

--	--	--	--	--	--



De La Salle School



St. Anthony's Primary



St. Joseph's Institution Junior



St. Stephen's School

**CHRISTIAN BROTHERS' SCHOOLS**  
**PRELIMINARY EXAMINATION**  
**2012**  
**PRIMARY 6**  
**MATHEMATICS**  
**PAPER 1**  
**(BOOKLET A)**

NAME: \_\_\_\_\_ ( )

CLASS: 6 \_\_\_\_\_

**15 Questions**  
**20 Marks**

**Total Time for Booklets A and B : 50 min**

Instructions to candidates

- Do not open this booklet until you are told to do so.
- Follow all instructions given at the beginning of each section carefully.
- An Optical Answer Sheet is provided for answers to Questions 1 to 15.
- Do not waste time. If a question is difficult, go on to the next one.
- Answer all questions.
- You are not allowed to use a calculator.

•  
•  
•

This booklet consists of 6 printed pages.

**CBS 2012 Primary 6 Preliminary Examination**

---

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. Sharma bought a branded watch that cost \$14 000 when rounded off to the nearest hundred dollars. What could be the actual cost of the watch?

(1) 13 899

(2) 13 951

(3) 14 067

(4) 14 102

2.  $5.25 = 5 + \frac{1}{\square}$

What is the missing number in the box?

(1) 5

(2) 2

(3) 8

(4) 4

3. What is the value of  $207 - 21 \times 3 + 64 \div 2$ ?

(1) 104

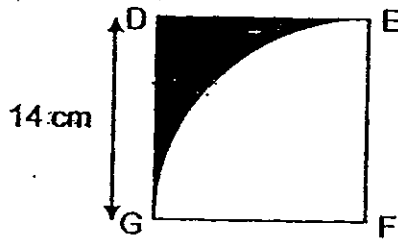
(2) 176

(3) 311

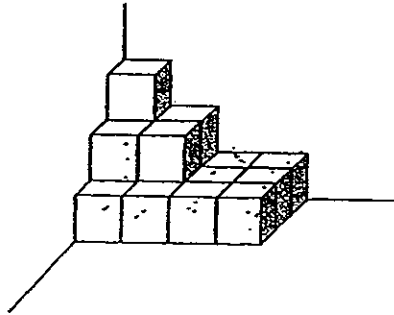
(4) 590

•  
•  
•  
•

4. The figure below shows a square DEFG of length 14 cm and a quadrant. Find the perimeter of the shaded region. (Take  $\pi = \frac{22}{7}$ )



- (1) 22 cm  
(2) 39 cm  
(3) 50 cm  
(4) 88 cm
5. The solid figure below is made up of 1-cm cubes. How many cubes must be added to the solid to make a 4 cm by 3 cm by 3 cm cuboid?

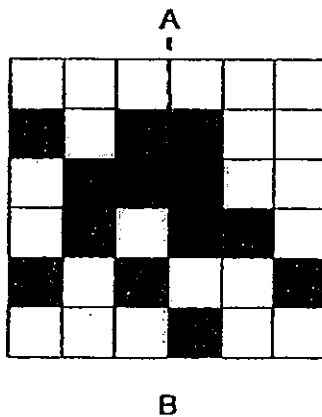


- (1) 12  
(2) 16  
(3) 17  
(4) 19
6. Matthew is facing east. If he turns anti-clockwise to face south-west, what angle does he turn through?
- (1)  $45^\circ$   
(2)  $135^\circ$   
(3)  $225^\circ$   
(4)  $315^\circ$

7. Find the value of  $8p + \frac{5+p}{2}$  when  $p = 7$ .

- (1) 34
- (2) 49
- (3) 62
- (4) 93

8. The figure below shows 13 shaded squares. What is the least number of squares that must be shaded so that the line AB becomes a line of symmetry?

