NAN HUA PRIMARY SCHOOL
SEMESTRAL EXAMINATION 1 – 2012
PRIMARY 6

MATHEMATICS

Paper 1

Section A: 15 Multiple Choice Questions (20 marks)

Section B: 15 Short Answer Questions   (20 marks)

Total Time for Paper 1:   50 minutes

INSTRUCTION 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 for Questions 1-15.
6. You are not allowed to use calculator for Paper 1.

Marks Obtained

Paper 1	Booklet A		/ 40
	Booklet B		
Paper 2			/ 60
Total			/ 100

Name : _____ (   )

Class : 6_____

Date :   10 May 2012   Parent's Signature : _____

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 OAS.

1   Round off 29.54 to the nearest tenth.

   (1)   29.0

   (2)   29.5

   (3)   29.6

   (4)   30.0

2.   ☆ □ △ △ ○ ○ ★ ★ □ ☆ ☆ ○

   What fraction of the stars is shaded?

   (1) $\frac{2}{5}$

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

   (3) $\frac{1}{6}$

   (4) $\frac{5}{6}$

3. 3 children shared half of a pizza. What fraction of the pizza did each child have?

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

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

   (3) $\dfrac{1}{3}$

   (4) $\dfrac{1}{6}$

4. The mass of Joyce is 48 kg. The mass of May is 56 kg. Find the ratio of Joyce's mass to their total mass.

   (1)   6 : 7

   (2)   7 : 6

   (3)   6 : 13

   (4)   7 : 13

5. Mr. Tan travelled at an average speed of 60 km/h for the whole journey. He took 1 hour to travel from Town A to Town B. He took 2 hours to travel from Town B to Town C. Find the distance between Town A and Town C.
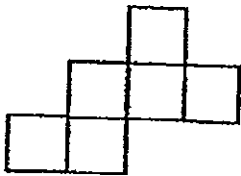
   (1)   20 km

   (2)   30 km

   (3)   120 km

   (4)   180 km
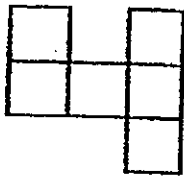
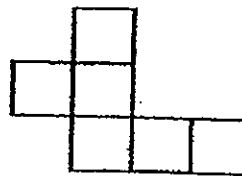6. Which one of the following is a net of a cube?

(1)

(2)

(3)

(4)

7. Mrs Tan has 8y sweets. She gives 3 sweets to each of her pupils and has 5 sweets left. Express the number of pupils she gives the sweets to in terms of y.
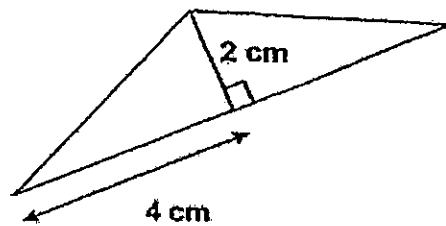
(1) $\dfrac{8y-3}{5}$

(2) $\dfrac{8y+3}{5}$

(3) $\dfrac{8y-5}{3}$

(4) $\dfrac{8y+5}{3}$

3

8   A packet of 6 buns costs $2.10. A single bun costs $0.40. What is the maximum number of buns that can be bought   with $7.00?

(1)   17

(2)   18

(3)   19

(4)   20

9.   What is the area of the isosceles triangle given below?

(1)   16 cm^2
(2)   2 cm^2
(3)   8 cm^2
(4)   4 cm^2

10.   A rectangular box measuring 20 cm by 10 cm by 15 cm is $\frac{1}{3}$ filled with sand. How much more sand is needed to fill the whole box? ·

(1)   20 cm x 10 cm x 45 cm

(2)   20 cm x 10 cm x 15 cm

(3)   20 cm x 10 cm x 10 cm

(4)   20 cm x 10 cm x 5 cm

4

11.   There are 40 questions in a test. For every correct answer, 2 marks are awarded. Jane obtained 72 marks. What percentage of the total score did she obtain?

    (1)   72%

    (2)   74%

    (3)   80%

    (4)   90%

12.   There are 40 pupils in a class. 15 of them are girls. How many percent more boys than girls are there?

    (1)   10%

    (2)   25%

    (3) $33\frac{2}{3}\%$

    (4) $66\frac{2}{3}\%$

13.   At a funfair, the ratio of the number of adults to the number of children is 4 : 5. The number of women is twice as many as men. What is the ratio of the number of children to the number of women?

