NAN HUA PRIMARY SCHOOL
PRELIMINARY EXAMINATION – 2008
PRIMARY 6

MATHEMATICS

BOOKLET A

15 Multiple Choice Questions (20 marks)

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

INSTRUCTIONS TO CANDIDATES

1. Write your name and index number in the space provided.
2. Do not turn over the page until you are told to do so.
3. Follow all instructions carefully.
4. Answer all questions.
5. Shade your answers in the Optical Answer Sheet (OAS) provided.

Marks Obtained

Booklet A		/20
Booklet B		/80
Total		/100

Name: _____ ( )

Class: P 6 _____

Date : 19 August 2008 Parent's Signature: _____

60

Section A (20 marks)

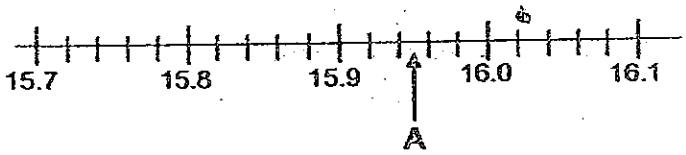
Questions 1 to 10 carry 1 mark each. Questions 11 to 15 carry 2 marks each. For each question, 4 options are given. Only one of them is correct. Make your choice (1, 2, 3 or 4). Shade the correct oval in the optical answer sheet.

1. Which one of the following decimals is the smallest?

(1) 0.3
(2) 0.29
(3) 0.045
(4) 0.178

( )

2. Look at the number line below.



What is the value of A?

(1) 15.95
(2) 15.94
(3) 15.93
(4) 15.92

( )

3. If $74.5 \div 5 = 14.9$, what is the missing number in

$74.5 \div \square = 0.149$?

(1) 5
(2) 50
(3) 500
(4) 5000

( )

61

4. Simplify $17p - 20 - 9p + 6$.

(1) $26p + 14$
(2) $26p - 14$
(3) $8p + 14$
(4) $8p - 14$

( )

5. Find the value of $(15 - 20 + 13) + 12 \div 2$

(1) 10
(2) 14
(3) 15
(4) 24

( )

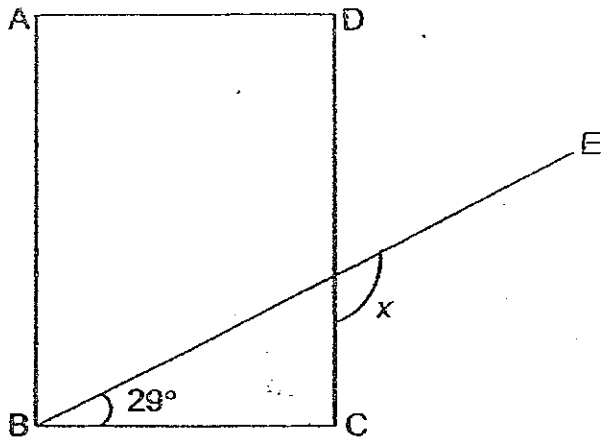
6. If $x : y = 4 : 3$ and $y : z = 2 : 9$, what is $x : z$?

(1) 4 : 9
(2) 8 : 6
(3) 6 : 27
(4) 8 : 27

( )

12

7. ABCD is a rectangle. Find $\angle x$.



(1) 29°
(2) 61°
(3) 119°
(4) 151°

( )

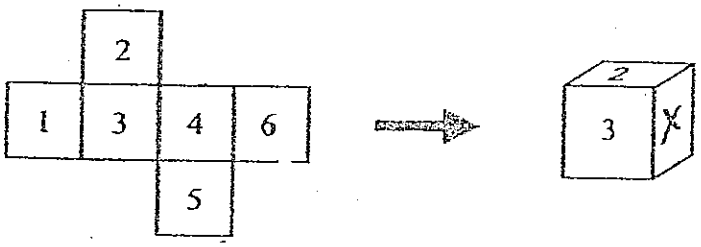
8. Pipe A takes 2 h to fill up a pool. Pipe B takes 4 h to fill up the same pool. If both pipes are used together how long does it take to fill up the pool?

