NANYANG PRIMARY SCHOOL

FIRST SEMESTRAL EXAMINATION 2012

PRIMARY 6

MATHEMATICS

PAPER 1

DURATION: 50 MINUTES

Booklet A	/ 20
Booklet B	/ 20

Paper 1 Total: / 40

Name: _____ ( )

Class: Primary 6 ( )

Date: 14 May 2012

Parent's Signature: _____

Any query on marks awarded should be raised by 21 May 2012. We seek your understanding in this matter as any delay in the confirmation of marks will lead to delays in the generation of results.

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)

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1 Simplify the following algebraic expression:

$$5x - 8 - 2x + 10$$

(1) $3x + 2$

(2) $3x - 18$

(3) $7x + 2$

(4) $7x - 18$

2 Arrange the following fractions in ascending order.

$$\frac{5}{3}, \quad \frac{8}{5}, \quad \frac{5}{6}$$

(1) $\frac{5}{3}, \frac{8}{5}, \frac{5}{6}$

(2) $\frac{5}{6}, \frac{5}{3}, \frac{8}{5}$

(3) $\frac{5}{3}, \frac{5}{6}, \frac{8}{5}$

(4) $\frac{5}{6}, \frac{8}{5}, \frac{5}{3}$

3 Find the value of $364 \div 5$.

(1) 72.4

(2) 72.8

(3) 72.08

(4) 728

4 Ben took $1\frac{3}{4}$ h to bake a cake. Josh took $\frac{2}{3}$ of the time taken by Ben to bake a similar cake. How long did Josh take to bake the similar cake?

(1) $1\frac{1}{12}$ h

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

(3) $2\frac{5}{12}$ h

(4) $2\frac{5}{8}$ h

5 There were 50 pens in a box. May Ling put 14 more pens into the box. What was the percentage increase in the number of pens?

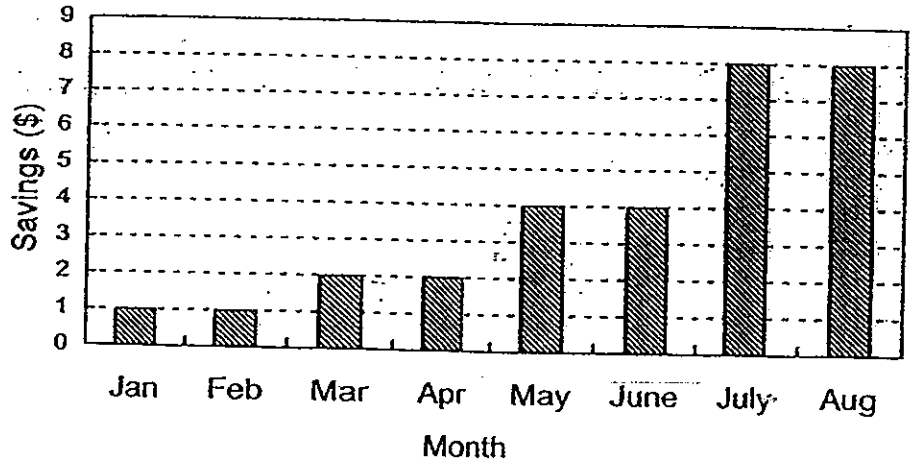
(1) 28%

(2) 30%

(3) 40%

(4) 98%

6 The graph below shows the pattern of Judy's monthly savings.



What would her savings be in September?

(1) $16

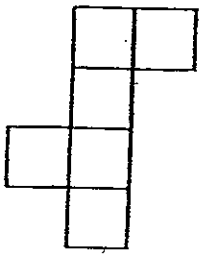
(2) $32

(3) $64

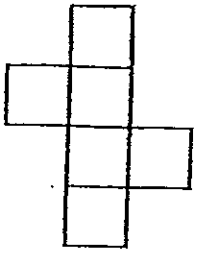
(4) $128

7 Which of the following nets can be folded to form a cube?

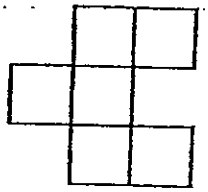
1)



