NAN HUA PRIMARY SCHOOL
SEMESTRAL EXAMINATION 1 – 2014
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 : _____

Date :   12 May 2014   Parent's Signature :_____

Section A (20marks)

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.

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

      (1)   0.506

      (2)   0.056

      (3)   0.605

      (4)   0.065

2.   Simplify $6 + 5a + 2 - 4a$)

      (1) $8 + a$

      (2) $8 - a$

      (3) $8 + 9a$

      (4) $8 - 9a$

3.   Express $\dfrac{633}{1000}$ as a percentage.

      (1)   0.633 %

      (2)   6.33 %

      (3)   63.3 %

      (4)   633 %

4. Express 30 min as a fraction of 3 hours.

    (1) $\dfrac{1}{10}$

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

    (3) $\dfrac{3}{10}$

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

5. The product of 35 and 9 when rounded off to the nearest ten is _____.

    (1) 300

    (2) 310

    (3) 315

    (4) 320

6. The total mass of Ali and Peter is 36 kg. The mass of John is 36 kg. What is the average mass of the three boys?
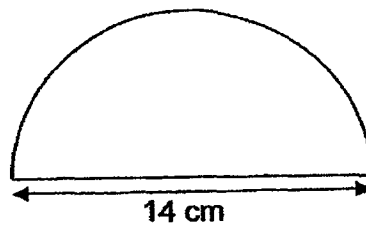
    (1) 12 kg

    (2) 18 kg

    (3) 24 kg

    (4) 36 kg

2

7. $\frac{2}{3}$ of Glenn's savings is equal to $\frac{1}{5}$ of his expenditure. Find the ratio of his savings to his expenditure.

   (1)   2 : 1

   (2)   3 : 5

   (3)   3 : 10

   (4)   10 : 3

8. Find the perimeter of the semi-circle with diameter 14 cm as shown in the diagram below. (Take $\pi = \frac{22}{7}$)

   (1)   22 cm

   (2)   36 cm

   (3)   44 cm

   (4)   58 cm

   14 cm

9. Jerome had some marbles. 20% of them were blue and the rest were red. He gave away all of his blue marbles and $\frac{1}{4}$ of the red marbles. What percentage of his original number of marbles were given away?

   (1)   25%

   (2)   30%

   (3)   40%

   (4)   45%

10. Which one of the following is nearest to 1 on a number line?
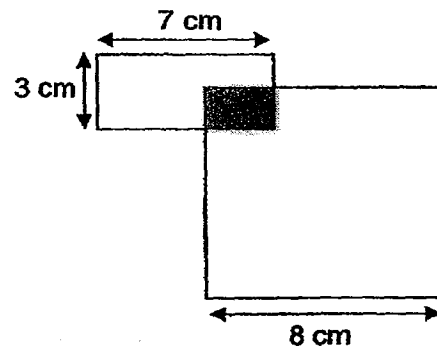
(1) $\dfrac{4}{5}$

(2) $\dfrac{5}{6}$

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

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

11. The diagram below, not drawn to scale, is made up of a rectangle and a square. The shaded area is 5 cm^2. Find the ratio of the shaded area to the unshaded area.

(1) 1 : 15
(2) 1 : 16
(3) 1 : 17
(4) 1 : 18

7 cm

3 cm

8 cm

12. The area of a rectangle is 150 cm^2. The ratio of its length to its breadth is 3 : 2. Find the length of the rectangle.

(1) 10 cm

(2) 15 cm

(3) 60 cm

(4) 90 cm

4

13. Betty has less than 40 sweets. If she puts them into packs of 4, she will have 3 sweets left. If she puts them into packs of 7, she will be short of 4 sweets. Which of the following is a possible number of sweets she has?

    (1)   25
    (2)   29
    (3)   31
    (4)   39

14. Colin drove for $\frac{1}{2}$ h at 70km/h. He drove for another $\frac{1}{2}$ h at 90km/h. What was the total distance he drove?

    (1)   80 km
    (2)   160 km
    (3)   230 km
    (4)   320 km

15. A watch cost $190 more than a bag. Jessica used $\frac{1}{5}$ of her money to buy the bag and was short of $40 to buy the watch. How much did Jessica have?

    (1) $220
    (2) $230
    (3) $240
    (4) $250

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. Find the value of $\dfrac{7}{12} \div 14$.

Give your answer in fraction in the simplest form.

