NANYANG PRIMARY SCHOOL

PRELIMINARY EXAMINATION 2009

PRIMARY 6

MATHEMATICS

PAPER 1

DURATION: 50 MINUTES

Booklet A	/ 20
Booklet B	/ 20

Paper 1 Total:
/ 40

Name: _____ ( )

Class: Primary 6 ( )

Date: 26 August 2009

Parent's Signature: _____

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

FOLLOW ALL INSTRUCTIONS CAREFULLY.

ANSWER ALL QUESTIONS.

YOU ARE NOT ALLOWED TO USE A CALCULATOR.

PAPER 1 (BOOKLET A)

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
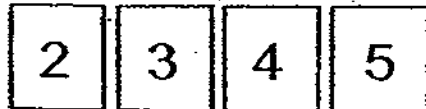Answer Sheet.

(20 marks)

___

1   In 209.431, the digit in the hundredths place is _____.

   (1)   1

   (2)   2

   (3)   3

   (4)   4

2   Anqi used 218.08 g of flour to bake 8 muffins.   How much flour did she
       use to bake one muffin?

   (1)   27.26 g

   (2)   27.35 g

   (3)   1744.64 g

   (4)   1750.40 g

3   The total surface area of a cube is 216 cm². Find its volume.

(1)   6 cm³

(2)   36 cm³

(3)   54 cm³

(4)   216 cm³

4   How many 3-digit odd numbers can you make from the following digits?
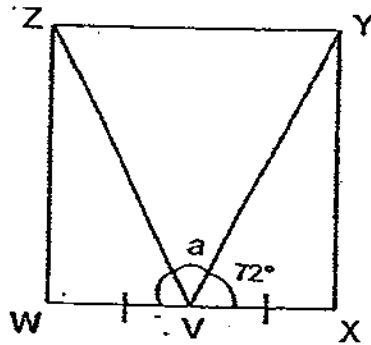
For each number, each digit can only be used once.

$$\boxed{2}\ \boxed{3}\ \boxed{4}\ \boxed{5}$$

(1)   9

(2)   10

(3)   11

(4)   12

5   Mei Mei had 150 buttons more than Siti at first.   After Mei Mei used 190 buttons, Siti now has twice as many buttons as Mei Mei.   Find the number of buttons Mei Mei had at first.