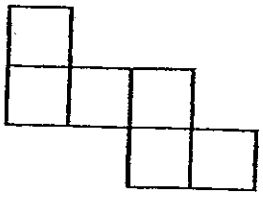
2)



3)



4)



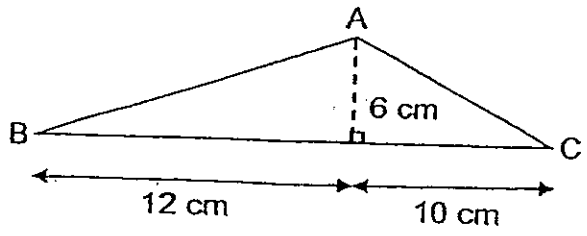
(1) A only

(2) A and B

(3) A, B and D only

(4) All of the above

8 Find the area of triangle ABC.



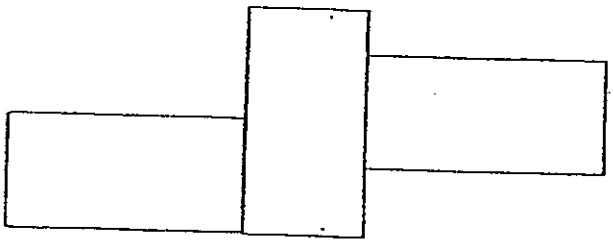
(1) 30 cm^2

(2) 32 cm^2

(3) 36 cm^2

(4) 66 cm^2

9 The figure below is made up of 3 identical rectangles each measuring 4 cm by 2 cm. Find its perimeter.



(1) 26 cm

(2) 28 cm

(3) 30 cm

(4) 32 cm

10 A car uses 0.09 ℓ of petrol for every 1 kilometre travelled. How many litres of petrol are needed if the car travels 50 kilometres?

(1) 0.45

(2) 4.5

(3) 45

(4) 450

11 At a restaurant, 50% of the customers were women. There were 45 men and the rest were children. If there were 150 customers, what percentage of the customers were children?

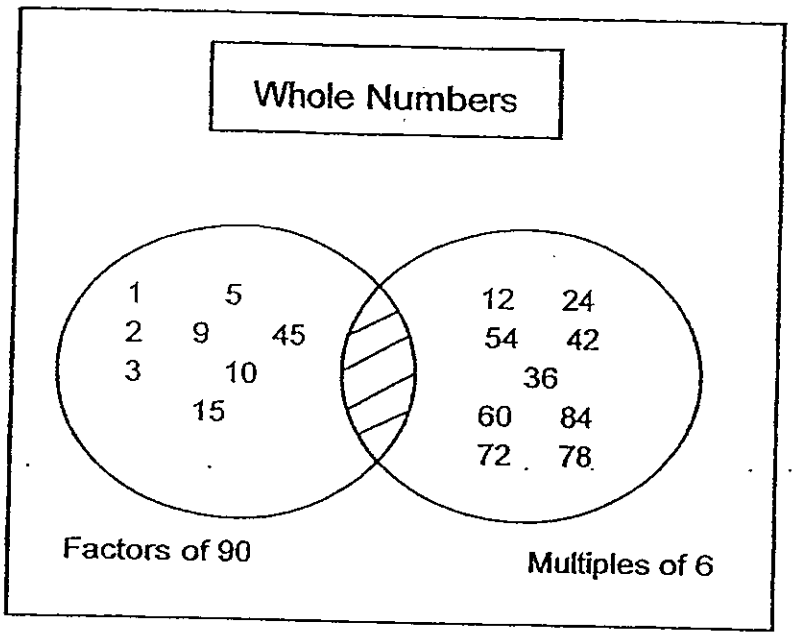
(1) 20%

(2) 30%

(3) 60%

(4) 70%

12 Study the Venn Diagram below.



What is the maximum number of factors of 90 that can be placed in the shaded part of the diagram?

(1) 5

(2) 6

(3) 7

(4) 4

13 A coach travelled at a uniform speed of 60 km/h for $3\frac{1}{2}$ h. For the rest of the journey, it travelled 22 km for $\frac{1}{2}$ h. What was the average speed for the whole journey?