Ans : _____

17. Bryan and Cindy saved a total of $y. Cindy saved $5 more than Bryan.

How much did Bryan save in terms of y?

Ans : $_____

18. The difference between $\dfrac{2}{3}$ of a number and $\dfrac{4}{9}$ of the same number is 22.

What is the number?

Ans: _____

6

| Subtotal | / 3 |

19. Lily walked from her school to the library, which is 1.5 km away, at an average speed of 50 m/min. How many minutes did Lily take to walk from her school to the library?
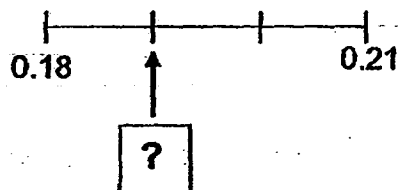
Ans : _____min

20. Each side of a 10-cm square is increased by 100%.
Find the ratio of the original area to the new area of the square.

Ans : _____ : _____

Subtotal	/ 2

21. The figure below shows a number line.

What is the value indicated by the arrow? Give your answer in decimal.

```
  ├──────┼──────┼──────┤
 0.18    ↑         0.21
         ↑
       ┌─────┐
       │  ?  │
       └─────┘
```

Ans : _____

22. Janice spent 40% of her salary, gave $\frac{1}{2}$ of it to her parents and saved the rest. She saved $365. How much was Janice's salary?

Ans : $_____

23. The ratio of Amy's savings to Belinda's savings is 2 : 1. The ratio of Belinda's savings to Cleo's savings is also 2 : 1. What is the ratio of Amy's savings to Cleo's savings?

Ans : _____ : _____

8

Subtotal	/ 3

24. $\dfrac{1}{10}$ of the pupils in a class were absent. $\dfrac{5}{7}$ of those who were present passed a test and the rest failed. What fraction of the whole class passed the test? Give your answer in the simplest form.

Ans: _____

25. In the number pattern given below, what is the 100th number?

1 6 8 9 1 6 8 9 1 6 8 9 1 6 8 ...
↑
1st

Ans : _____

Subtotal	/ 2

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 questions which require units, give your answers in the units stated.   [10 marks]

26.   The figure below is made up of a big circle and three identical smaller circles. The diameter of the big circle is 4 m. Find the shaded area of the figure? (Leave your answer in terms of π)
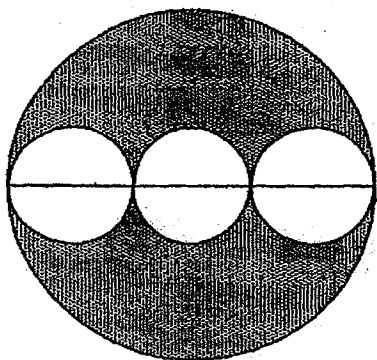
Ans : _____ m²

27.   At a buffet promotion, for every 3 paying diners, the fourth diner gets to enjoy the buffet free. An employer eats with his 35 staff from ABC Company during the buffet promotion. What fraction of the diners from ABC Company enjoy the buffet for free? Give your answer in the simplest form.
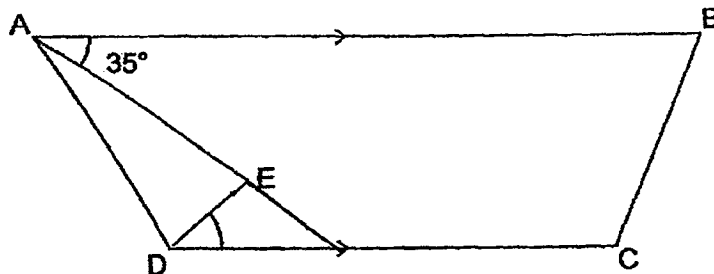
Ans : _____

Subtotal	/ 4

28. Danny and Eunice have some five-cent coins in the ratio 2 : 7.

Given that Eunice has $2 more than Danny, how many five-cent coins does Danny have?

Ans: _____ five-cent coins

29. The figure below is not drawn to scale. ABCD is a trapezium and ADE is a triangle. Find $\angle$ AED.

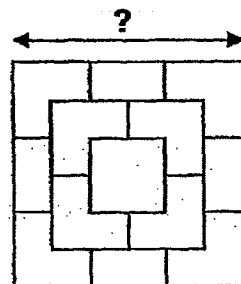Ans: _____ °

Subtotal	/ 4

30. The figure below is the top view of a solid figure. The solid figure is made up of 3 layers of identical cubes with a single cube at the top layer. The volume of this figure is 112 cm³. Find the width of the base of this figure.

