.

(a) If the ratio of the amount spent on food to the amount spent on clothing is 5 : 3, how much money did Amy spend on clothing?

(b) How much money did Amy spend on transport?

(c) In June, her salary increased by 5% and she saved this entire amount. If she spent the same amount of money in June as in May, what fraction of her June salary did she save?
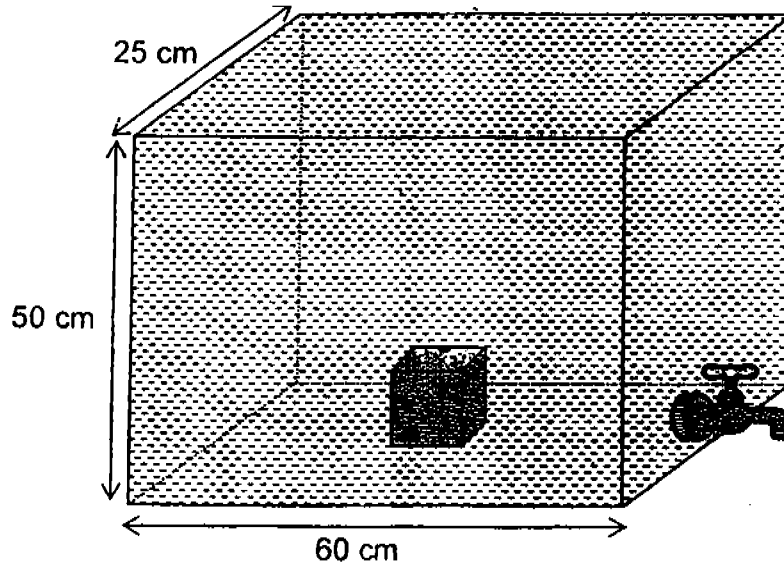
Answer:(a) _____ [1]

(b) _____ [1]

(c) _____ [2]

19

45. There are 4 identical squares in the figure. The area of the shaded part is 51 cm². The total area of the four small squares is 36 cm². Find the perimeter of the figure.

Answer: _____ [4]

20

46. A rectangular tank with a solid metal cube inside was filled with water to its brim. The tap at the side of the tank was turned on and water flowed out of the tank at a rate of 1.5 litres per minute. It took 42 minutes for the height of the water level to drop to the top of the solid metal cube.

25 cm

50 cm

60 cm

(a) Find the volume of the solid metal cube.

(b) How many litres of water were in the tank when the height of the water level dropped to the top of the solid metal cube?
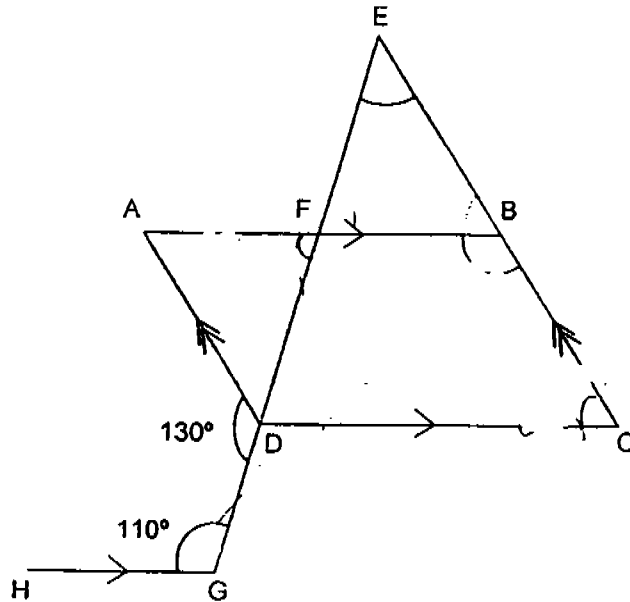
Answer: (a) _____ [3]

(b) _____ [1]

47. In the figure not drawn to scale, ABCD is a parallelogram and CDE is a triangle. EG is a straight line and HG // DC. ∠DGH = 110° and ∠ADG = 130°

(a) Find ∠ABC.

(b) Find ∠FEB.
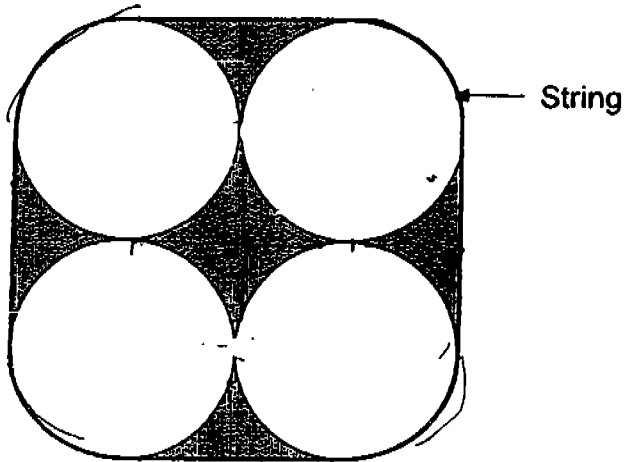
48. The figure shows the side view of 4 identical cylindrical tubes held tightly together with a string. The diameter of each circular face is 28 cm.

(a)   Find the length of the string.

(b)   Find the shaded area.

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

String

Answer: (a) _____ [2]

(b) _____ [3]

23

49. A school library had 1600 books. The English collection was as large as the total number of Malay and Chinese books. The librarian bought 360 new books. The ratio of the number of Chinese books bought to the number of Malay books bought to the number of English books bought was 5 : 2 : 8. As a result, the number of Chinese books increased by 25%.

(a) By what percentage was the number of English books increased?

(b) How many Malay books were there in the library after the purchase?

Answer: (a) _____ _____ [2]

(b) _____ _____ [3]

24

50. A van left Metropolis Town and travelled towards Gotham Town at an average speed of 80 km/h. An hour later, a car left Metropolis Town and travelled towards Gotham Town at an average speed of 100 km/h. The car passed Keystone Town, which was halfway between Metropolis Town and Gotham Town, 30 minutes earlier than the van. The car reached Gotham Town at 10 p.m. At what time did the van leave Metropolis Town for Gotham Town?

Answer: _____ [5]

☺ *End of Paper* ☺
Please Check Carefully

25

NANYANG PRIMARY SCHOOL
PRELIMINARY EXAMINATION 2005
PRIMARY 6
MATHEMATICS

1) 4

2) 3

3) 2

4) 4

5) 2

6) 3

7) 1

8) 1

9) 4

10) 4

11) 3

12) 2

13) 2

14) 2

15) 3

16) 3, 6

17) 2.81, 2.801, 2.108,   2.018

18) 20

19) 25

20) 154

21) 2 hours 35 minutes

22) 6/35

23) 1.25

24) 10000

25) No.

26) 1 : 27

28) 29

29) 49 π

30) 182.8

31) 1/2

32) 20

33)

34) shade 2 small squares

35)

36) $18p^2$ cm^2

37) $ 108

38)

39) 1600 ml   40) 20 marbles

41) 180 cm^2 42) $ 294

43) a) 13 cans   b) 1 can   c) 103

44) a) $450   b) $ 720   c) 8/21

45) 56 cm

46) a) 512 cm^3 b) 11.488 litres

47) a)   b) 50°

48) a) 2m   b) 504 cm^2

49) 24%   b) 368 books

50) 9.00 a.m.