   (1)   190

   (2)   230

   (3)   300

   (4)   340

6   The figure below shows a square WXYZ.   Given that V is the mid-point of WX and $\angle XVY = 72°$, find $\angle a$.

   (1)   18°

   (2)   36°

   (3)   108°

   (4)   144°

7   Given that $d : e = 3 : 2$ and $e : f = 4 : 5$, express f as a fraction of d.

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

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

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

   (4) $\dfrac{5}{4}$

8   The price of a toy car was increased from \$35 to \$42. Find the percentage increase of the toy car.
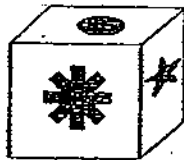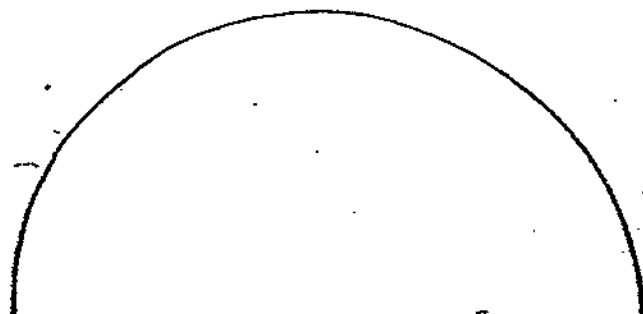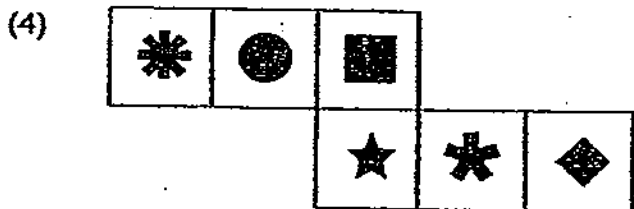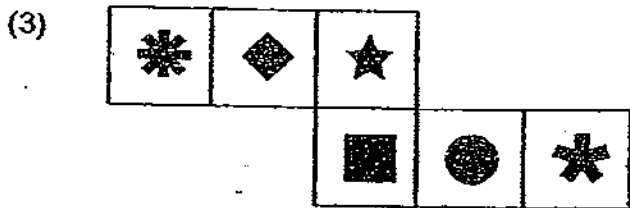
   (1) $16\dfrac{2}{3}$ %
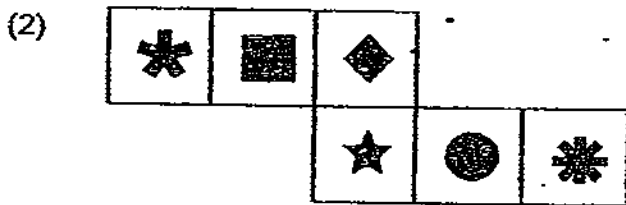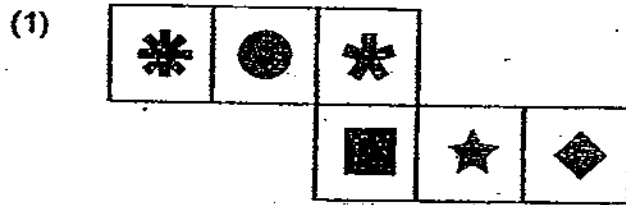
   (2)   20 %

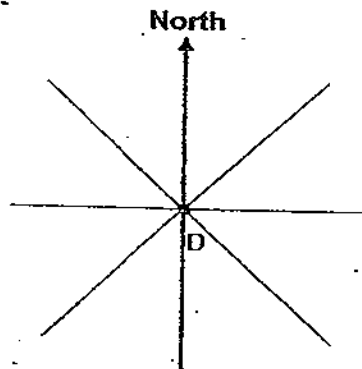   (3) $83\dfrac{1}{3}$ %

   (4)   120 %

9   Look at the picture carefully.

Which one of the following nets can form the above cube?

(1)

(2)

(3)

(4)

10   In a holiday camp, the children were divided equally into groups of 3, 9 or 13 during the outdoor activities.   How many children attended the camp?

(1)   117

(2)   118

(3)   120

(4)   126

11   John is standing in the middle of a field at position D and he is facing North-west.   If he turns 270° anti-clockwise, where would he be facing?

(1)   South-east
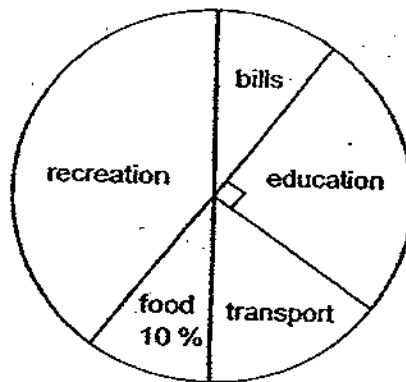
(2)   South-west

(3)   North-east

(4)   North-west

12   A rectangular box measures 30 cm by 16 cm by 14 cm. Find the maximum number of cubes with sides 4 cm that can be packed into the box.