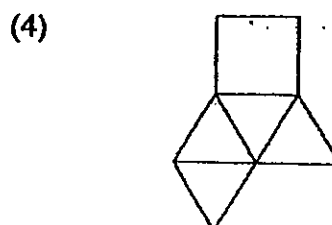
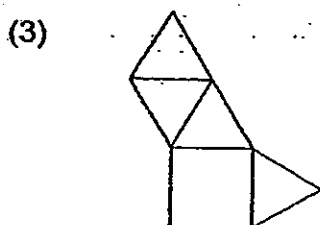
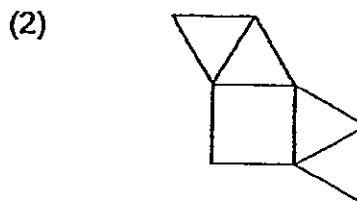
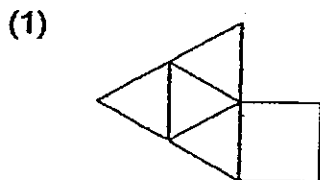


- (1) 5
- (2) 6
- (3) 3
- (4) 4

9. Lionel jogs 856 m in 4 minutes and jogs another 760 m in 4 minutes. What is his average jogging speed?

- (1) 101 m/min
- (2) 202 m/min
- (3) 404 m/min
- (4) 808 m/min

10. Which of the following is **not** a net of the solid shown?



11. The table below shows the number of novels read by 4 groups of pupils in a particular week.

Group	Number of pupils	Number of novels each pupil read
1	32	1
2	10	2
3	8	3
4	11	4

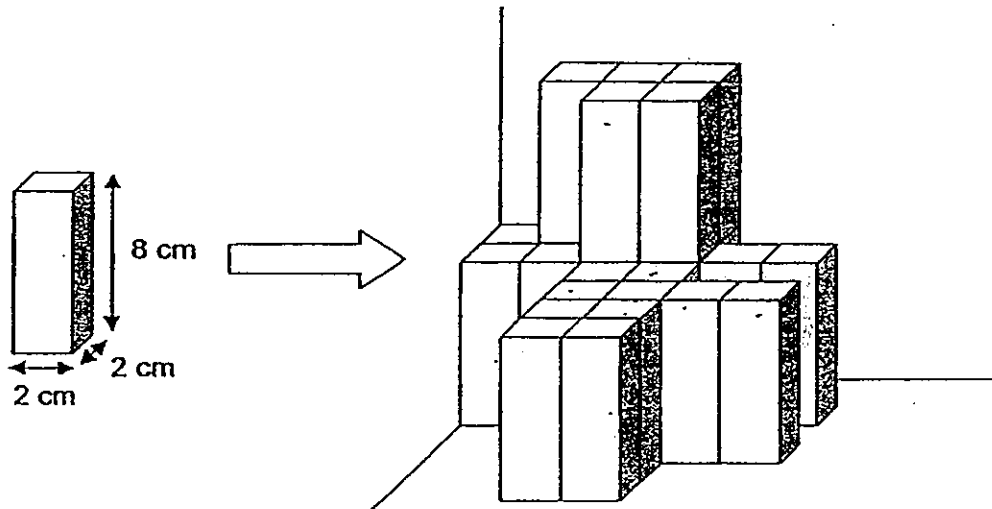
Which group of pupils read 20% of the total number of novels?

- (1) 1  
 (2) 2  
 (3) 3  
 (4) 4

12. The ratio of the price of an orange to the price of an apple is 2 : 3.  
Derek has enough money to buy 42 oranges. How many apples can he buy with the same amount of money?

- (1) 16
- (2) 28
- (3) 43
- (4) 63

13. The solid figure below is made up of similar cuboids, each measuring 2 cm by 2 cm by 8 cm.



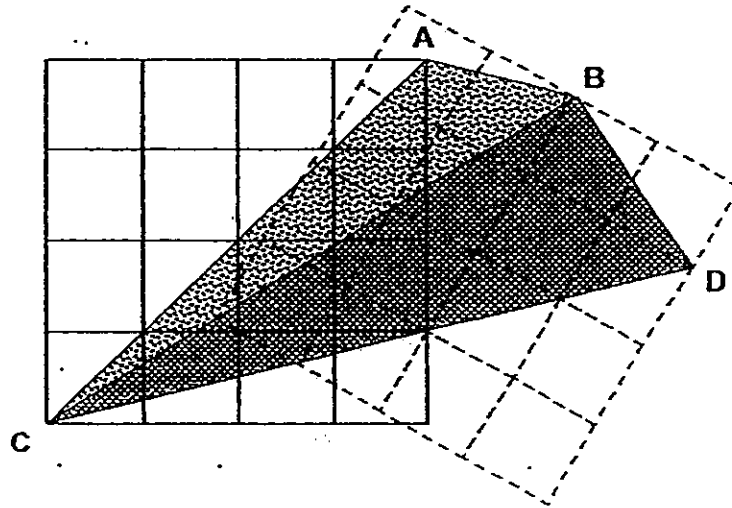
What is the volume of the solid figure?