?

Ans:_____ cm

| Subtotal | / 2 |

NAN HUA PRIMARY SCHOOL
SEMESTRAL EXAMINATION 1 – 2014
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)

<u>INSTRUCTION TO CANDIDATES</u>

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 : 12 May 2014   Parent's Signature :_____

Questions 1 to 5 carry 2 marks each. Show your workings clearly in the space below it and write your answer in the space provided. Give your answers in the units stated.

1. The figure below is made up of 3 semi-circles.
    The radius of the biggest semi-circle is 7cm.
    Find the perimeter of the figure.

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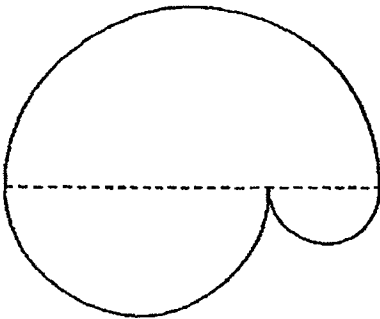
    Ans:_____cm

2. Larry poured some water into 3 containers A, B and C.
    A contained 40% of the water.
    B contained 50% as much water as A.
    C contained 30 l of water.
    How much water did Larry pour into containers A, B and C altogether?

    Ans:_____l

Subtotal	/ 4

3.   Candy bought 32w beads. She put them equally into 9 boxes and had 6 beads left.

     (a) Express the number of beads in each box in terms of w.
     (b) Given that the value of w is 3, how many beads were there in each box?

Ans: a) _____[1]

    b) _____[1]

4.   On Monday, Yang Chin sold 480 kg of rice. The mass of rice sold on Tuesday increased by 15%. What was the mass of rice sold on Tuesday?

Ans:_____ kg

2

| Subtotal | / 4 |

5. Ming has 15 *l* of water in a pail. She pours the water into an empty
    fish tank measuring 60 cm long, 50 cm wide and 40 cm high.
    How much water is left in the pail after she has filled the tank
    with water to a depth of 4 cm?

    Ans: _____ *l*

Subtotal	/ 2

For each question from 6 to 18, **show your workings clearly in the space below** it and **write your answer in the space provided**. The number of marks available is shown in brackets [ ] at the end of each question or part-question.
Remember to include the units wherever possible.

6. In the figure below, ABCD is a trapezium where AB is parallel to DC. CDE and BEF are 2 identical isosceles triangles. DE = DC = BE = BF. Given that ∠DCE is twice of ∠EDC, find ∠ABF.

Ans: _____ [3]

Subtotal | / 3

4
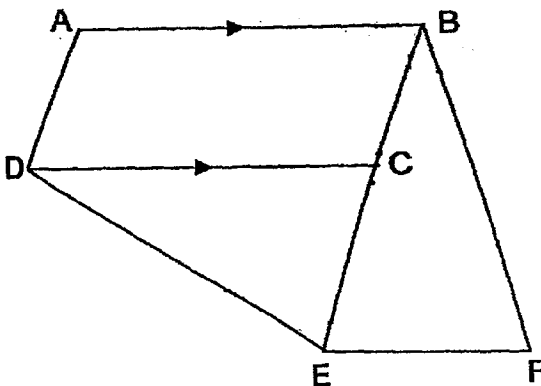
7. Shawn spent $120 on a bag and $\frac{1}{3}$ of the remaining money on a cap. If he had $\frac{2}{5}$ of the original sum of money left, how much money did he have at first?
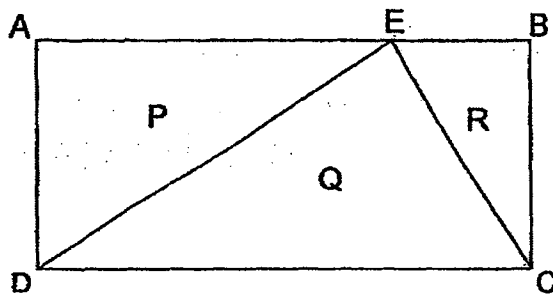
Ans: _____ [3]

| Subtotal | / 3 |

8. At noon, a lorry started from Town P and travelled towards Town Q. Three hours later, a car started from Town P and overtook the lorry at 6 p.m. The lorry arrived at Town Q at 10 p.m. At what time did the car reach Town Q?