(1)   1680

(2)   420

(3)   105

(4)   84

13   Find the value of $\dfrac{15w}{4} - \dfrac{1}{2} - 3w + \dfrac{1}{4}$ when $w = 2$.
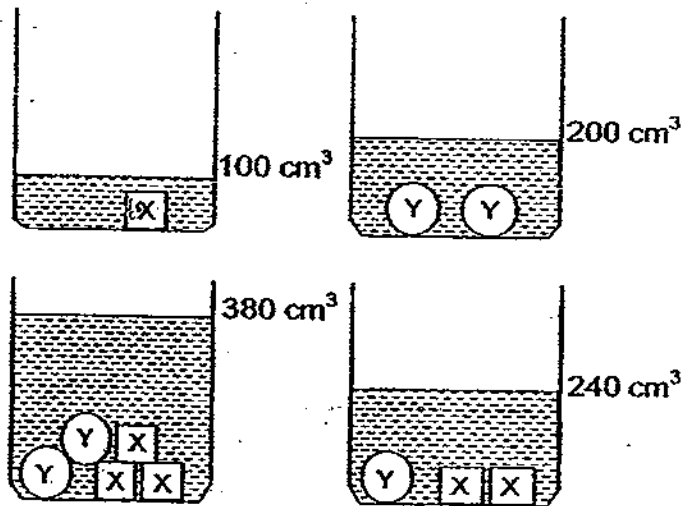
(1) $\dfrac{1}{2}$

(2) $\dfrac{3}{4}$

(3) $1\dfrac{1}{4}$

(4) $1\dfrac{3}{4}$

14 The pie chart below shows the monthly expenditure of a family. They spent half of their expenditure on recreation and food.
Express the monthly expenditure on transport as a fraction of the expenditure on recreation.

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

(2) $\dfrac{3}{8}$

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

(4) $\dfrac{5}{8}$

15 The four containers below each contains the same amount of water with different number of objects.

What is the volume of object Y?

(1)   40 cm^3

(2)   60 cm^3

(3)   80 cm^3

(4)   100 cm^3

Name: _____ (   )   Class: Pr 6 (   )

P6 Prelims 2009

PAPER 1 (BOOKLET 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)

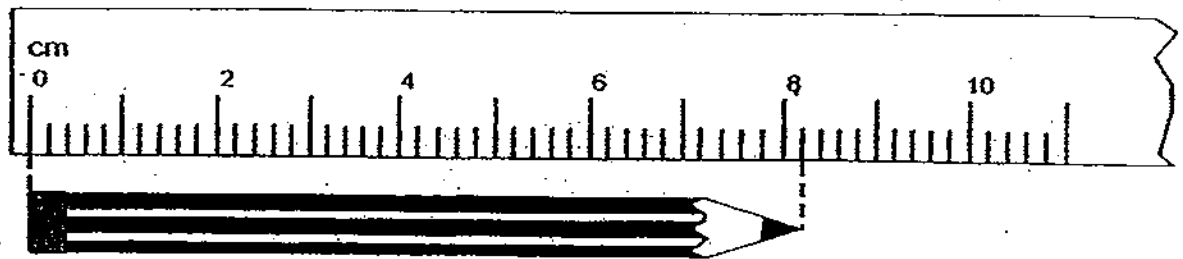16. A shopkeeper had 3255 lollipops. He repacked them into packets of 3 each. How many packets did he have altogether?

Ans: _____

17 Find the missing fraction in the box.

$$6\frac{1}{6} + 2\frac{7}{12} = \boxed{?} - \frac{5}{6}$$

Ans: _____

18   Joseph bought 7 identical pencils, each of length as shown in the diagram below.   What is the total length of the 7 pencils?
(Leave your answer as a mixed number in its simplest form.)

Ans:_____ cm

19   In 2009, the population of Country A is 6 547 000 when rounded off to the nearest hundred.   What is the smallest possible number that can be the population of Country A?

Ans: _____

20   Mei Ling took a flight from Singapore to Hong Kong at 08 30 Singapore time.   The duration of flight was 3 h 45 min.   What time would it be in Singapore when she reached Hong Kong?   Give your answer in 24 hour clock. (Assuming that there was no delay and the flight departed as planned.)
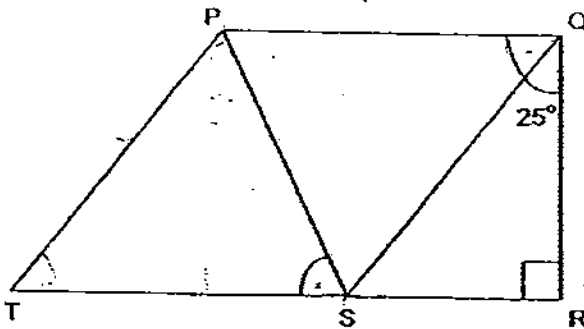
Ans: _____

