Name:_____( ) 23 August 2013

Class: P 6 _____

CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION 2 2013

MATHEMATICS

PRIMARY 6

PAPER 1

(BOOKLET A)

15 questions

20 marks

Total Time for Booklets A and B: 50 min

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Shade your answers in the Optical Answer Sheet (OAS) provided.

The use of calculators is NOT allowed.

This booklet consists of printed pages 1 to 6.

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. All diagrams are not drawn to scale. (20 marks)

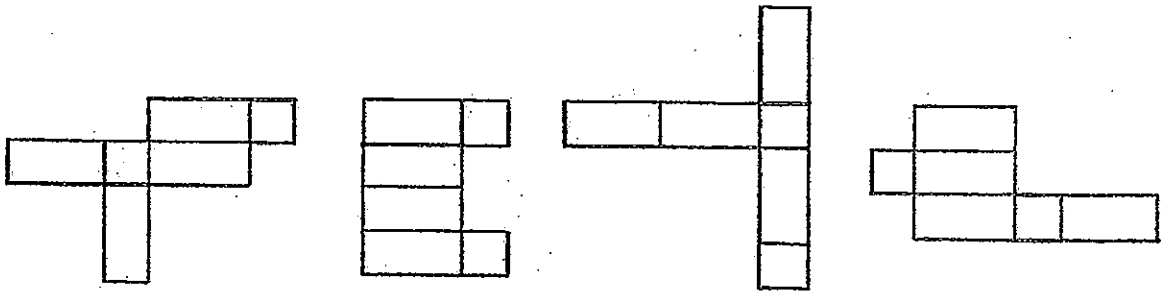
---

1. Which of the following is the same as 6080 g?

   (1) 6 kg 8 g
   (2) 6 kg 80 g
   (3) 60 kg 8 g
   (4) 60 kg 80 g

---

2. Which of the following figures is a net of a cuboid?



   (1) A
   (2) B
   (3) C
   (4) D

---

3. How many eighths are there in $2\frac{3}{4}$?

   (1) 6
   (2) 11
   (3) 19
   (4) 22

(Go on to the next page)

4. Which one of the following fractions is the largest?

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

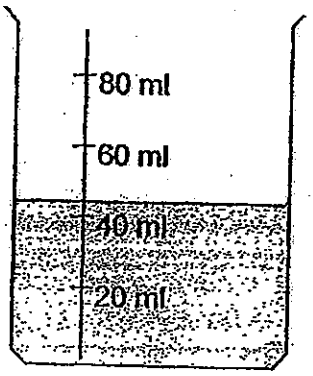
(2) $\frac{2}{7}$

(3) $\frac{4}{9}$

(4) $\frac{4}{11}$

---

5. The figure below shows a container with some water.



What is the best estimate of the volume of water in the container?

(1) 40 ml

(2) 45 ml

(3) 50 ml

(4) 55 ml

(Go on to the next page)

6. When a number is divided by 32, the quotient is 128.
What is the quotient when the same number is divided by 8?

(1) 4

(2) 16

(3) 32

(4) 512

---

7. Which of the following is nearest to 1?

(1) 0.01

(2) 0.09

(3) 1.01

(4) 1.9

---

8. Caspian completed a race in 280 seconds. Ernest was 27 seconds slower than Caspian but 13 seconds faster than Martin.
How long did Martin take to complete the race?

(1) 240 s

(2) 266 s

(3) 294 s

(4) 320 s

---

9. What is the missing number in the box?

$35 \div \square = 0.035 \times 100$

(1) 1

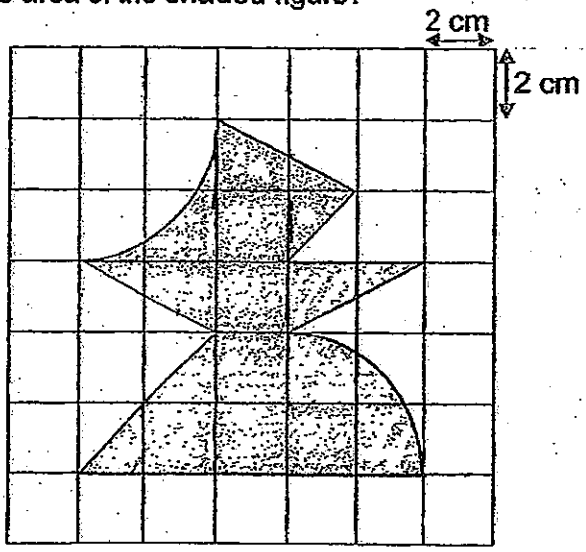
(2) 10

(3) 100

(4) 1000

(Go on to the next page)