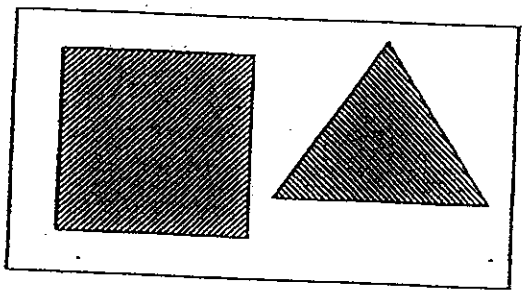
(1) 44 km/h

(2) 52 km/h

(3) 58 km/h

(4) 104 km/h

14 In the figure below, the ratio of the area of the unshaded part to that of the shaded part is 9 : 14. The ratio of the area of the shaded square to that of the shaded triangle is 4 : 3. The area of the shaded square is 160 cm^2. Find the area of the unshaded part.



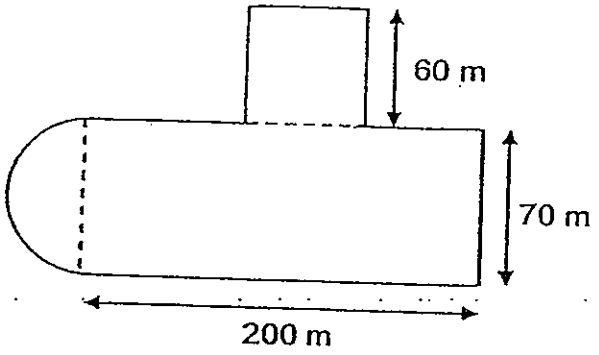
(1) 120 cm^2

(2) 180 cm^2

(3) 280 cm^2

(4) 460 cm^2

15 The figure below shows a running track made up of a rectangle, a semicircle and a square. What is the perimeter of the track? (Take $\pi = \frac{22}{7}$)



(1) 630 m

(2) 700 m

(3) 740 m

(4) 760 m

Name: _____( ) Class: Pr 6 ( )

P6 SA1 2012

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 If r = 4, find the value of $12r + 14 + 17 - 6r$.

Ans: _____

17 In a bookshop, there were 850 Chinese books and 2500 English books. There were 500 more Japanese books than English books. How many books were there?

Ans: _____

18 Find the value of $45 - 5 \times 7 + (6 + 24 \div 6 \times 3)$.

Ans: _____

19 Express 18.24 as a mixed number. Give your answer in the simplest form.

Ans: _____

20 A total of $34 845.63 was collected from a fund-raising event. Express this amount to the nearest ten dollar.

Ans: $ _____

21 Express 12 kg 23 g as kg.

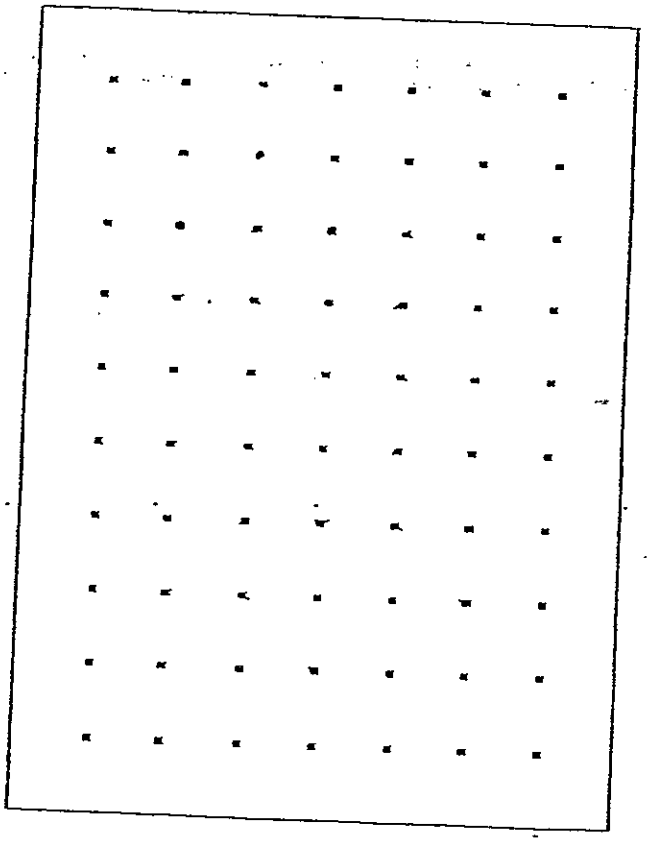
Ans: _____ kg

22 What is the missing number in the box?

$$54 : 36 = 90 : \square$$

Ans: _____

23 The pattern in the box shows part of a tessellation. Extend the tessellation by drawing two more unit shapes in the space provided.