21   Kumar had two parcels. The mass of Parcel A was 1068 g and the mass of Parcel B was 5.14 kg. What was the total mass of the parcels?
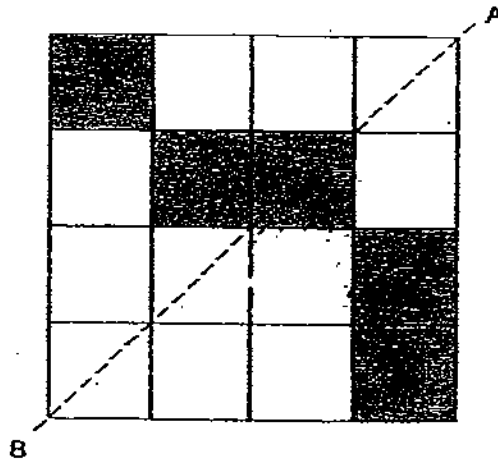

Parcel A

Parcel B

Ans: _____ kg

22   In the figure below, PQST is a rhombus and TSR is a straight line. Find ∠PST.

Ans: _____ °

23   The figure below shows 5 shaded squares.   Shade 2 more squares in the figure so that AB becomes the line of symmetry of the figure.

---

24   Ming Kang completed his 1.6 km run for NAPFA test in 6 min 40 sec. Find his speed in m/s.

Ans: _____ m/s

---

25   In a class, $\dfrac{3}{4}$ of the number of boys is as many as $\dfrac{1}{5}$ of the number of girls.   Find the ratio of the number of girls to the number of boys.
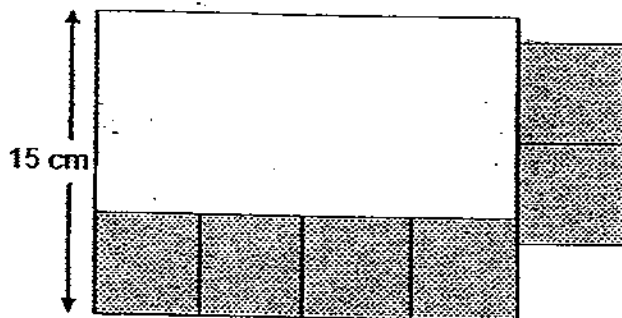
Ans: _____

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

(10 marks)

26   The product of two numbers is $\frac{2}{3}$. If one of the numbers is $\frac{3}{4}$, what is the other number?

Ans: _____

27   The figure below is made up of one rectangle and 6 identical shaded squares. The 6 shaded squares have a total area of 150 cm². Find the perimeter of the figure.
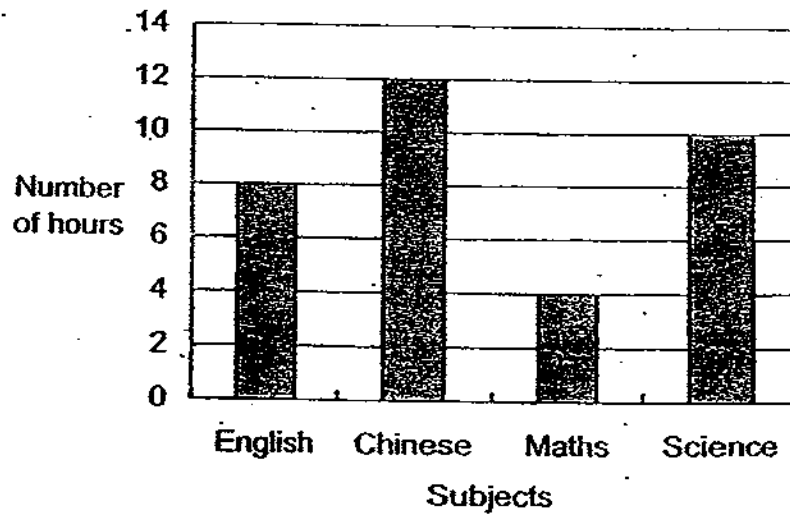