10. In the square grid below, a shaded figure is drawn.
What is the area of the shaded figure?



(1) 9.5 cm^2

(2) 13.5 cm^2

(3) 38 cm^2

(4) 54 cm^2

---

11. Simplify $11n - 2 - 3n \times 3 + 5$.

(1) $2n + 3$

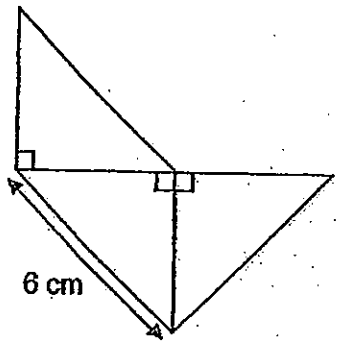
(2) $2n - 7$

(3) $8n - 1$

(4) $8n + 16$

(Go on to the next page)

12. The figure below is made up of 3 identical isosceles right-angled triangles. What is the area of the figure?



(1) 27 cm^2

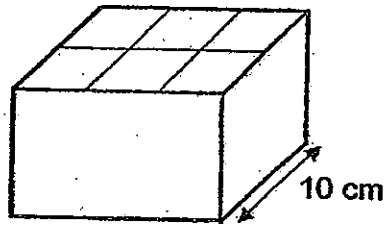
(2) 54 cm^2

(3) 72 cm^2

(4) 108 cm^2

---

13. The figure below shows a box which can fit exactly 12 identical cubes. What is the capacity of the box?



(1) 300 cm^3

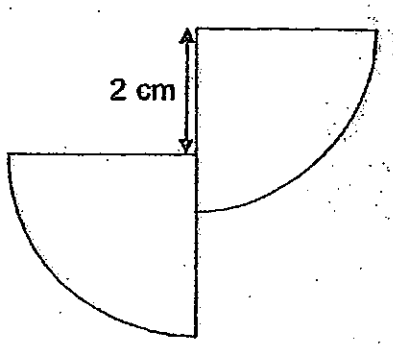
(2) 750 cm^3

(3) 1500 cm^3

(4) 1800 cm^3

(Go on to the next page)

14. The figure below is made up of two identical quarter circles of radius 3 cm. What is the perimeter of the figure?



(1) $(3\pi + 6)$ cm

(2) $(3\pi + 8)$ cm

(3) $(3\pi + 9)$ cm

(4) $(3\pi + 10)$ cm

---

15. Spencer drew 3 lines of different lengths on a piece of paper. The total length of the 3 lines measured 42 cm at first. When he doubled the length of the first line, halved the second line and increased the third line by 7 cm, the 3 lines became equal in length. What was the length of the longest line at first?

(1) 12 cm

(2) 14 cm

(3) 24 cm

(4) 28 cm

END OF BOOKLET A

Name:_____( ) 23 August 2013

Class: P 6_____

CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION 2 2013

MATHEMATICS

PRIMARY 6

PAPER 1

(BOOKLET B)

15 questions

20 marks

Total Time for Booklets A and B: 50 min

Booklet A	
Booklet B	
Total	

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of calculators is **NOT** allowed.

This booklet consists of printed pages 7 to 13.

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)

Do not write in this space.

16. Find the value of $6.86 \div 7$.
Express your answer as a fraction in the simplest form.

Ans: _____

17. When a whole number is rounded off to the nearest thousand, it becomes 880 000. What is the largest possible value of this number?

Ans: _____

18. Express $2\frac{3}{8}$ as a decimal.

Ans: _____

(Go on to the next page)

19. The ratio of Johnny's salary to Isaac's salary is 3 : 2.
What fraction of Isaac's salary was Johnny's salary?

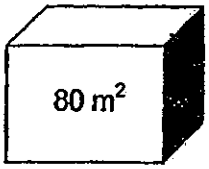
Do not write in this space.

Ans: _____

20. Zachary bought $\frac{4}{9}\ell$ of fruit juice. He drank $\frac{1}{3}\ell$ of it.
How many litres of fruit juice had he left?