- (1) 240 cm<sup>3</sup>
- (2) 300 cm<sup>3</sup>
- (3) 640 cm<sup>3</sup>
- (4) 800 cm<sup>3</sup>

14. In a fund-raising project, Debbie and Ewan had to sell 480 funfair tickets altogether. After Debbie sold  $\frac{3}{4}$  of her share and Ewan sold  $\frac{5}{8}$  of his share, they each had the same number of tickets left. How many tickets did Ewan have to sell?

- (1) 120
- (2) 192
- (3) 200
- (4) 320

15. Triangle ABC and Triangle CBD are drawn on two identical sets of 1-cm grids. Which of the following is the best estimation of their total area?



- (1) 6 cm<sup>2</sup>
- (2) 8 cm<sup>2</sup>
- (3) 11 cm<sup>2</sup>
- (4) 14 cm<sup>2</sup>

END OF BOOKLET A

CBS 2012 Primary 6 Preliminary Examination

---

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. Write the following in numerals.

Two million, five hundred and six thousand and seventy

Ans: \_\_\_\_\_

---

17. Express 8 ones, 80 tenths and 8 thousandths as a decimal.

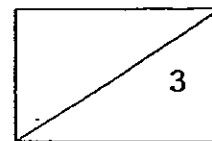
Ans: \_\_\_\_\_

---

18. How many grams are there in  $3\frac{7}{8}$  kg?

Ans: \_\_\_\_\_ g

---



7



CBS 2012 Primary 6 Preliminary Examination

---

19. Ryan left his office at 7.40 p.m. and travelled home.  
He reached home 1h 45 min later. At what time did he reach home?

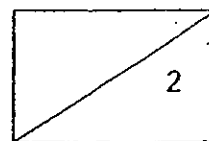
Ans: \_\_\_\_\_ p.m.

---

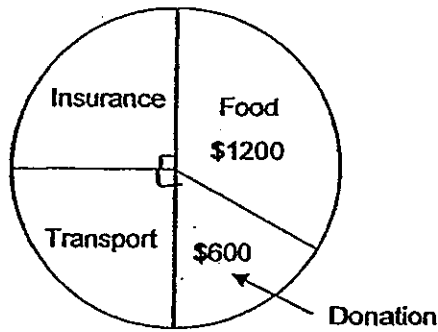
20. Norah earned \$6000 from sales last month. If she earns \$4500 this month, what is the percentage decrease in her earnings?

Ans: \_\_\_\_\_ %

---



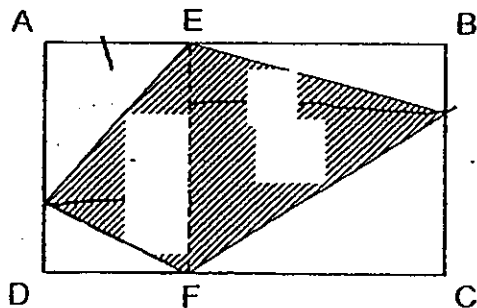
21. The pie chart below shows how Mrs Tan spent her salary in a month. She spent half of her salary on food and donation.



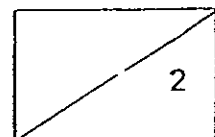
How much did Mrs Tan spend on transport?

Ans: \$ \_\_\_\_\_

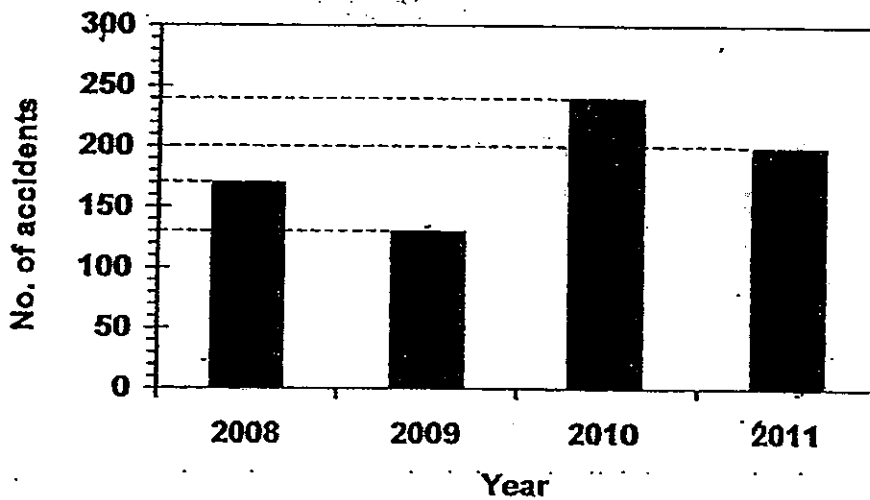
22. In the figure below, ABCD is a rectangle and  $AE = DF$ . What fraction of the figure is shaded?