15 cm

Ans: _____ cm

28   Ali was *m* years old 3 years ago.   He was half of his father's age then. Find their present total age in terms of *m*.
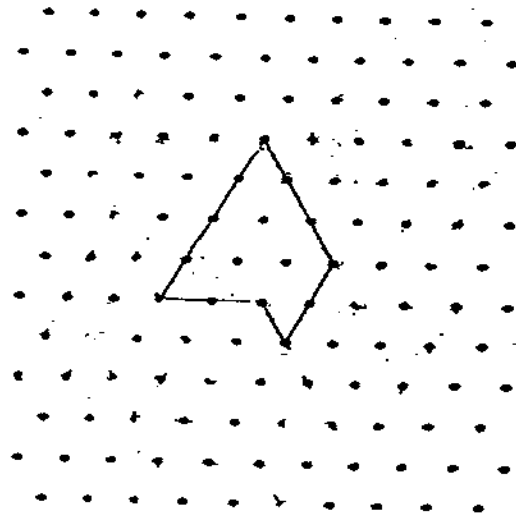
Ans:_____ years

29   The graph shows the amount of time Zhiming spent on revising for each of his subjects in a week.

Find the average amount of time he spent on revision for all 4 subjects.

Ans: _____ h

30 Draw **4** more of the unit shapes in the space given below to show that it can tessellate.

NANYANG PRIMARY SCHOOL

PRELIMINARY EXAMINATION 2009

PRIMARY 6

MATHEMATICS

PAPER 2

DURATION: 1 HOUR 40 MINUTES

Paper 2 Total	/ 60
GRAND TOTAL	/ 100

Name: _____ (   )

Class: Primary 6 (   )

Date: 26 August 2009

Parent's Signature:_____

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ANSWER ALL QUESTIONS.
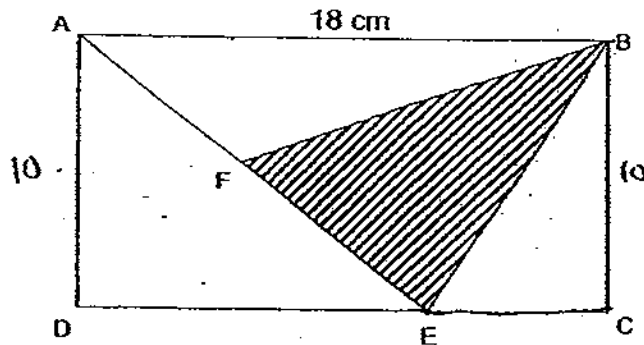
YOU ARE ALLOWED TO USE A CALCULATOR.

PAPER 2

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.

(10 marks)

1   What is the value of $48 - 9 + 34 + 12 - 4 + 2$?

Ans: _____

2   Rectangle ABCD has a perimeter of 56 cm. Given that the area of triangle ABF is 42 cm^2 and AB = 18 cm, find the area of triangle BEF.
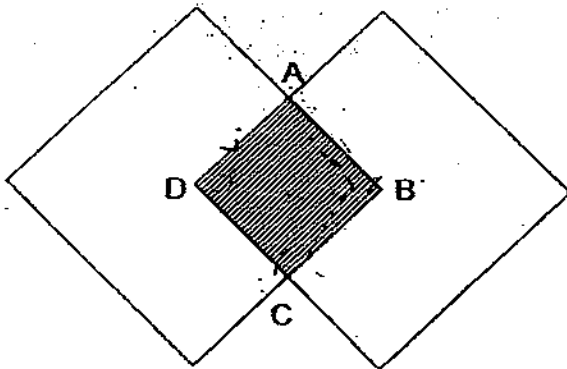

Ans: _____ cm^2

1

3   Find the total of the following algebraic expressions in the number sequence:

$n + 2, 2n + 4, 3n + 6, \ldots, 7n + 14$

Ans: _____

4   Two identical rhombi intersect at the mid-points of the sides to form rhombus ABCD. What percentage of the figure is unshaded? Give your answer as a mixed number.