24 Jun Kai paid $60 for a book. If he applied to be a member of the bookshop, he would only need to pay $45 for the book. Find the percentage discount given to Jun Kai if he applied to be a member.

Ans: _____ %

25 Mdm Azizah bought some chocolates. She kept $\frac{1}{3}$ of them for her husband. Her children shared the remaining chocolates. Each child ate $\frac{1}{6}$ of the chocolates. How many children did she have?

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)

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26 The average of 3 consecutive numbers is 33. Find the smallest number.

Ans: _____

---

27 Ahmad and Bobby started walking from the school to the library at the same time. Bobby walked at a faster speed of 30 m/min than Ahmad and reached the library in 20 min. Ahmad took 25 min to reach the library. What was the distance between the school and the library?

Ans: _____ m

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28 One plastic block and one wooden block weigh 500 g. Each plastic block weighs 100 g less than each wooden block. Find the mass of each plastic block. Leave your answer in kg.

Ans: _____ kg

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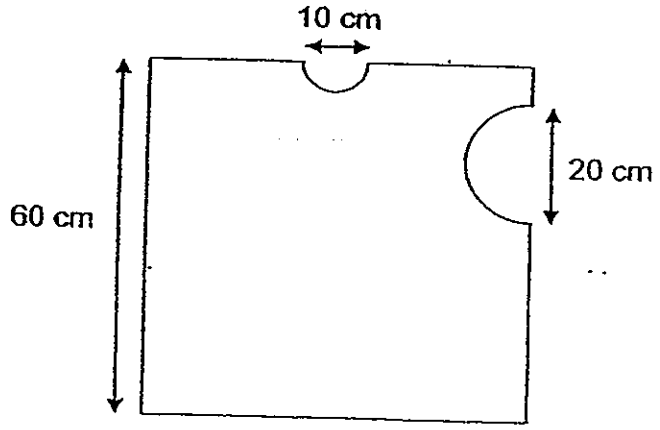
29 Two semicircles of diameters 10 cm and 20 cm are removed from a square of sides 60 cm each. Find the perimeter of the remaining figure. Express your answer in terms of π.



Ans: _____ cm

---

30 A disc of diameter 14 cm is rolled from point X to point Y. The disc makes 15 revolutions to reach point Y. What is the distance travelled by the disc? (Take $\pi = \frac{22}{7}$)

Ans: _____ cm

END OF PAPER

NANYANG PRIMARY SCHOOL

FIRST SEMESTRAL EXAMINATION 2012

PRIMARY 6

MATHEMATICS

PAPER 2

DURATION: 1 HOUR 40 MINUTES

Paper 2 Total	**/ 60**
GRAND TOTAL	**/ 100**

Name: _____ ( )

Class: Primary 6 ( )

Date: 14 May 2012

Parent's Signature: _____

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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 The masses of Parcel A, Parcel B and Parcel C are 600 g, 2 kg 400 g and $3\frac{2}{5}$ kg respectively. Find the ratio of the mass of Parcel A to the mass of Parcel B to the mass of Parcel C.

Ans: _____

---

2 A car departed from City X at 11.25 a.m. and reached City Y at 2.45 p.m.. It travelled at a constant speed of 105 km/h. Find the distance between the two cities.

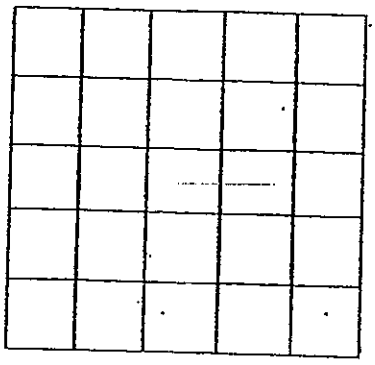
Ans: _____km

---

3 The ratio of the capacity of Tank A to the capacity of Tank B is 2 : 5. The ratio of the capacity of Tank B to the capacity of Tank C is 3 : 4. How many times is Tank C as large as Tank A? Leave your answer as a mixed number.