Ans: _____ [3]

9. The figure below shows a rectangle ABCD which has been divided into 3 parts, P, Q and R. The ratio of the length of AB to that of EB is 7 : 2. The area of P is 72 cm² larger than that of the area of R.
Find the area of rectangle ABCD.

Ans: _____ [3]

10. The ratio of Ken's savings to Belle's savings is 2 : 3. After each of them had spent $18 on food, Ken has $\frac{3}{5}$ as much money as Belle.

Find their total savings at the end.

Ans:_____[3]

| Subtotal | / 3 |

11. The ratio of Anna's salary to Ben's salary to Colin's salary is 4 : 7 : 10.
If Anna's salary is increased by 20% and Ben's salary is reduced by 20%,
the new total salary is $5100.

Find the total salary of the three children.

Ans: _____ [3]

12. At a conference, when 10 women left for the washroom, the ratio of the number of men to the number of women that remained became 1 : 1. If 10 men were to leave for the washroom instead, the ratio of the number of men to the number of women that remained became 3 : 5. How many people attended the conference?

Ans: _____ [4]

Subtotal | / 4

13. Ann and Susan went for a dinner. Ann paid 25% of the bill and Susan paid the rest. After paying for the dinner, Susan had $\frac{1}{4}$ of her money left and Ann had $63 left. The ratio of the amount of money that Susan had at first to the ratio of the amount of money that Ann had at first was 5 : 3. How much did the dinner cost?

Ans: _____ [4]

Subtotal | / 4

14. Gerald and Bryan ran round a 800 m circular track. Gerald ran at a speed of 215 m/min and Bryan at a speed that was 50 m/min slower than Gerald throughout the race. How many **complete** rounds would Gerald have finished when he had run a distance of 600 m more than Bryan?

Ans: _____ [4]

15. Anna, Belinda, Carol and Diana went to buy a birthday gift for Elaine. They shared the cost equally among themselves. However, Diana forgot to bring money. So her friends paid for the gift first. Carol paid $\frac{3}{7}$ of the amount Anna and Belinda paid. Anna paid $8 more than Belinda. The next day, Diana returned $6 to Carol and some money to Anna and Belinda. How much money did Diana return to Belinda?

Ans: _____ [5]

13

16. The figure below is made up of 3 identical circles and an equilateral triangle touching the points P, Q and R on the circles. Point O is the centre of the middle circle. Given that the area of the triangle PQR is 45 cm² and the diameter of each circle is 12 cm, find the area of the shaded part.

(Take $\pi = 3.14$)

(Give your answer correct to 2 decimal places)
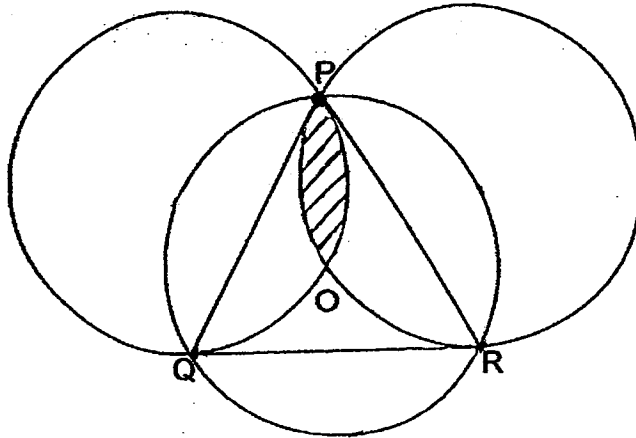
Ans: _____ [5]

17. The figure below, not drawn to scale, is made up of 2 overlapping

squares (ABCD and EFGH). $\dfrac{1}{4}$ of the square EFGH and 36% of the

square ABCD is shaded.

a) What fraction of the figure is unshaded?
   Give your answer in the simplest form.

b) If the difference in area between the 2 squares (ABCD and EFGH) is 44 cm^2, what is the total perimeter of the figure?