Ans: _____ %

5. Mary paid $51 for a blouse at 15% discount from a boutique. If she applied to be a VIP member, she would only need to pay $48 for the blouse. Find the percentage discount given to Mary as a VIP member.

Ans: _____ %

3

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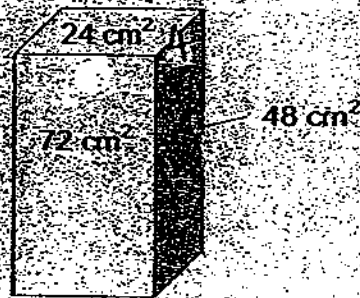
(50 marks)

6.   Muthu and Beng Huat had some money. If Muthu gave Beng Huat $360, both would have an equal amount of money. If Beng Huat gave Muthu $180, Beng Huat would have $\frac{1}{3}$ as much money as Muthu.

(a) How much money did Muthu have?

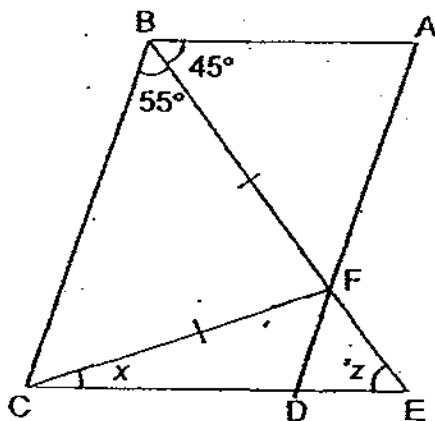(b) How much money did Beng Huat have?

Ans: (a) _____ [2]

        (b) _____ [1]

7. The areas of the three faces of a cuboid are 24 cm², 72 cm² and 48 cm² respectively. Find the volume of the cuboid.

24 cm²

72 cm²

48 cm²

Ans: _____ [3]

---

8. The figure below is not drawn to scale. ABCD is a parallelogram. CDE and BFE are straight lines. CF = BF, ∠CBF = 55° and ∠ABF = 45°. Find the difference between ∠z and ∠x.

B   45°   A

55°

F

x   z

C   D   E

Ans: _____ [3]

9   Mr Kuah, a canteen vendor, had a container completely filled with oil. On the first day, he used 1 litre more than $\frac{1}{2}$ of the original amount of oil in the container for his cooking. On the second day, he used 2 litres more than $\frac{1}{3}$ of the remaining oil in the container. On the third day, he used 6 litres more than $\frac{1}{7}$ of the oil left in the container. In the end, there were still 6 litres of oil in the container. How many litres of oil were there in the container at first?

Ans: _____ [3]

10 The charges of water services of Mr Lim's family are shown in the table.

Water Services Charges:

Item	Usage	Rate
Water Usage	16 m³	$1.17 per m³
Waterborne Fee	16 m³	$0.30 per m³
Sanitary Appliance Fee	1 Fitting	$3.00 per Fitting

(a) Find the total amount of money Mr Lim has to pay for the water services charges.

(b) If there is a 30% water conservation tax charged on water usage only, how much more money does Mr Lim have to pay?
(Round off the answer to 2 decimal places.)

Ans: (a) _____ [2]

(b) _____ [1]

7

11. The table below shows the number of children per family recorded during a survey.

Number of children per family	0	1	2	3	4	5
Number of families	2	6	4	12	10	6

(a) What is the average number of children in each family?

(b) What is the percentage of the number of families with at least 3 children?