Ans: _____

4 The figure below is made up of 25 identical squares. The area of the figure is 625 cm^2. What is the perimeter of the figure?



Ans: _____ cm

5 David is $9m$ years older than his brother. In 5 years' time, his brother will be $\frac{4}{7}$ as old as he. What is their total age now?

Ans: _____ years old

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)

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6 Jason worked 25 days in a month. He saved 0.28 of his salary and gave 0.5 of the remainder to his mother and spent the rest. He spent $540. How much was he paid per month?

Ans: _____ [3]

---

7 A bus and a car left Town A and travelled towards Town B. The bus left Town A at 11.00 a.m. while the car left Town A one hour later. The car overtook the bus at 2.00 p.m.. The bus arrived at Town B at 8 p.m.. At what time did the car reach Town B?

Ans: _____ [3]

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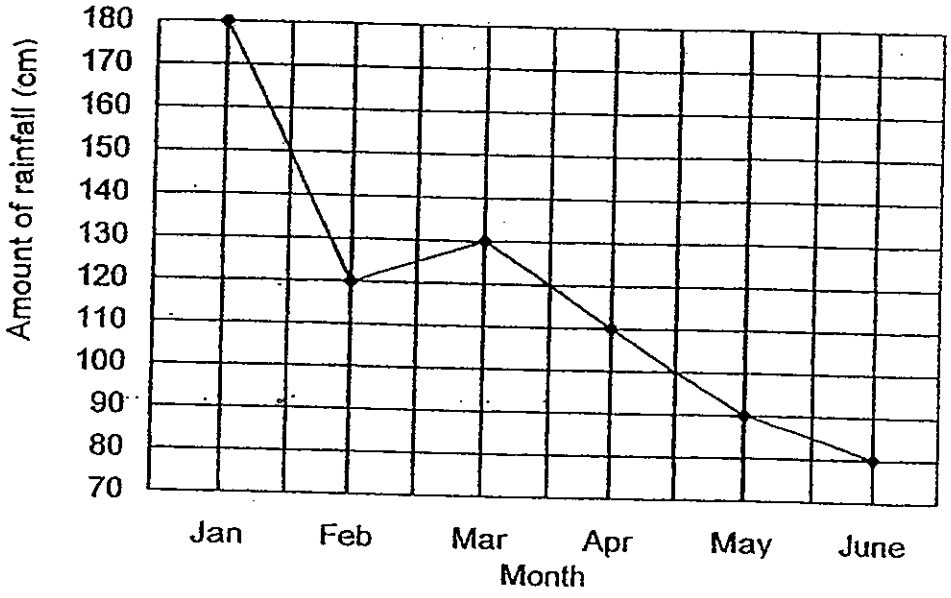
8 The line graph below shows the amount of rainfall recorded in Singapore from January to June. Study the graph carefully and answer the following questions.



(a) What was the percentage decrease in the amount of rainfall between the wettest and the driest months? Express your answer in 2 decimal places.

(b) What was the average amount of rainfall for the first five months?

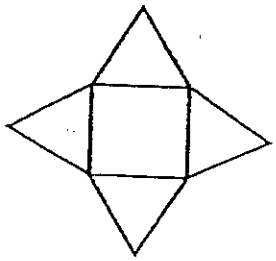
Ans: (a) _____ [1]

(b) _____ [2]

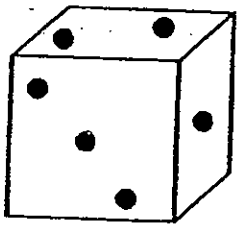
9 George and Hamid drove at constant speeds from City A to City B. They started their journey at the same time. When George completed $\frac{3}{4}$ of the journey, Hamid was 18 km behind George. George reached City B 20 min before Hamid. Find Hamid's speed in km/h.