(1) $\frac{3}{4}$ h
(2) $1\frac{1}{3}$ h
(3) 2 h
(4) 6 h

( )

63

9. Below is the net of a cube



What is the number that will be seen opposite the face marked X when it is folded up?

(1) 1
(2) 5
(3) 6
(4) 4

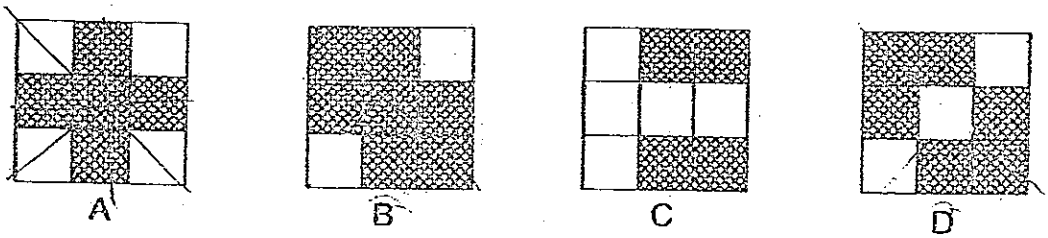
( )

10. Alex's allowance is $\frac{3}{4}$ of Ben's. Derrick's allowance is $\frac{2}{3}$ of Alex's.
If Ben's allowance is $48, what is Derrick's allowance?

(1) $36
(2) $32
(3) $24
(4) $12

( )

11. Which of the following figure(s) has exactly 2 lines of symmetry?



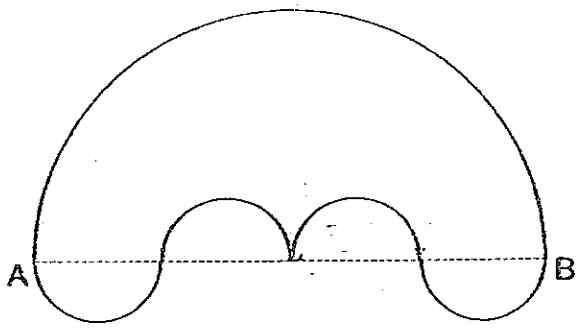
(1) B only
(2) D only
(3) A and B only
(4) B and D only

( )

64

12. The figure is made up of 1 big semi arc and 4 identical small semi arcs. The length of diameter AB is 28 cm. Find the perimeter of the figure.

[Take $\pi = \frac{22}{7}$]



(1) 22 cm
(2) 44 cm
(3) 88 cm
(4) 176 cm

( )

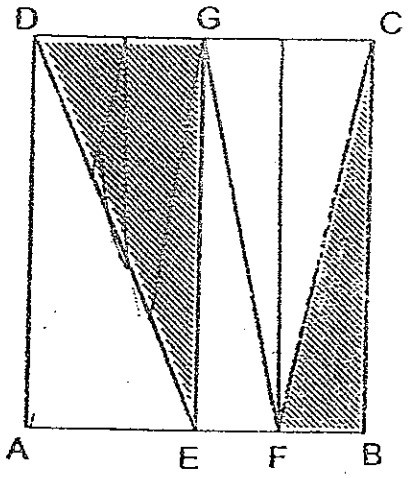
13. The average mark of Sandy's math tests was 78. When one of the test marks was increased by 12, the average mark became 82. How many math tests did she take?

(1) 36
(2) 48
(3) 3
(4) 4

( )

65

14. ABCD is a rectangle. Point E is halfway between point A and point B, point F is halfway between point B and point E, and point G is halfway between point C and point D. What percentage of the figure is unshaded?



(1) 25 %
(2) 37.5 %
(3) 62.5 %
(4) 75 %

( )

15. Peter cycled 20 minutes at an average speed of 18 km/h. He then continued at an average speed of 20 km/h for $\frac{2}{5}$ h. How far did he cycle?