Ans: (a) _____ [2]

(b) _____ [2]

12   Given that $p : (q + r) = 1 : 3$, $r : (q + s) = 1 : 2$ and $p : s = 2 : 5$.

(a) Find $p : q : r : s$.
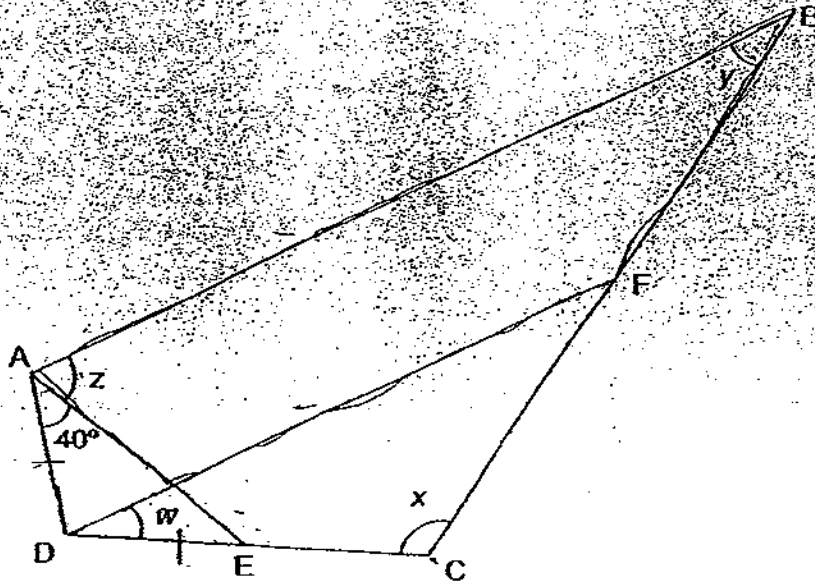
(b) Find $(r + q) : (p + s)$.

Ans: (a)_____ [3]

(b)_____ [1]

13   A rectangular container X measuring 10 cm by 20 cm by 15 cm is $\frac{2}{5}$ filled with water.   Some water is poured from container X into an empty rectangular container Y which has a square base.   The heights of the water level in the two containers will then be 4 cm each.

(a) Find the side of the square base of container Y.

(b) If another 900 cm^3 of water is needed to fill container Y to the brim, find the height of container Y.

Ans: (a) _____ [3]

      (b) _____ [1]

14 The figure below is not drawn to scale. $\angle ADC = 100°$, AD = DE and AB // DF. Given that $\angle z$ is $\frac{1}{2}$ of $\angle x$ and $\angle z$ is 3 times of $\angle y$, find

(a) $\angle z$,

(b) $\angle w$.

Ans: (a) _____ [3]

(b) _____ [1]

15 The diagram below shows a series of patterns formed using some tiles. ▽
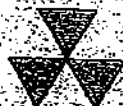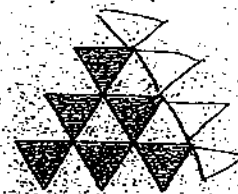
Figure 1   Figure 2   Figure 3

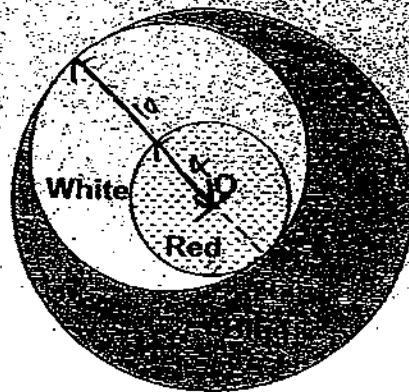| Figure	1	2	3	...
Number of Tiles	1	3	6	...

(a) How many tiles were used to form Figure 6?

(b) How many more tiles were used to form Figure 10 than Figure 6?

(c) Which figure was formed with 171 tiles?

Ans: (a) _____ [1]

(b) _____ [1]

(c) _____ [2]

16 The figure below consists of three circles. The smallest circle has centre O and radius of 4 cm. The biggest circle has centre O and radius of 10 cm. The diameter of the biggest circle also cuts through the centre of the medium-sized circle. The medium-sized circle touches the other two circles as shown. The three regions formed are coloured red, white and blue as shown.