Ans: _____ ℓ

21. The figure below shows a cuboid. The shaded face is a square of area 64 m^2. What is the volume of the cuboid?



Ans: _____ m^3

(Go on to the next page)

22. Ethan sets his alarm clock to ring every 3 minutes. His younger brother sets his alarm clock to ring every 5 minutes. Both clocks rang at the same time at 6:00 a.m. What would be the next time that both clocks ring at the same time?

Do not write in this space.

Ans: _____ a.m.

23. Peter has two overdue library books for the same number of days. The library charges 15 cents per day for each overdue book. Peter has to pay a total fine of $1.50. How many days have the books been overdue?

Ans: _____

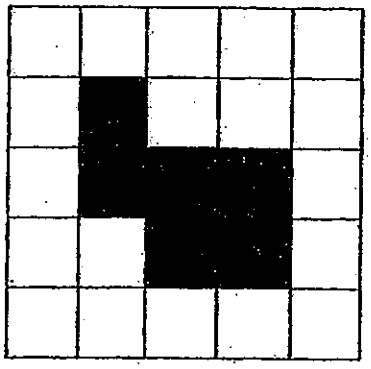
(Go on to the next page)

24. A cube of volume 216 cm^3 has only two of its faces painted. What is the total area of its unpainted faces?

Do not write in this space.

Ans: _____ cm^2

25. The figure below is made up of identical squares. Shade **one** more square so that the figure has exactly two lines of symmetry.



Total marks for questions 16 to 25

(Go on to the next page)

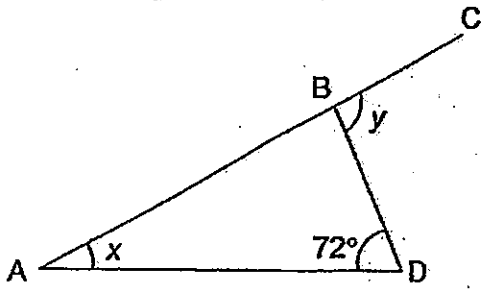
Questions 26 to 30 carry 2 marks each. Show your working and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. (10 marks)

Do not write in this space.

26. Mrs Heng deposited a sum of $2500 in a bank that offered an annual interest rate of 4%. How much would she have in the bank at the end of one year?

Ans: $_____

27. In the figure below, ABD is a triangle and ABC is a straight line. Given that $\angle y$ is thrice $\angle x$, find $\angle x$.



Ans: _____°

(Go on to the next page)

28. There were three coin boxes, A, B and C, each containing some money.
The average amount of money in coin boxes A and B was $74.
The average amount of money in coin boxes B and C was $112.
How much more money was there in coin box C than coin box A?

Do not write in this space.

Ans: $_____

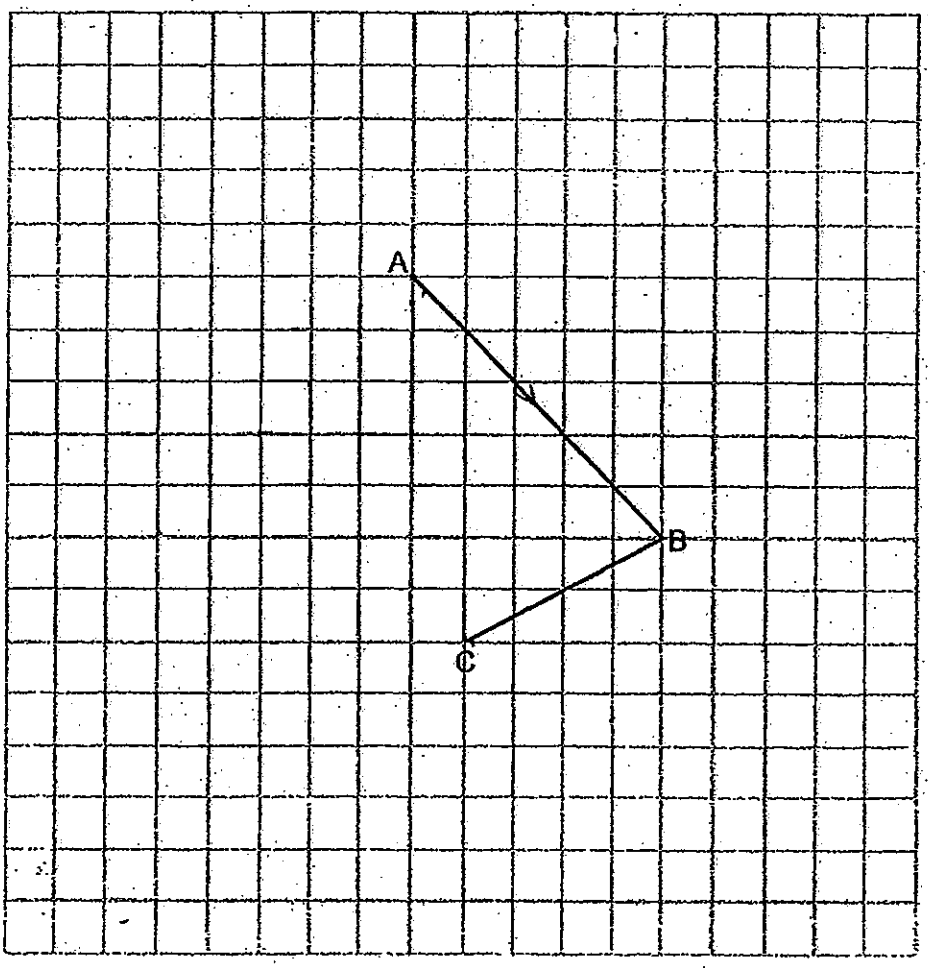
29. Marc participated in a 100-m race. He ran at a speed of 12 m/s for the first 60 m of the race. He then ran the remaining distance at a speed of 4 m/s. What was Marc's average speed for the race?
Give your answer correct to 1 decimal place.