(1) 6 km
(2) 8 km
(3) 14 km
(4) 48 km

( )

NAN HUA PRIMARY SCHOOL

PRIMARY SIX PRELIMINARY EXAMINATION 2008

MATHEMATICS

BOOKLET B

Marks: / 80

Name : _____ ( )

Class : P 6 ____

SECTION B

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. What is the missing number in the box?

$$\frac{1}{3} + \frac{1}{3} + \frac{1}{3} + \frac{1}{3} \div \frac{1}{3} = \square \times \frac{1}{3} + 1$$

Answer : _____

17. Find the value of 36.3 ÷ 6.

Answer : _____

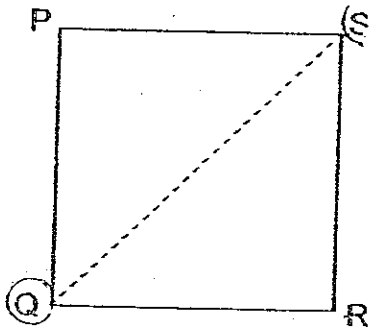
67

18. Find the value of

$$\frac{4c+8}{9-c} \quad \text{when } c = 6$$

Answer : _____

19. PQRS is a square with area 72 cm². Find QS



Answer : _____ cm

20. The average of 5 consecutive numbers is 124. Write down the smallest number.

Answer : _____

68

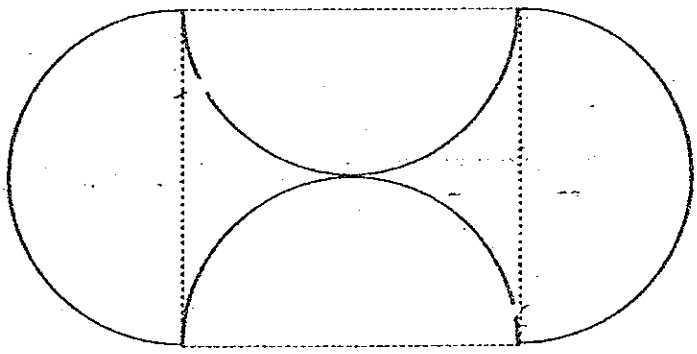
21.

A	B	C	D
1	5	9	13
29	25	21	17
33	37	41	45
61	57	53	49

The number "85" will appear in column _____

Answer : _____

22. The figure is made up of 4 identical semi-circular arcs of diameter 14 cm. Find the area of the figure.
[Take $\pi = \frac{22}{7}$]



Answer : _____ cm^2

69

23. A table-tennis training session started at 8.23 a.m. and lasted for 4 h 37 min. What time did the training end? Give your answer in 24-hour clock.

Answer : _____

24. 15 cats can catch 15 rats in 15 minutes. How long does it take 60 cats to catch 60 rats?

Answer : _____ min

25. A car travels from Town A to Town B at an average speed of 95 km/h. A lorry travels from Town B to Town A at an average speed of 65 km/h. They passed each other after 15 minutes. How far apart are the two towns?

Answer : _____ km

70

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)

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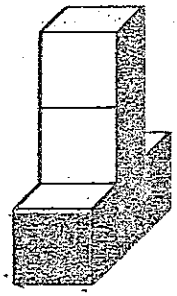
26. Mr Lee wants to buy firewood for a campfire. For every bundle of 25 pieces of firewood he buys, he gets 5 pieces of firewood free.
How many pieces of firewood must he buy in order to get 120 pieces of firewood?

Answer : _____ [2]

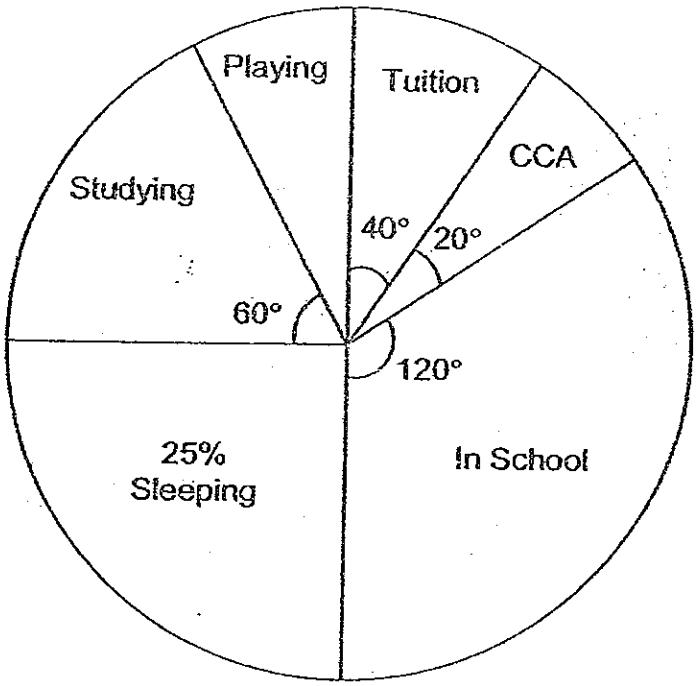
27. The solid below is made up of 5 identical cubes. The shaded area is 96 cm^2. Find the volume of 1 cube.