(a) Find the radius of the medium-sized circle.

(b) Find the area of the white region. Use a calculator to obtain the value of π. (Give your answer correct to 2 decimal places.)

(c) Express the area of the red region as a fraction of the area of the blue region.

Ans: (a) _____ [1]

(b) _____ [2]

(c) _____ [2]

17. Ahmad started travelling from Town P towards Town Q at 7 a.m. After travelling for some time, he passed Steve who was travelling at an average speed of 80 km/h in the opposite direction. After travelling for another 2 hours, Ahmad reached Town Q while Steve was still 40 km away from Town P.

(a) If Ahmad reached Town Q at 1.00 pm, what was his average speed?

(b) If Steve started his journey from Town Q, at what time did he leave Town Q?

Ans: (a) _____ [3]

(b) _____ [2]

18. Mdm Ang bought some highlighters, pens and mechanical pencils. $\frac{1}{4}$ of them were highlighters. The number of pens she bought was 6 more than $\frac{1}{2}$ the total number of all the items and the remaining were mechanical pencils. Each of the highlighters, pens and mechanical pencils cost $2.10, $4.05 and $1.60 respectively. She spent a total of $227.10 on all the items. How many pens did she buy altogether?

Ans: _____ [5]
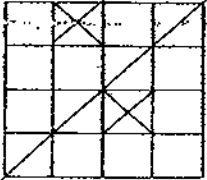
END OF PAPER

ANSWER SHEET

EXAM PAPER 2009

SCHOOL : NANYANG PRIMARY
SUBJECT : PRIMARY 6 MATHEMATICS

TERM   : SA2

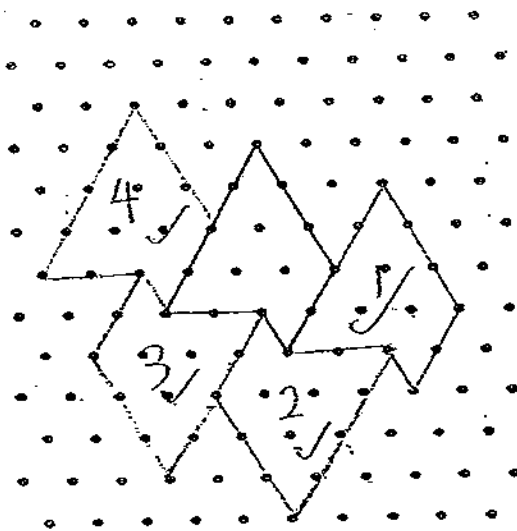| Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
3	1	4	4	2	2	2	2	4	1	3	4	3	2	3

16)1085   17)9⁷/₁₂   18)572/5cm   19)6546950   20)12 15

21)6.208kg   22)57.5°   23)   24)4m/s

25)15:4   26)8/9

27)80cm   28)(3m+6)   29)8½h

30)

Paper 2

1)84-6k	2)56-18-18=20
	   20÷2=10
	   18x10x ½ =90
	   90-42=48cm₂

3)(28n+56)	4)85 5/7%

5)$51x100/85=$60
   $60-$48=$12
   $12/$60=1/5=20%
	6)a)$1440
	   b)$720

7)288cm₃	8)∠X→55° +45° =100°
	   180° -100° =80°
	   80° -55° =25°
	   ∠z→180° -55° -55° =70°
	   180° -100° -25° =55°
	   180° -55° -70° =55°
	   180° -100° =80°
	   180° -50° -55° =45°
	   ∠z -∠x→45° -25° =20°

9)50L	10)a)$26.52 b)$5.62

11)a)3
   b)70%
	12)a)6:7:11:15
	   b)6:7

13)a)10cm
   b)13cm
	14)a)66°
	   b)26°

15)a)21 b)34 c)18	16)a)7cm b)103.67cm₂ c)16/51
17)a)50km/h b)9.45a.m.	18)42