Ans: \_\_\_\_\_



23. The bar graph below shows the number of car accidents in a country from 2008 to 2011.



In which year was there  $\frac{5}{6}$  as many car accidents as in 2010?

Ans: \_\_\_\_\_

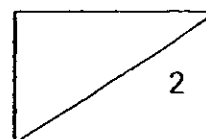
---

24.  $400 \times 9 \times 8 = 4 \times 4 \times$

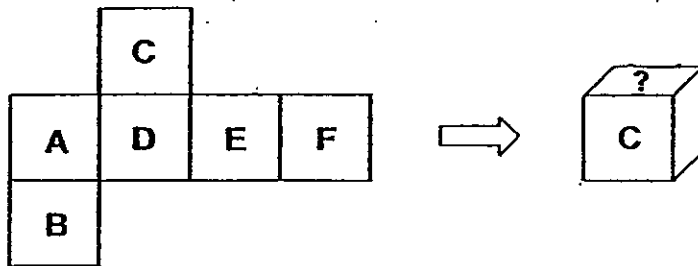
What is the missing number in the box?

Ans: \_\_\_\_\_

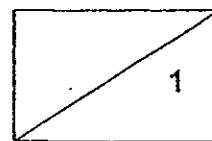
---



25. The figure below shows a cube and its net. What letter does "?" represent?



Ans: \_\_\_\_\_



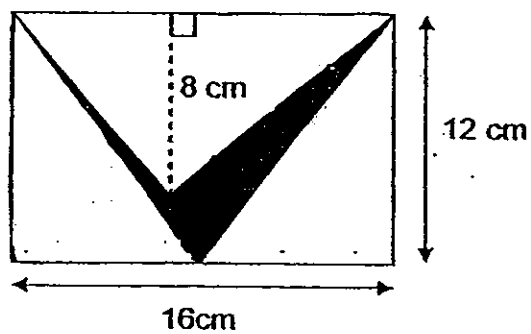
**CBS 2012 Primary 6 Preliminary Examination**

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)

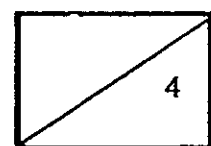
26.  $\frac{1}{4}$  of the bookmarks in a bag were blue.  $\frac{1}{4}$  of the remainder were red and the rest were yellow. If there were 18 more yellow bookmarks than red bookmarks, how many blue and yellow bookmarks were there altogether in the bag?

Ans: \_\_\_\_\_

27. Find the area of the shaded part in the figure shown below.

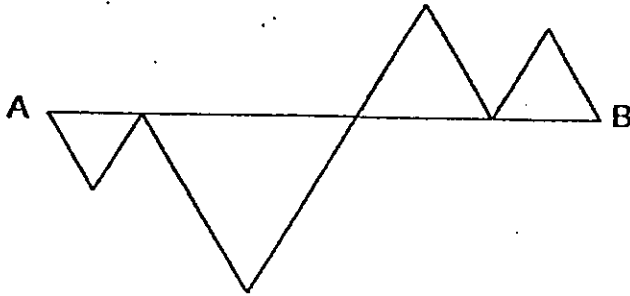


Ans: \_\_\_\_\_ cm<sup>2</sup>



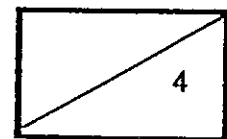
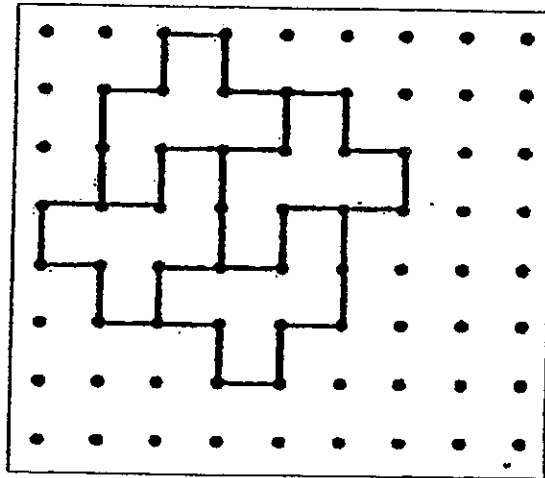
12