Answer : _____ cm^3 [2]

71

28. The pie chart below shows how Jonathan spent his time on a particular day.
How many hours did he spend playing?



Answer : _____ h [2]

29. Yanti bought a chicken and 3 ducks for $\$(7w + 9)$.
If the chicken cost \$4, what was the price of a duck?
Leave your answer in terms of w.

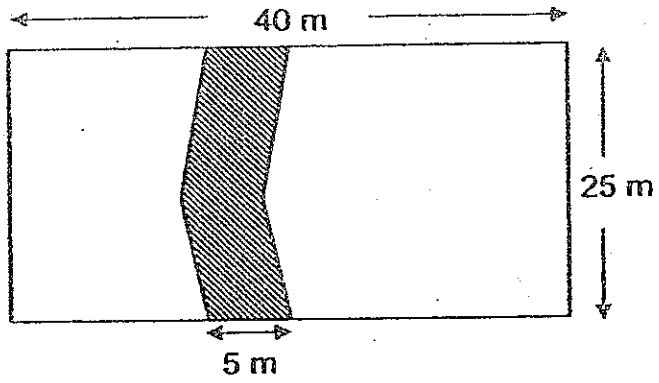
Answer : \$ _____ [2]

30. 45 pupils shared a box of sweets equally. 9 of these pupils gave all their sweets to the rest of the pupils. As a result, the rest of the pupils received 2 more sweets each. How many sweets were there in the box at first?

Answer : _____ [2]

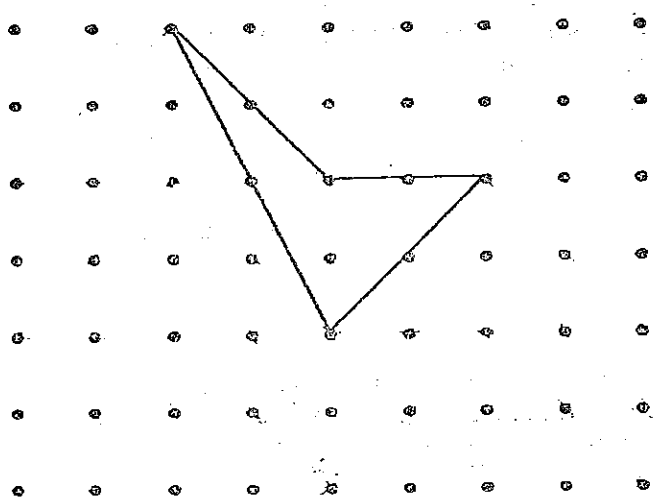
72

31. The figure shows a shaded walking path made up of 2 parallelograms in the rectangular field. Find the area of the unshaded parts of the field.



Answer : _____ m^2 / cm^2 [2]