Ans:_____ m/s

(Go on to the next page)

30. AB and BC are two sides of a trapezium ABCD. AD is perpendicular to AB. Complete the trapezium by drawing the other two sides, CD and AD, in the square grid below.

Do not write in this space.



Total marks for questions 26 to 30

END OF BOOKLET B
END OF PAPER 1

Name : _____ ( ) 23 August 2013

Class : P 6 _____

CATHOLIC HIGH SCHOOL

PRELIMINARY EXAMINATION 2 2013

MATHEMATICS

PRIMARY 6

PAPER 2

Paper 1 Booklet A	20
Paper 1 Booklet B	20
Paper 2	60
Total Marks	100

Total Time: 1 h 40 min

Parent's Signature:

INSTRUCTIONS TO CANDIDATES

Do not turn over this page until you are told to do so.

Follow all instructions carefully.

Answer all questions.

Write your answers in this booklet.

The use of an approved calculator is expected, where appropriate.

This booklet consists of printed pages 1 to 16.

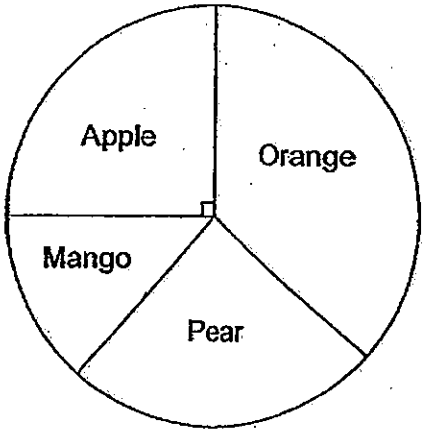
Questions 1 to 5 carry 2 marks each. Show your working clearly and write your answers in the spaces provided. For questions which require units, give your answers in the units stated. All diagrams are not drawn to scale. (10 marks)

Do not write in this space.

1. A bookstore had 3y packets of pens. Each packet contained 5 pens. 2 packets of the pens were damaged and the bookstore sold the remaining pens. How many pens were sold?
Give your answer in terms of y.

Ans: _____

2. There are 4 types of fruit in a refrigerator. The pie chart represents the number of fruits of each type.



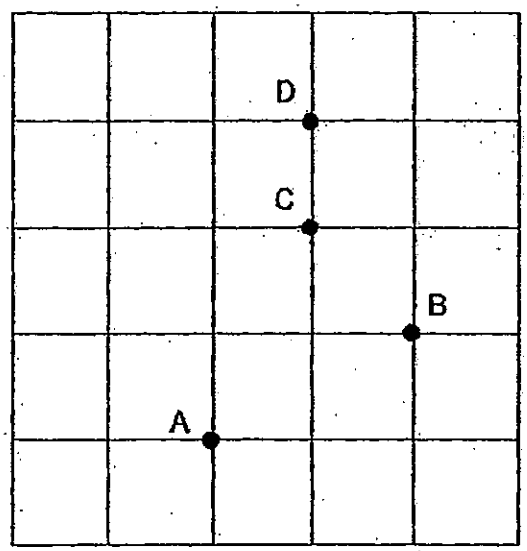
The ratio of the number of mangoes to the number of pears to the number of oranges is 6 : 8 : 13. What is the ratio of the number of pears to the number of apples? Give your answer in the simplest form.