28. Diana used a 2-m long wire to make a design of equilateral triangles. If AB is 37 cm long, how much wire was left?

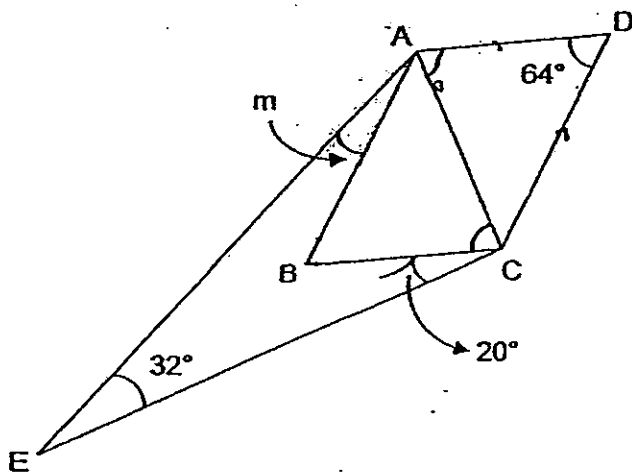


Ans: \_\_\_\_\_ cm

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

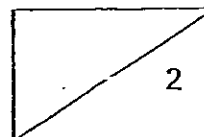


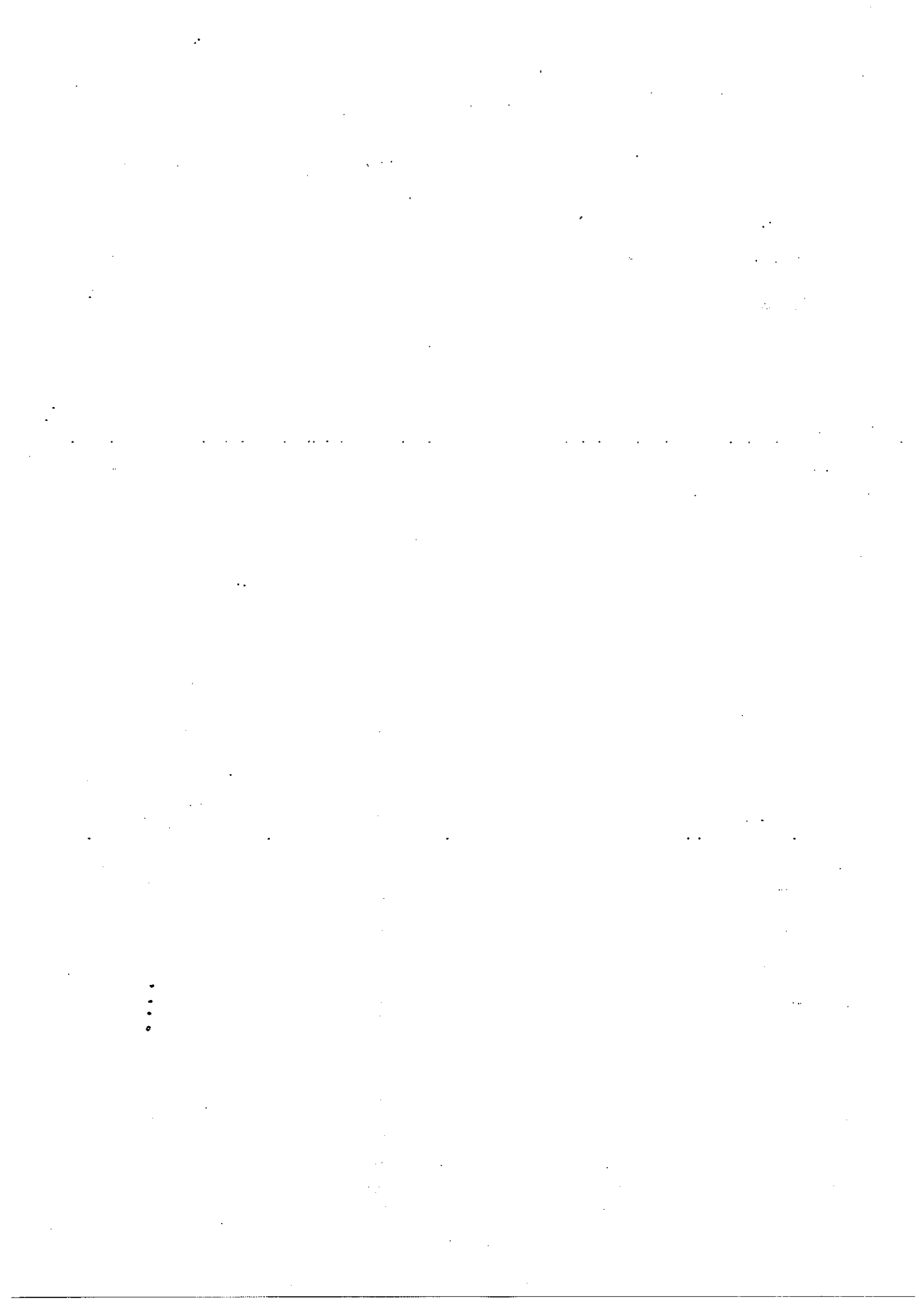
30. In the figure below, ABCD is a parallelogram. Find  $\angle m$ .