Ans: _____ [3]

10 (a) Name the solid that can be formed by the net shown below.



(b) The figure below shows a common dice with one to six dots on the different faces. Find the sum of the number of dots shown on the other faces which are not shown.



Ans: (a) _____ [1]

(b) _____ [2]

11 Sunhub Telco has a few mobile phone service plans as shown below.

Plan	SMS	Talk time	Price
A	300	80 minutes	$27
B	400	90 minutes	$33.50
C	200	120 minutes	?

Sunhub Telco is going to launch Plan C which offers 200 sms and 120 minutes of talk time. If the cost per sms and the cost per minute of talk time stay the same for the three plans, how much should Sunhub Telco charge for Plan C?

Ans: _____ [4]

12 Daisy had $\frac{3}{4}$ as much money as Vijay after spending $25 on a bag. Then Daisy received $220 from her mother and Vijay spent $50. In the end, Daisy had twice as much money as Vijay. How much money did Daisy have before buying the bag?

Ans: _____ [4]

13 In a stadium, there were 840 more men than women. $\frac{1}{7}$ of the men and 20% of the women left the stadium. In the end, there were 960 more men than women. How many people were at the stadium in the end?

Ans: _____ [4]

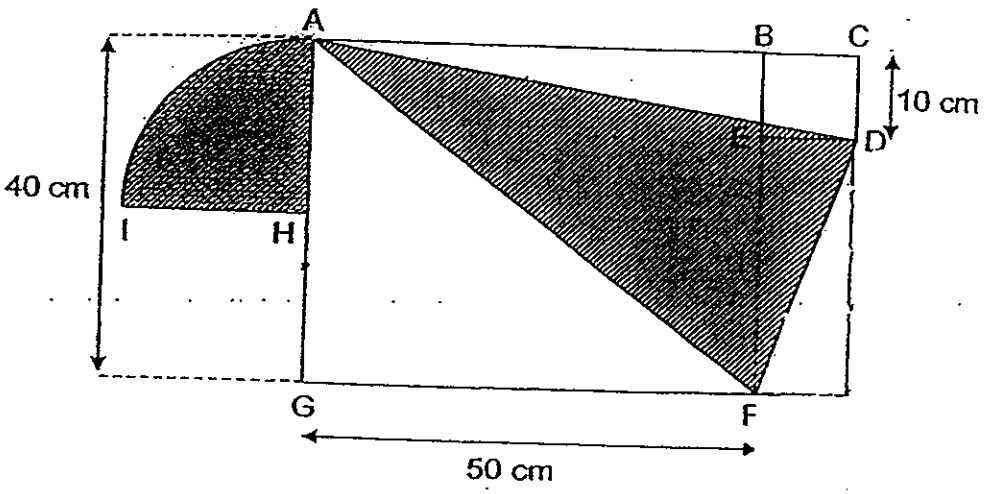
14 Kexin has 25% as many postcards as Si Ming. Si Ming has 140% as many postcards as Lina. If Si Ming gives 28 postcards to Lina, Si Ming and Lina will have equal number of postcards. How many postcards do they have altogether?

Ans: _____ [4]

15 At first, the total number of beads in Bag A and Bag B was 1760. After $\frac{1}{4}$ of the beads in Bag A and 260 beads in Bag B were removed, the ratio of the number of beads in Bag A to the number of beads in Bag B became 6 : 7. Find the ratio of the number of beads in Bag A to that of Bag B at first. Leave your answer in its simplest form.

Ans: _____ [4]

16 In the figure below, ABFG is a rectangle, BCDE is a square, ADF is a triangle and AHI is a quadrant. H is the mid-point of AG. CD is 10 cm, AG is 40 cm and GF is 50 cm. Find the area of the shaded part. (Take $\pi = 3.14$)