    (1)   4 : 15

    (2)   8 : 15

    (3)   15 : 4

    (4)   15 : 8

14. A motorist travelling at 60 km/h took 6 hours to complete his journey. If he decreased his speed by 10 km/h, how much longer would he take to complete the same journey?
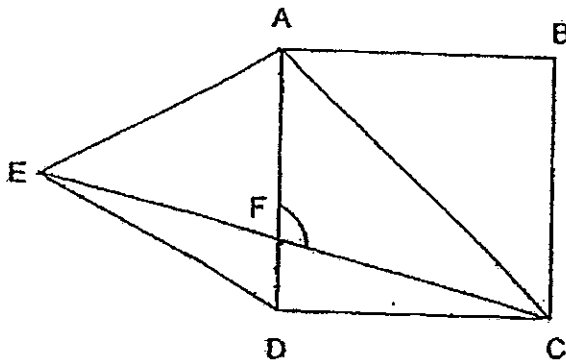
(1) $\dfrac{5}{6}$ h

(2) 1 h

(3) $1\dfrac{1}{5}$ h

(4) $1\dfrac{1}{2}$ h

15. In the figure below, ABCD is a square and ADE is an equilateral triangle. Find $\angle AFC$.

(1) 105°

(2) 120°

(3) 135°

(4) 150°

Section B (20 marks)

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]
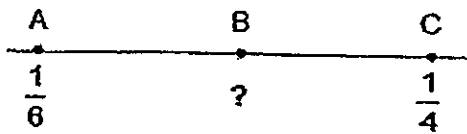
16. Express $1\frac{4}{5}$ as a percentage.

Ans : _____%

17. How many seconds are there in $2\frac{1}{4}$ h?

Ans : _____s

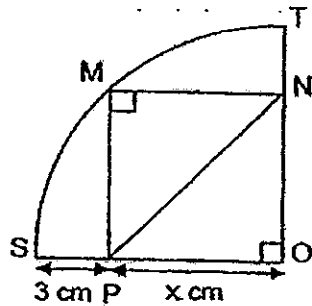18. In the number line below, AB = BC. What fraction is represented by B?

Ans : _____

7

19. Bill left his house at 7 a.m. He walked at a uniform speed of 6 km/h and reached his school at 7.20 a.m. How far was his school from his house?

20. MNOP is a square within a quadrant OST. Find the length of the line NP in terms of x.

21. The product of the age of 3 boys is 90. The sum of their ages is 16 Find the age of each boy if they are all of different age.

22. $\frac{2}{3}$ of a number is 18. What is $\frac{1}{9}$ of the number?

8

23. The number of stickers Tony has is $\frac{2}{5}$ of the number of stickers Amy has.
What percentage of Tony's stickers is Amy's?

Ans : _____ %

24. The ratio of Ann's savings to Ben's savings is 2 : 3. The ratio of Ben's savings to Clare's savings is also 2 : 3. What is the ratio of Ann's savings to Clare's savings?

Ans : _____

25. 4 erasers cost y cents. Zen bought 28 erasers. She gave the cashier $5.
How much change would she receive? Give your answer in terms of y.

Ans: (_____) cents

9

Questions 26 to 30 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided. For each question which require units, give your answers in the units stated. [10 marks]

26. Find the maximum number of 3-cm cubes that can be put into a box of dimensions of 10 cm by 9 cm by 6 cm.

Ans : _____

27. In the figure below, ABC is an isosceles triangle and AC is the diameter of the circle. Given that AC is 22 cm long, find the total area of the shaded parts.
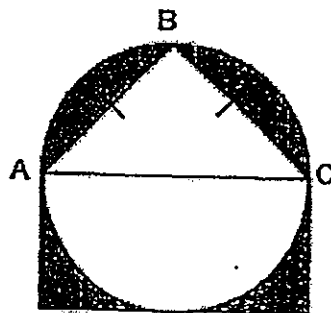
Ans: _____ cm²

28. Judy spent $40 of her pocket money and saved the rest.
If she increased her spending by 10%, her savings would decrease by
20%. How much was her pocket money?

Ans : $_____

29. Jim is preparing for his triathlon. Last Saturday, he cycled at a uniform
speed of 15 km/h to a park. He cycled at a uniform speed of 12 km/h
for his return trip. What was his average speed for the whole trip?
(Give your answer in fraction).