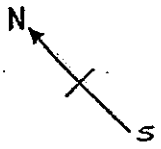
Ans: _____

(Go on to the next page)

3. The square grid shows the positions of four points A, B, C and D.
Fill in each blank with A, B, C or D to complete the sentence correctly.

Do not write in this space.



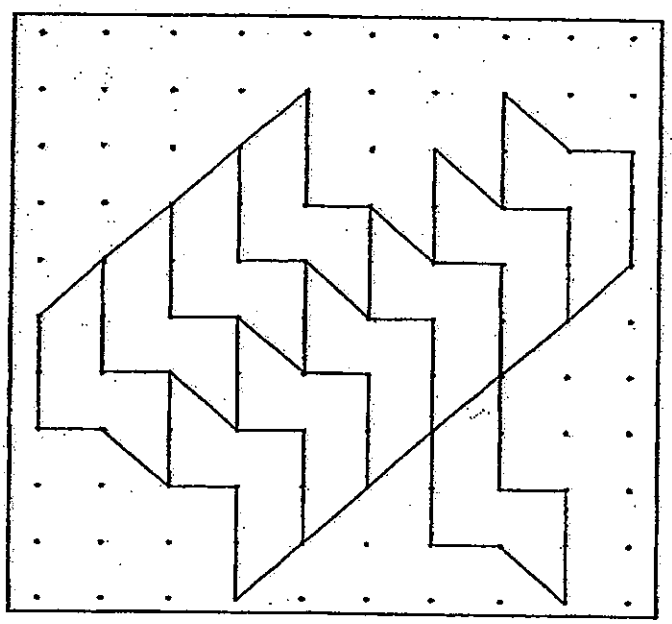


Point _____ is north-east of point _____.

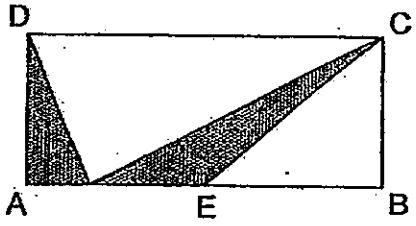
(Go on to the next page)

4. The pattern in the box below shows part of a tessellation. Extend the tessellation by drawing three more unit shapes in the space provided in the box.

Do not write in this space.



5. In the figure, ABCD is a rectangle of area 96 cm^2, with AE = EB. What is the total area of the shaded parts?



Ans: _____ cm^2

(Go on to the next page)

For questions 6 to 18, show your working 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. All diagrams are not drawn to scale. (50 marks)

Do not write in this space.

6. Aaron painted 12 similar walls in 7 hours while Benedict painted 9 such walls in 5 hours. How many hours did they take to paint 246 walls together?

Ans:_____[3]

(Go on to the next page)

7. Jerry spent $\frac{1}{4}$ of his salary on household bills. He spent $\frac{3}{5}$ of the remainder on food and saved the rest of the money. The amount he saved was $420. How much more did he spend on food than on household bills?

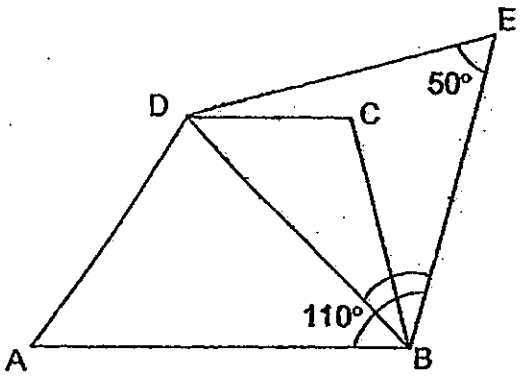
Do not write in this space.

Ans: _____ [3]

(Go on to the next page)

8. In the figure below, ABCD is trapezium and BDE is an isosceles triangle, with DB = EB. Find ∠CDE.

Do not write in this space.