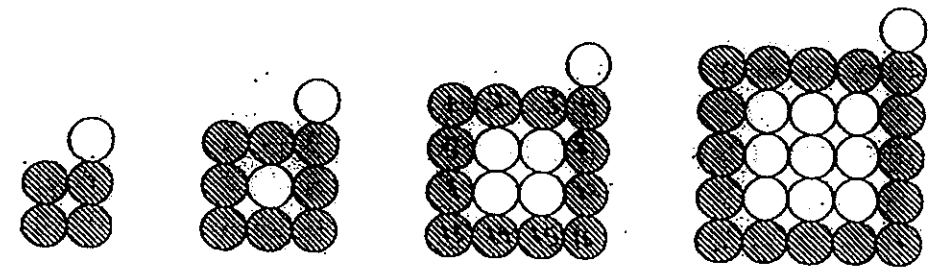


Ans: _____ [5]

17 In a bag, the ratio of the number of $2 notes to the number of $10 notes was 3 : 4. Ten $10 notes were removed from the bag to exchange for $2 notes which were then put back into the bag. The total value of money in the bag was unchanged after the exchange. The ratio of the number of $2 notes to the number of $10 notes then became 8 : 3. Find the ratio of the value of the $2 notes to the value of the $10 notes in the bag after the exchange. Leave your answer in its simplest form.

Ans: _____ [5]

18 The figures below are made up of identical circles.



Pattern 1 Pattern 2 Pattern 3 Pattern 4

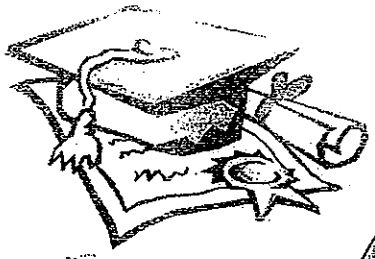
(a) How many shaded circles are there in Pattern 141?
(b) How many unshaded circles are there in Pattern 25?
(c) 1682 circles are needed to form a certain pattern. Which pattern is it?

Ans: (a) _____ [1]

(b) _____ [2]

(c) _____ [2]

END OF PAPER

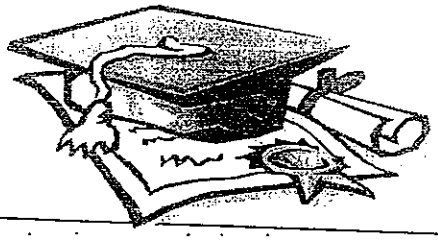


ANSWER SHEET

EXAM PAPER 2012

SCHOOL : NANYANG PRIMARY SCHOOL
SUBJECT : PRIMARY 6 MSTHS

TERM : SA1



Paper 1

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

16 55
17 6350
18 28
19 18 6/25
20 34850
21 12.023kg
22 60
24 25%
25 4
26 32
27 3000m
28 500 - 100 = 400
400 / 2 = 200g
200g = 0.2kg
29 Radius of small circle = 10 ÷ 2 = 5cm
Perimeter of smaller semicircle = 1/2 x 2 x ∏ x 5 = 5∏
Radius of larger semicircle = 20 ÷ 2 = 10cm
Perimeter of small circle = 1/2 x 2 x ∏ x 10 = 10∏
Perimeter = 60 + 60 + (60 - 10) + (60 - 20) + 5∏ + 10∏ = 210 + 15∏ cm

30 Radius = 14 ÷ 2 = 7cm
2 x 22/7 x 7 x 15 = 660cm

Paper 2

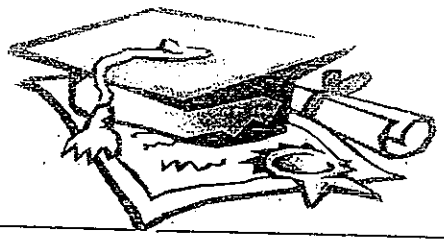
1 600:2400:3400 = 3:12:17

2 Time taken: 3h 20min
3 20/60 x 105 = 350km

EXAM PAPER 2012

SCHOOL : NANYANG PRIMARY SCHOOL
SUBJECT : PRIMARY 6 MSTHS

TERM : SA 1



3 A:B:C = 6:15:20
20/6 = 3 1/3

4 √625 = 25
25 x 4 = 100 cm

5 Let david's brother age be x
David's age 5 years later = 9 + x + 5
David's brother's age = x + 5

(x + 5) ÷ (9 + x + 5) = 4 /7
x = 7
Total age = x + 5 + 9 + x + 5
= 7 + 5 + 9 + 7 + 5
= 33