Ans :_____ km/h

30. Joe, Kate and Harry scored a total of 618 marks in a test. Kate scored 10% more than Joe while Harry scored 10% less than Kate. How many more marks did Joe score than Harry?

Ans : _____

NAN HUA PRIMARY SCHOOL
SEMESTRAL EXAMINATION 1 – 2012
PRIMARY 6

MATHEMATICS

Paper 2

Total Time for Paper 2: 1 hour 40 minutes

5 Short Answer Questions	(10 marks)

13 Structured / Long Answer Questions (50 marks)

INSTRUCTION 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 and show your workings clearly.
5. You are allowed to use a calculator.

Marks Obtained

Total		/ 60

Name :_____ (   )

Class : 6_____

Date : 10 May 2012   Parent's Signature :_____

Questions 1 to 5 carry 2 marks each. Show your working clearly in the space provided for each question and write your answers in the spaces provided.

For questions which require units, give your answers in the units stated.

1. Adrian has $\frac{2}{3}$ as many books as Belle. Cindy has $\frac{4}{5}$ as many books as Adrian. If Cindy has 64 books, how many books does Belle have?
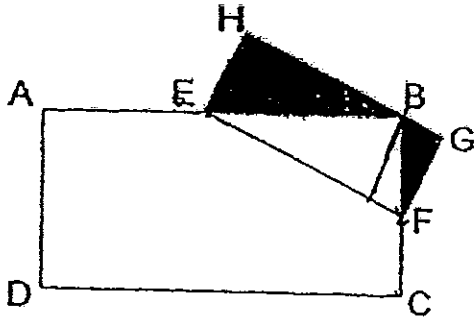
Do not write in this space

Ans :_____

2. There are some balloons in a packet. 20 % of the balloons are red and the rest are blue. How many percent more blue balloons than red balloons are there?

Ans :_____%

1

3. The figure below is made up of 2 rectangles ABCD and EFGH. Given that AE = BE and BF = FC, find the ratio of the shaded region to the area of Rectangle ABCD.

Ans : _____

4. The usual price of a cinema ticket is $9. When the price was reduced during the Great Singapore Sale, the number of tickets sold increased by 50 %, while the amount of money collected from the sale of tickets increased by 25 %. Find the price of a cinema ticket during the Great Singapore Sale.

Ans : $_____

5.   A carton weighs d kg while a box is 3 kg lighter. What is the total mass of 3 such cartons and 2 such boxes? Give your answer in terms of d.

Ans: _____ kg

For questions 6 to 18, 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 the brackets [ ] at the end of each question or part question. Remember to include the units wherever possible.

6. There were 42 more boys than girls in an auditorium. $\frac{2}{3}$ of the girls and half of the boys wore spectacles. The number of boys and the number of girls who wore spectacles were the same. What was the total number of boys and girls who wore spectacles?
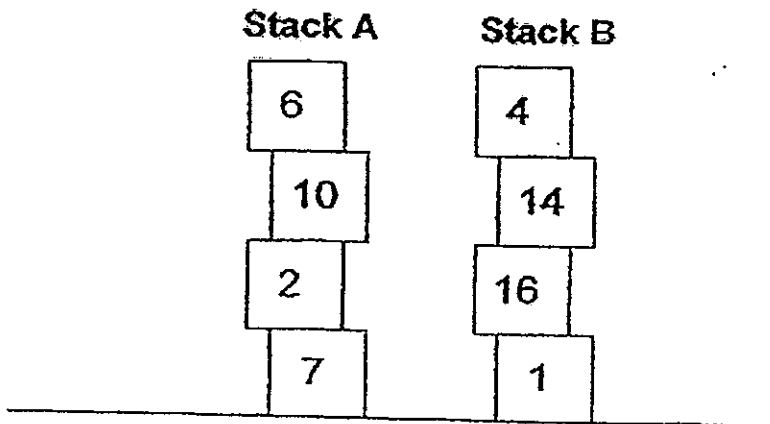
Ans :_____ [3m]

7. In the figure below, the area of Triangle X is 152 cm². The area of Triangle Y is 19 % of the Rectangle ABCD. Find the total area of the unshaded parts of Rectangle ABCD.