32. Draw 5 more unit shapes on the grid provided to show tessellation. [2]

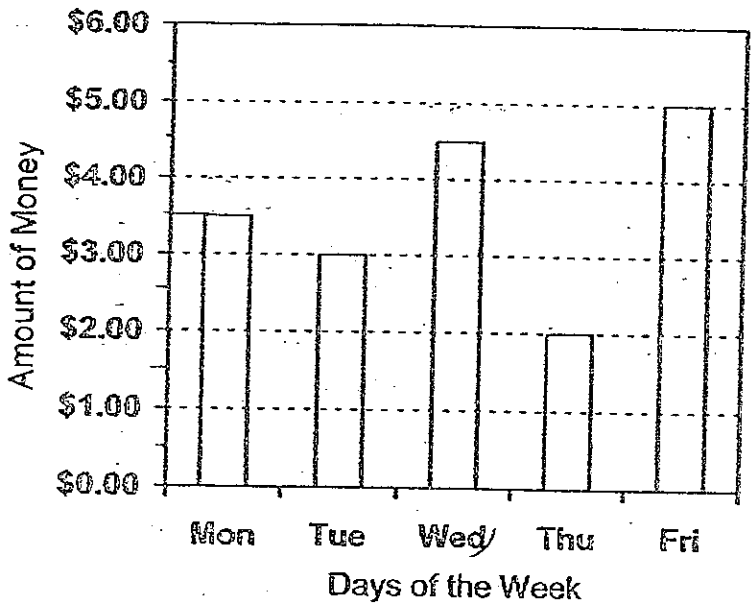


73

33. A styrofoam cuboid is 72 cm long 56 cm wide and 30 cm tall. 3-cm cubes are cut from it. What is the minimum wastage?

Answer : _____ cm^3 [2]

34. The graph below shows the amount of money Ai Ling spent over five days.



Ai Ling had $20 at first.
How much money did she have at the end of Wednesday?

Answer : $ _____ [2]

74

35. The daily car park charges for are as follows:

First hour	$2.00
Each subsequent half hour or part thereof	$1.25

Mr. Lim parked his car from 7.45 a.m. to 12.25 p.m.
How much was his parking charge?

Answer : $ _____ [2]

75

Section C

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 show in brackets [ ] at the end of each question or part-question.
(50 marks)

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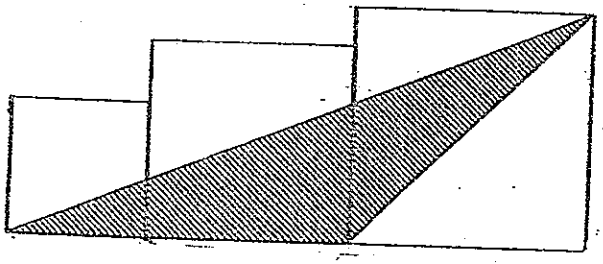
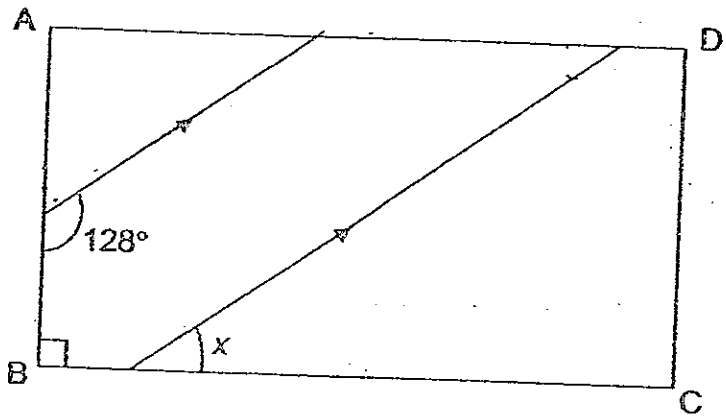
36. The figure is made up of 3 squares of lengths 3 cm, 5 cm and 6 cm. Find the area of the unshaded parts.



Answer : _____ [3]

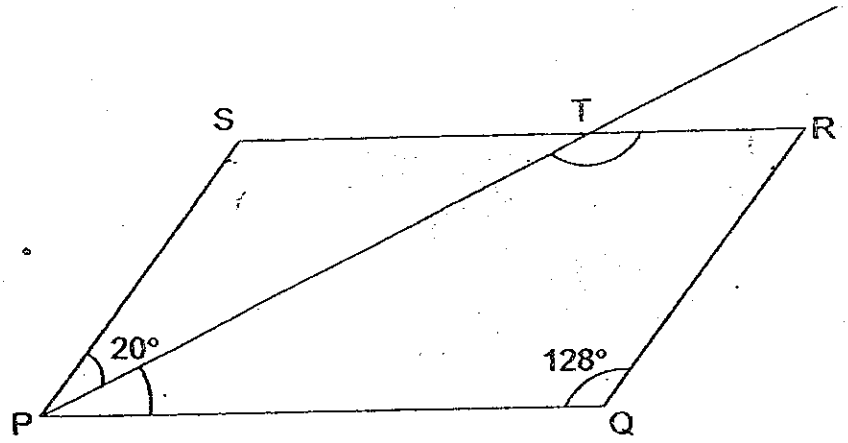
37. In the figure, ABCD is a rectangle. Find $\angle x$.