Ans: a)_____ [3]

b)_____ [2]

15

Subtotal	/ 5
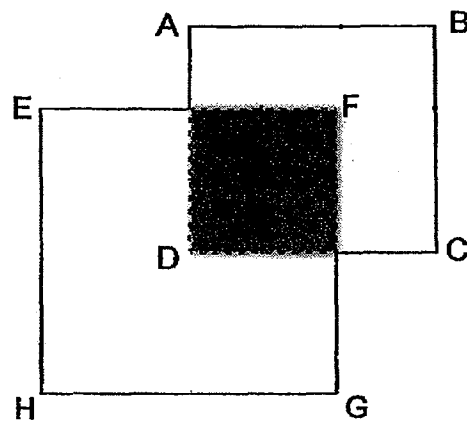
18. A fruiterer packed some apples into 44 big carton boxes and 16 small carton boxes. There were 28 more apples in a big carton box than in a small box. The ratio of the number of apples packed into big carton boxes to the number of apples packed into small carton boxes was 3 : 1. How many apples did the fruiterer pack altogether?

Ans: _____ [5]

End of Pape 2

Remember to check your work.

16

| Subtotal | / 5 |

EXAM PAPER 2014
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	3	2	4	3	3	2	3	2	1	2	3	1	4

16)1/24   17)$(Y-5/2)   18)99   19)30 min   20)1 : 4

21)0.19   22)$3650   23)4 : 1   24)9/14   25)9

26)$(2_{2/3}\Pi)$ 27) ¼   28)16   29)85°   30)6

Paper 2
1)22/7 x 7 x 2 = 44 cm

2) A :   B :   C
   40%   20%   30L

   100% - 40% - 20% = 40%
   40% → 30L
   10% → 30L ÷ 4 = 7.5L
   100% → 7.5L x 10 = 75L

3)a)$\underline{32w - 6}$
         9

 b)32 x 3 = 96
   $\underline{96 - 6}$ = 10
      9

4)100% + 15% = 115%
   115% x 480 = 552 kg

5)60 x 50 x 4 = 12000
   12000cm2→12L
   15L – 12L = 3L

6)5x→180
   x→180÷5= 36
   2x→36 x 2 = 72
   72 + 36 = 108°

7)$120÷2 = $60
   $60 x 5 = $300

8)   Car : Lorry
   Time   3   :   6
   Speed 3   :   6

      6pm————→10pm
            4h

   6u→4
   3u→4/6 x 3 = 2
   6pm————→8pm
          2h

9)Assume breadth of rectangle is 4u

   5u x 4u x ½ = 10u
   2u x 4u x ½ =4u
   10u – 4u = 6u
   5u + 2u = 7u
   7u x 4u = 28u
   6u→72 cm2
   1u→72 cm2÷6 = 12 cm2
    28u→12 cm2 x 28 = 336 cm2

10)4p – 3p = 1p
    1p→$18
    8p→$18 x 8 = $144

11) 4 x 120% = 4.8
100% - 20% = 80%
7 x 80% = 5.6
4.8u + 5.6u + 10u → 5100
20.4u → 5100
u → 5100 ÷ 20.4 = 250
4u + 7u + 10u → 250 x 21 = $5250

12) 1u → 10
8u → 10 x 8 = 80
80 + 10 = 90

13) 7u → $63
1u → $63 ÷ 7u = $9
20u → $9 x 20 = $180

14) 215 - 50 = 165 (speed of Bryan)
600 ÷ 50 = 12
12 x 215 = 2580
2580 ÷ 800 = $\underline{3}$ r 180

15) 12u - 10u = 2u
2u → 6
28u - 20u = 8u
1u → 6 ÷ 2 = 3
8u → 3 x 8 = 24
$\dfrac{24 - 8}{2}$ = $8

16) 45 x 1/3 = 15
1/3 x 3.14 x 6 x 6 = 37.68
37.68 - 15 = 22.68
22.68 - 15 = 7.68 cm$_2$

17) a) 25 - 9 = 16
36 - 9 = 27
27 + 16 : 27+9+16
= $\dfrac{43}{52}$

17)b)$36u - 25u = 11u$

$11u \rightarrow 44$

$u \rightarrow 44 \div 11 = 4$

$25u \rightarrow 4 \times 25 = 100$

$\sqrt{100} = 10$

$36u \rightarrow 4 \times 36 = 144$

$\sqrt{144} = 12$

$10 \times 2 = 20$

$12 \times 2 = 24$

$6 \times 2 = 12$

$10 - 6 = 4$

$4 \times 2 = 8$

$24 + 20 + 12 + 8 = 64cm$

18)$3p \rightarrow 44A + 1232$

$1p \rightarrow 16A$ x3

$3p \rightarrow 48A$ x3

$44A + 1232 \rightarrow 48A$

$4A \rightarrow 1232$

$A \rightarrow 308$

$48A \rightarrow 14784$

$14784 + 16 \times 308 = 19712$