Ans :_____ [3m]

4
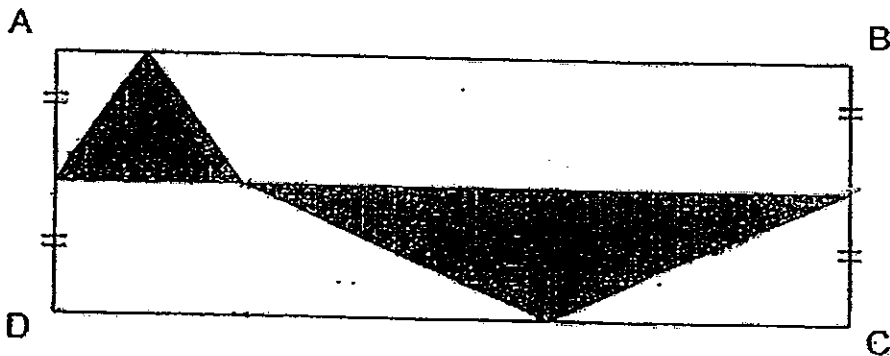
8. There are two stacks of number blocks. If Jack exchanges one block from Stack A with one block from Stack B, the sum of the number blocks in each stack will be equal. Which blocks need to be exchanged?

Stack A

| 6 |
| 10 |
| 2 |
| 7 |

Stack B

| 4 |
| 14 |
| 16 |
| 1 |

Ans : _____ and _____ [3m]

9. Before a game, the ratio of beads Amy, Ben and Charles had was $2 : 5 : 7$. Amy lost $\frac{1}{3}$ of her beads to Ben. Ben lost 35 beads to Charles who then had seven times of what Amy had at the end of the game. How many beads did Ben have at the end of the game?
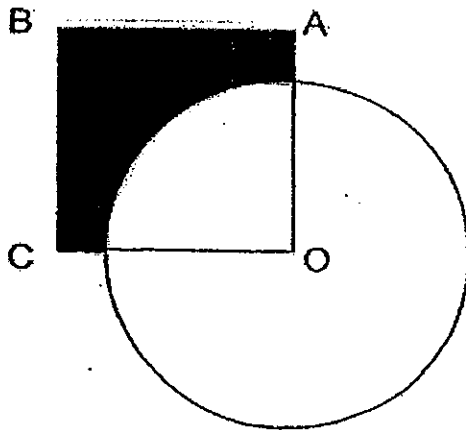
Ans : _____ [3m]

5

10. The diagram below is made up of an equilateral triangle and 2 semi-circles of diameter 3 cm. Find the perimeter of the figure. (Take $\pi = 3.14$)
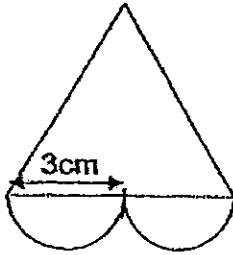
Ans : _____[3m]

11. The figure below is made up of a circle and a square overlapping each other partially, ABCO. O is the centre of the circle. If the ratio of the area of the square ABCO to the area of the circle is 4 : 7, what is the ratio of the shaded part to the whole figure?

Ans :_____[3m]

12. A cleaner had just finished washing a flight of steps. After a soccer match, Eugene ran up the flight of steps in his muddy soccer boots, 2 steps at a time. 5 minutes later, Brendan also ran up the steps in his muddy soccer boots, 3 steps at a time. If there are 54 steps altogether, how many steps must the cleaner re-wash?

Ans :_____[4m]

7

13. 80 % of the spectators at a stadium were adults. 75 % of the children at the stadium were boys. There were 36 more boys than girls.

    a) How many boys were there at the stadium?
    b) Some boys left the stadium and after which 10 % of the remaining people at the stadium were boys. How many boys left the stadium?
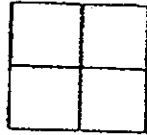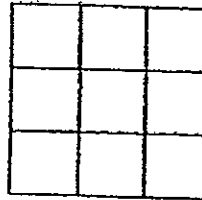
Ans: a) _____ [2m]

   b) _____ [2m]

14. Jane arranged some sticks, each measuring 2 cm in length, to form squares of different sizes as shown in the figures below.
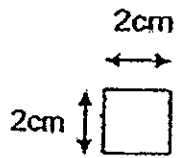
Pattern 1   Pattern 2   Pattern 3

a) Complete the following table for pattern 5.

Pattern Number	Number of sticks forming the perimeter of the biggest square	Total number of sticks in the figure	Total number of squares in the figure
1	4	4	1
2	8	12	5
3	12	24	14
4	16	40	30
5	20	(i) _____ [1m]	(ii) _____ [1m]

b) The perimeter of the biggest square in a certain pattern is 144 cm. What is the pattern number?