Answer : _____ [3]

76

38. In the diagram not drawn to scale, PQRS is a parallelogram.
Find
(a) ∠TPQ
(b) ∠PTR



Answer : (a) _____ [1]

(b) _____ [2]

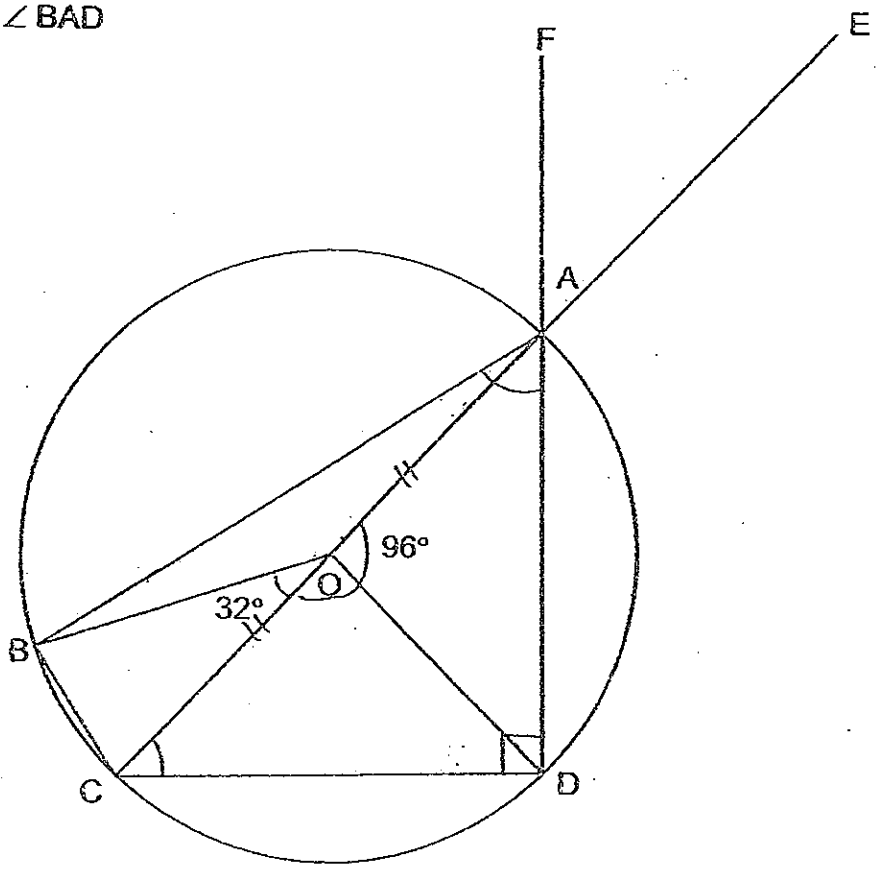
39. Adrian and John saved $880 altogether. $\frac{1}{4}$ of Adrian's savings is $40 more than $\frac{1}{5}$ of John's savings. What is John's savings?

Answer : _____ [3]

40 Patty earns 12.5% more than Tanny. If they earn $1156 altogether, how much does Patty earn?

Answer : _____ [3]

41 In the figure, not drawn to scale, CE & DF are straight lines. Point O is the centre of the circle.
Find
(a) ∠ OCD
(b) ∠ BAD



Answer : (a) _____ [1]

(b) _____ [2]

78

42. A factory was required to produce a certain number of toys in four days.

On the first day, it produced $\frac{1}{5}$ of the required number of toys.

On the second day, it produced another 20 toys.
On the third day, it produced as many toys as those produced on the first two days.
On the fourth day, it completed the remaining 8 toys.
How many toys did the factory produce in the four days?

Answer : _____ [4]

79

43. Alice left Town X at 8.30 a.m. and travelled towards Town Y at an average speed of 90 km/h. Belinda left Town X 45 minutes later and travelled towards Town Y along the same route at an average speed of 84 km/h.

a) How far apart were they at 10 a.m.?

b) If Belinda increased her speed by 18 km/h after 10 a.m., how long would it be before she overtakes Alice?