6 Saved 28%
Gave 0.5(100-28) = 36% to mother
Spend = 100 - 28 - 36 =36%
36% = 540
100% = $1500

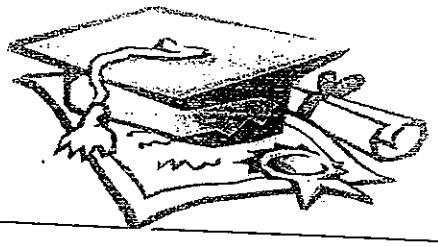
7 Car's took 2 hour to reach bus which took 3 hour
Car's speed is 3/2 times of bus
Time that bus took = 9 hours
Car will take 2/3 of bus time: 2/3 x 9 = 6 hours
Car will arrive at 6pm

8a Decrease by 180 - 80 = 100mm
100 / 180 x 100 = 55.56 %
8b (180 + 120 + 130 + 110 + 90) ÷ 5 = 126cm

9 When george complete 1/4 of the journey, Hamid is 18 ÷ 3 = 6km behind
When george complete the journey, Hamid is 6 x 4 = 24km behind
Hamid speed: 24km / 20min = 72km / hour

10a Pyramid
10b 4 + 5 + 6 = 15

11 300S + 80M = 27 -Equation 1
400S + 90M = 33.50 -Equation 2
Eq 1 x 4: 1200S + 320M = 108 -Equation 3
Eq 2 x 3: 1200S + 270M = 100.5 -Equation 4



Equation 2 divide by 6:
7A/8 = B - 260 Equation 3
Equation 3 + Equation 1:
1 7/8 A = 1500
A = 800
B = 960
Ratio = 5:6

16 Area of triangle ACD = 1/2 x 10 x 60 = 300
Area of triangle DFx = 1/2 x 10 x 30 = 150
Area of triangle AGF = 1/2 x 50 x 40 = 1000
Area of triangle ADF = (40 x 60) - (300 + 150 + 1000) = 950
Area of quadrant = $3.14 \times 20^2 \times 1/4 = 314$
Total Area = 1264 cm^2

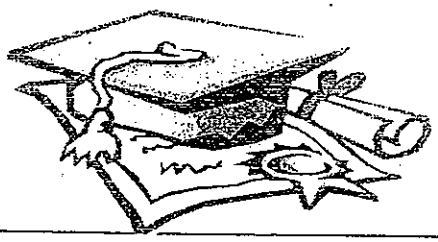
17 Let initial no. of \$2 notes be 3x
Let initial no. of \$10 notes be 4x

$8(4x - 10) = 3(3x + 50)$
x = 10
Initally: \$60 worth of \$2 notes
Initally: \$400 worth of \$10 notes

Initally: \$160 worth of \$2 notes
Initally: \$300 worth of \$10 notes

Ratio = 160:300 = 8:15

18a $4 \times 141 = 564$
18b $(25 - 1)^2 + 1 = 577$
18c $1682 = (x + 1)^2 + 1$
x = 40



Eq 3 - Eq 4: 50M = 7.50
10M = 1.50
Equation 2: 400S + 9(1.50) = 33.5
400S = 20
200S = 10
200S + 120M = 10 + 12(1.50) = $28

12 Let Vijay have x dollars at the end

	Daisy	Vijay
End	2x	x
Receive	2x - 220	x + 50
At first	2x - 220 +25	x + 50

2x - 195 = 3/4 (x + 50)
x = 186
At first: 2x - 195 = 2(186) - 195 = $177

13 Let number of men be x.

	Men	Women
At first:	x	x - 840
Later:	6x/7	4x/5 - 672

End: 6x/7 - (4x/5 - 672) = 960
x = 5040

Total number of people: 6x/7 + (4x/5 - 672) = 7680 people

14 Let number of post cards Si Ming has = x
Siming = x
Kexin = x/4
Lina = 5x/7

x - 28 = 5x/7 + 28
x = 196

Total = x + x/4 + 5x/7 = 1 27/28
= 110 post cards

15 A + B = 1760 -Equation1
Remaining in Bag A = 3A/4
Remaining in Bag B = B - 260
7(3A/4) = 6(B - 260) Equation 2