Ans: b)_____[2m]

9

15. In a Mathematics competition, pupils who answered each question correctly will be awarded some points according to the related sections as shown in the table below.

Section	Points Awarded
A	3 points
B	4 points
C	5 points

The number of questions in Section A, B and C were in the ratio 7 : 5 : 2 respectively. Devi answered all the questions in Section A correctly, but she only answered $\frac{1}{5}$ of the questions in Section B and none of the questions in Section C correctly. If Devi scored 150 points in the competition, how many questions were there in the 3 sections altogether?

Ans :_____ [5m]

16. Kelly and Tom started walking from the same starting point but in the opposite directions along a straight path. Kelly's average speed was 4 km/h faster than Tom's. After walking for 3 hours, they were 40 km apart. What was Kelly's average speed?

Ans :_____[5m]

17. In a class library, there are some fiction and non-fiction books. If we remove 1 non-fiction book from the library, $\frac{1}{7}$ of the remaining books are non-fiction books. If, instead of removing 1 non-fiction book, we remove 2 fiction books from the library, then $\frac{1}{5}$ of the remaining books are non-fiction books. How many books are there in the class library?

Ans :_____[5m]

18. There are 4 different numbers arranged in order from the smallest to the biggest.
The average of the first 3 numbers is 19.
The average of the last 3 numbers is 23.
The sum of the 4 numbers is 84.
Given that the second smallest number is 18, find the other 3 numbers.
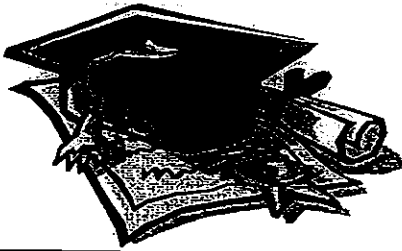
Ans : 1st number : _____

2nd number : _____

4th number : _____ [5m]

ANSWER SHEET

EXAM PAPER 2012

SCHOOL : NAN HUA
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : SA1

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

16)180%   17)8100s   18)5/24   19)2km   20)(x+3)cm

21)2,9,5   22)3   23)250%   24)4:9   25)(500-7y)cents

26)18   27)121cm2   28)$60   29)13$\frac{1}{3}$km/h   30)2

Paper 2
1)8u→64
  1u→8
  15→8 x 15 = 120
Belle has 120 books.

2)100 -20 = 80
  80 – 20 = 60
  60/120 x 100 = 300%

3)Area △EBF= 1/8 Area ABCD
  Shaded : ABCD
      1   :   8

4)$750

)3 x d = 3d
 (d − 3)x 2 = 2d − 6
 3d +(2d − 6) = 5d − 6
he total mass is (5d- 6)kg

)42 x 4 = 168
he total number of bays and girls who wore spectacles is 168.

)x + y = ¼ ABCD = 25%
X = 25% - 19% = 6% →152
Unshaded→75%-->1900cm2

)35 − 25 = 10
10÷2= 5

)50 beads.

0)21.42cm

1)9:37

2)54÷2= 27
 54 ÷3 = 18
 27 + 17 = 45
 54÷6 = 9
 45 − 9 = 36 steps.

)a)100 − 75 = 25
    75 − 25 = 50
    50%-->36
    75%-->54 boys.
 b)A+G→unchanged
    A + G = 17u
    17 x 18 = 306
    306÷90 = 34
    54 − 34 = 20 boys left.

14)a)i)60 ii)55

 b)$144 \div 4 = 36$

  $36 \div 2 = 18$

15)$7 \times 3 = 21$

 $1 \times 4 = 4$

 $21 + 4 = 25$

 $150 \div 25 = 6$

 $6 \times (7+5+2) = 84$

There were 84 questions altogether.

16)$(2u+4) \times 3 = 40km$

 $6u + 12 = 40km$

 $6u \rightarrow 28$

 $1u \rightarrow 4_{2/3}$

 $4_{2/3} + 4 = 8_{2/3}$

17)$2u \rightarrow 6$

 $1u \rightarrow 3$

 $5u \rightarrow 15$

 $15 + 7 = 22$ books.

18)$A+C = 39$

 $B + D = 45$

 $C = 24$

 $A = 39 - 24 = 15$

 $D = 45 - 18 = 27$

<u>Check</u>

$27 + 15 + 24 + 18 = 84$

1st number = 15

3rd number = 24

4th number = 27