Answer : (a) _____ [1]

(b) _____ [3]

44. Amy, Beth and Carrie have some money. If Amy gives $3.50 to Beth, the two girls will have an equal amount of money. If Beth gives $3.50 to Amy, Amy will have thrice as much money as Beth. Carrie's share is the sum of the other two girls. How much money do they have altogether?

Answer : _____ [4]

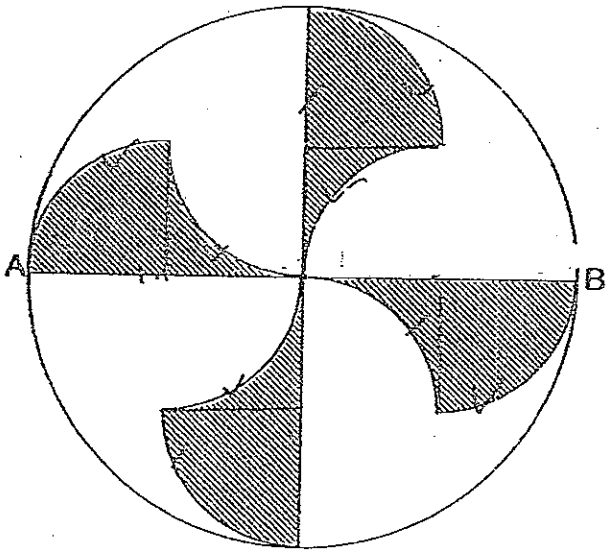
81

45. The figure below shows a big circle and 8 identical quarter arcs. Point O is the centre of the circle and the diameter AB is 20 cm long.

(a) Find the total area of the shaded parts in the figure.

(b) Find the perimeter of the shaded parts in the figure.

[Take $\pi = 3.14$]



Answer : (a)_____ [2]

(b)_____ [3]

82

46. The base of the container is a square of side 8 cm. Twelve 4-cm cubes are placed in the container. Water is then poured into the container until it is $\frac{5}{6}$ full. When all the cubes are removed without any loss of water, the water level drops to $\frac{2}{3}$ the height of the container.

(a) Find the volume of the twelve cubes.

(b) Find the height of the container.

2

Answer : (a) _____ [1]

(b) _____ [4]

3

83

47. Mathew put aside one 20-cent coin as his savings on the first day. The next day, he put aside three 20-cent coins as his savings. Each day he put aside two 20-cent coins more than the previous day.

(a) Complete the table below.

Day	Number of coins saved each day	Total number of coins
1	1	1
2	3	4
3	5	9
4		
5		

[2 marks]

(b) How many 20-cent coins did Mathew save by the 25th day?

(c) When Mathew had saved 121 coins altogether, what day would it be?

Answer : (b) _____ [2]

(c) _____ [1]

84

48 In a concert hall, $\frac{1}{7}$ of the audience were children. 75% of the adults were women. There were 280 more women than children.

(a) How many women were there in the hall? [2]

(b) During the interval, some men left the hall. As a result, 12% of the remaining audiences were men. How many men left the hall? [3]

Answer : (a) _____ [2]

(b) _____ [3]

85

ANSWER SHEET

EXAM PAPER 2008

SCHOOL : NAN HUA PRIMARY SCHOOL
SUBJECT : PRIMARY 6 MATHEMATICS

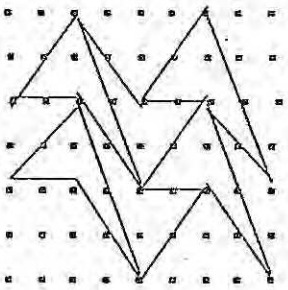
TERM : PRELIMINARY SA 2

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

16)2 17)6.05 18)$10_{2/3}$ 19)12cm 20)122

21)C 22)196cm_2 23)1300 24)15 min 25)40 km

26)100 pieces 27)63cm_3 28)2h 29)$\frac{(7w+5)}{3}$ 30)360

31)875 m_2 32)  33)4320 cm_3 34)$9

35)$12

36)3x3=9
5x5=25
6x6=36
34+36=70
½ x8x6=24
70-24=46
The area is 46cm_2

37)180° -128° =52°
90° +52° =142°
180° -142° =38° (∢x)
∢x is 38°

38)a)180° -128° =52°
52° -20° =32°
It is 32°
b)52° +32° +128° =212°
360° -212° =148°
It is 148°