Ans:_____[3]

(Go on to the next page)

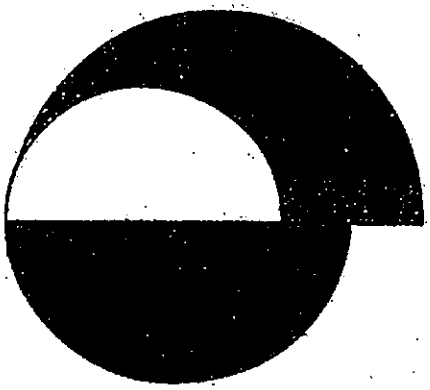
9. Ali, Ben and Charlie share some marbles. Ali's share is $\frac{2}{5}$ of what Ben and Charlie have. Ben's share is $1\frac{1}{7}$ times of Charlie's share. Charlie has 10 more marbles than Ali. How many marbles are there altogether?

Do not write in this space.

Ans: _____ [3]

10. The figure below is made up of 3 different semi-circles. The radius of the smallest semi-circle is 3 cm.
Using $\pi = 3.14$, find the area of the shaded part.

Do not write in this space.

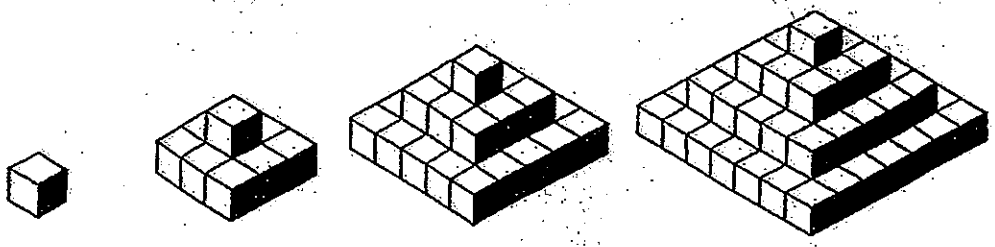


Ans: _____ [3]

(Go on to the next page)

11. Oliver used identical cubes to build some structures. The first four structures are shown below.

Do not write in this space.



Structure 1 Structure 2 Structure 3 Structure 4

For each structure, he first stacked the cubes together and then painted some of the faces of each structure. The shaded faces shown are the faces he painted. The table below shows the number of cubes and the number of faces painted in each structure.

Structure Number	Number of cubes	Number of faces painted
1	1	1
2	10	4
3	35	9
4	84	16
5		

[2]

(a) Complete the table for Structure 5.

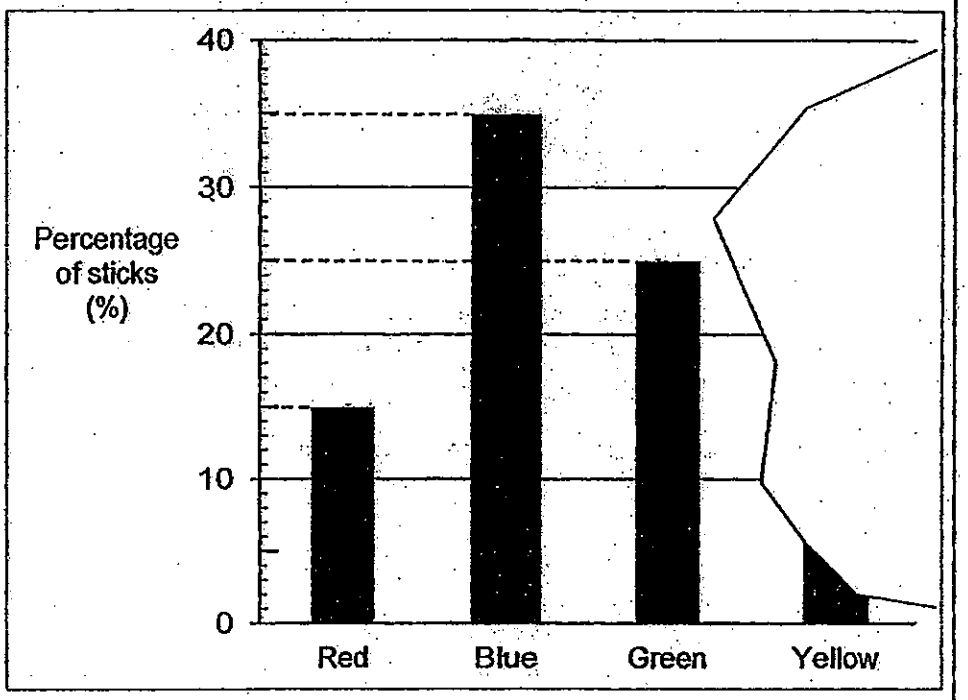
(b) How many cubes do not have any of its faces painted in Structure 10?