39)Adrian's saving→A
John's saving→J

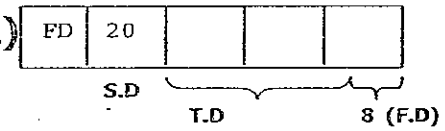
A+J=880
¼ A=$\frac{1}{5}$ J+40
$\frac{4}{4}$ A=$\frac{4}{5}$ J+160
$\frac{4}{5}$ J+J+160=880
$\frac{4}{5}$ J+$\frac{5}{5}$ J + 160=880
$\frac{9}{5}$ J + 160=720
$\frac{9}{5}$ J =720
$\frac{1}{5}$ J→720÷9=80
J→80x5=400
John's saving is $400.

40)100%+100%÷12.5%=212.5%
$1156÷212.5=$5.44
112.5%→112.5x$5.44=$612
Patty earned $612

41)a)180° -96° =84°
180° -84° =96°
96° ÷2=48°
∢OCD is 48°

b)∢CAD→180° -90° -48° =42°
∢BAO→32° ÷2=16°
42° +16° =58°
It is 58°

42)



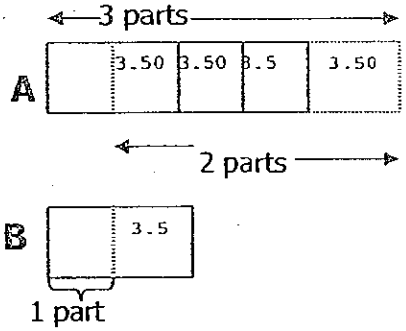
4 units=20+8÷20+1 unit
Second day 4th day 3rd day

4 units=48+1 unit
3 units→48
1 unit→48÷3=16
5x16=80
The factory produced 80 toys.

43)a)Alice 1½h
8.30a.m.——→10 a.m.
Distance travelled→1½ x90km/h=135km
Belinda 45min (¾ h)
9.15a.m.————→10a.m.
Distance travelled→ ¾h x 84km/h=63km
They were 72km apart.

43)b)Belinda's new speed→84km/h+18km/h=102km/h
Faster than Alice by→102km/h-90km/h=12km/h
Time needed→72km÷12km/h=6h
It would be 6h long.

44)<u>Amy,Beth</u>



2 parts→$3.50 x 4
1 part →$3.50x2=$7
Betty →$7+$3.50=$10.50
Amy →$10.50+$7=$17.50
Carrie →$10.50+$17.50=$28
Total amt. of money→$10.50+$17.50+$28=$56
They have $56 altogether.

45)a)length of 1 square
→20cm÷4=5cm
area of 1 square
→5cmx5cm=25cm$_2$
area of shaded parts
→25cm$_2$x4=100cm$_2$
The total area is 100cm$_2$

b)perimeter of 1 circle
→2x3.14x5cm=31.4cm
2 circle peri
→31.4cmx2=62.8cm
10cmx4=40cm
62.8cm+40cm=102.8cm
The perimeter is 102.8cm

46)a)Volume of 1 cube
→4cmx4cm=64cm$_3$
Volume of 12 cubes
→64cm$_3$x12=768cm$_3$
The volume of the twelve cubes is 768cm$_3$

b)768cm$_3$x6=4608cm$_3$
8cmx8cmx $\boxed{72}$ cm=4608cm$_3$
The height of the container is 72cm.

47)a)4) 7, 16
5) 9, 25

b)25th day→25x25=625
Mathew saved 625 coins.
c) $\boxed{11}$ x $\boxed{11}$ =121
it would be the 11th day.

48)a)6 units =4.5 units
100% 75%
7 units→280
1 unit →280÷7=40
Women→9x40=360
There were 360 women in the hall.

b)100%-12%=88%
88%→11x40=440
1% →440÷88=5
12%→12x5=60
40x3=120
120-60=60
60 men left the hall.