Ans: (b)_____[2]

(Go on to the next page)

12. Kevin had 240 red, blue, green and yellow sticks. The bar graph shows the percentage of sticks for each colour. Part of the graph was accidentally torn and the bar representing the yellow sticks was missing.

Do not write in this space.



Kevin then gave away 9 yellow sticks and bought some blue sticks. In the end, the percentage of blue sticks became 40%.

(a) What was the percentage decrease in the number of yellow sticks?

(b) How many blue sticks did Kevin have in the end?

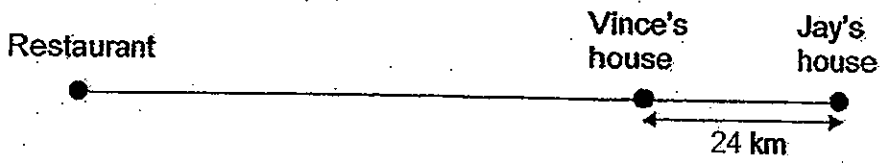
Ans: (a) _____ [2]

(b) _____ [2]

(Go on to the next page)

13. Vince's house and Jay's house are 24 km apart. Vince's house is located between a restaurant and Jay's house as shown below.

Do not write in this space.



One day, Vince and Jay left the restaurant for their respective houses. Both started driving from the restaurant at the same time and did not change their speed throughout their journey. When Vince covered $\frac{1}{2}$ of his journey, Jay was 3 km ahead of Vince. Vince took 30 minutes to reach his house while Jay took 42 minutes to reach his house.
What was Jay's speed in km/h?

Ans:_____ [4]

(Go on to the next page)

14. Mr Tan and Mr Lim bought a total number of 131 nails for carpentry work. Mr Lim used thrice as many nails as Mr Tan. The remaining number of nails Mr Tan had were 8 fewer than what he had used. He had twice as many remaining nails as Mr Lim. How many nails did Mr Lim have at first?

Do not write in this space.

Ans: _____ [4]

(Go on to the next page)

15. Jennifer packed some beads into 3 bags labelled A, B and C. Bag A had the most number of beads and Bag C had the least. The difference in the number of beads between Bag A and the other two bags were 51 and 108 respectively. Given that Bag C contained 15% of the total number of beads, how many beads were there altogether?

Do not write in this space.

Ans: _____ [4]

16. Mrs Tan prepared the exact amount of the ingredients needed to bake 96 biscuits using the recipe 1.

Do not write in this space.

Recipe 1

Biscuits Recipe (makes 12 biscuits)
18 tablespoons of flour
13 tablespoons of cream

Recipe 2

Biscuits Recipe (makes 12 biscuits)
18 tablespoons of flour
10 tablespoons of cream

Mrs Tan used recipe 1 to bake the first 12 biscuits. Then she decided to use recipe 2 to bake the rest of the biscuits. In the end, she had some cream left over and decided to prepare more flour to bake more biscuits using recipe 2. How many tablespoons of flour did Mrs Tan need so that she can bake as many biscuits as possible with the remaining cream?

Ans: _____ [5]

(Go on to the next page)

17. At a concert, the usual price of a ticket is $8.50. During a promotion, for every 2 tickets purchased at the usual price, a child gets to purchase a ticket at half the usual price. A group of people paid a sum of $199.75 and saved $29.75. How many people were there in the group?

Do not write in this space.

Ans: _____ [5]

(Go on to the next page)

18. Benjamin has a square piece of paper. He cuts along the dotted lines shown in Figure 1 to get the shaded part and 8 identical isosceles triangles. Triangle PQR in Figure 2 is one such triangle with a perimeter of 16 cm. The ratio of the perimeter of the square paper to the perimeter of the shaded part is 1 : 2. Find the length of PQ.

Do not write in this space.

Figure 1

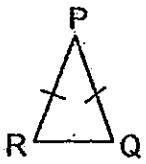


Figure 2

Ans: _____ [5]

END OF PAPER.
PLEASE CHECK YOUR WORK CAREFULLY.

Answer Key

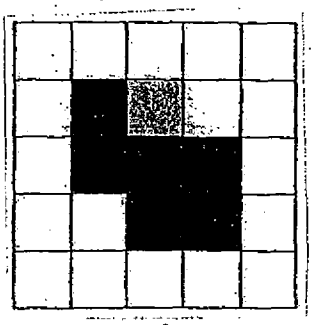
EXAM PAPER 2013
SCHOOL : CATHOLIC HIGH
SUBJECT : PRIMARY 6 MATHEMATICS

TERM : SA2

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

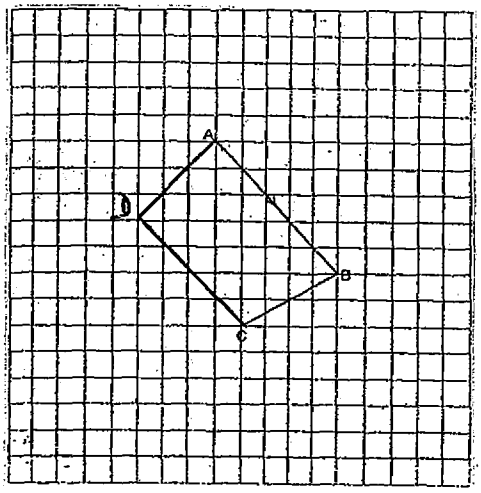
16)49/50 **17)880499** **18)2.375** **19)1½** **20)1/9**

21)640m3 **22)6.15a.m.** **23)5** **24)144cm2** **25)**



26)$2600 **27)36°** **28)$76** **29)6.7 m/s**

30)



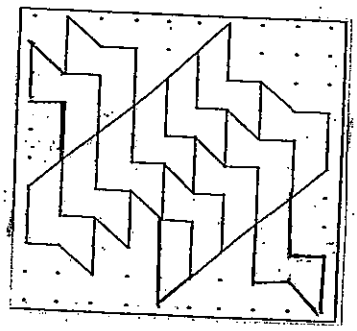
Paper 2

1)3y x 5 = 15y
2 x 5 = 10
15y – 10 = (15y – 10)

2) 8 : 9

3)D C

4)



5)96 ÷ 4= 24cm2

6)70 h

7)6u→420
1u→420 ÷ 6 = 70
9u – 5u = 4u
4u→70 x 4 = $280 more

8)180° – 50° – 50° = 80°
110° – 80° = 30°
50° – 30° = 20°

9)A : B : C : T
6 : 8 : 7 : 21

1u→10
21u→21 x10 = 210 marbles

10)Big ∩→ ½ x Π x 5 x 5 = 12½Π
Medium ∩→ ½ x Π x 4 x 4 = 8Π
Small ∩→ ½ x Π x 3 x 3 = 4.5 Π
Area of shaded→(12.5Π - 4.5Π) + 8Π
= 16Π
= 50。24₂

11)a)165 25
b)1165 + 165 = 1330
1330 – 100 = 1230

12)a)15%
b)98

13)24km – 6km = 18km
J covered 18km in 12 min
JS→18/12 x 60 = 90km/h
90 x 15/60 = 22½km
22½km – 3km = 19½km
VS→19.5/15 x 60 = 78km/h

14)11u→131 (8x4) = 99
1u→99÷11= 9
7u+ (8x3)→(9x7) + (8x3) = 87

15)15u x 3 = 45u
100u – 45u = 55u
55u→165
1u→165÷55 = 3
100u→3 x 100 = 300

16)96 ÷12 = 8
18 x 8 = 144u (flour)
13 x 8 = 104u (cream)
144 – 18 = 126
104 – 13 = 91
126÷18 = 7
91÷10 = 9 r1
7 x 10 = 70
91 – 70 = 21
21÷10 = 2 r 1
2 x 18 = 36

17)8.50÷2 = 4.25
29.75÷4.25 = 7
199.75 – 29.75 = 170
170÷8.50 = 20
20 + 7 = 27

18)12 x 8 = 96
4 x 4 = 16
16 x 4 = 64
96 + 16 + 16 = 128
128 ÷2 = 64
12÷2 = 6cm