Ans: \_\_\_\_\_<sup>o</sup>

END OF BOOKLET B







--	--	--	--	--	--



De La Salle School



St. Anthony's Primary



St. Joseph's Institution Junior



St. Stephen's School

## CHRISTIAN BROTHERS' SCHOOLS

### PRELIMINARY EXAMINATION

2012

PRIMARY 6

MATHEMATICS

PAPER 2

NAME: \_\_\_\_\_ ( )

CLASS: 6 \_\_\_\_\_

**18 Questions**  
**60 Marks**

Time : 1 h 40 min

Instructions to candidates

- Do not open this booklet until you are told to do so.
- Follow all instructions given at the beginning of each section carefully.
- Show all working clearly as marks are awarded for correct working.
- Answer all questions.
- Do not waste time. If a question is difficult, go on to the next one.
- Write your answers in this booklet.
- You are allowed to use a calculator.

BOOKLET	MARKS	
	POSSIBLE	ACTUAL
PAPER 1	40	
PAPER 2	60	
TOTAL	100	

PARENT'S SIGNATURE: \_\_\_\_\_

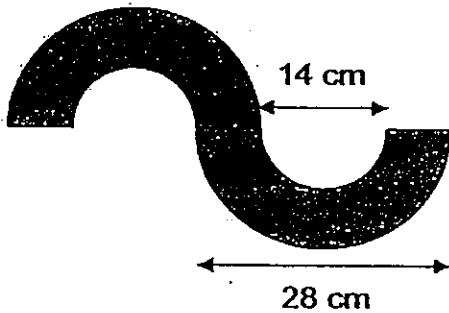
This booklet consists of 15 printed pages.

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. Two identical semi-circular pieces of cardboard are arranged to form the figure shown below. The diameter of the large semi-circle is 28 cm while the diameter of the small semi-circle is 14 cm. What is the area of the figure? (Take  $\pi = \frac{22}{7}$ )



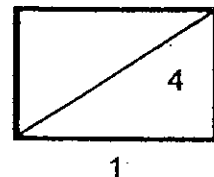
Ans: \_\_\_\_\_ cm<sup>2</sup>

---

2. Milly and Rachel started saving on the same day and saved a fixed amount of money daily. After a certain number of days, Milly and Rachel had saved \$20.90 and \$27.50 respectively. Milly saved \$0.30 less than Rachel each day. How much did Milly save each day?

Ans: \$ \_\_\_\_\_

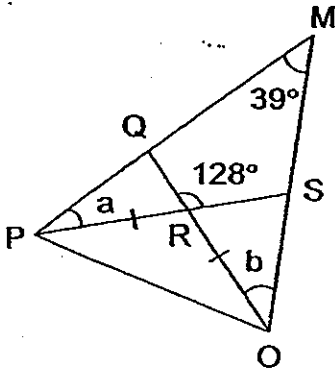
---



3. Henry and Silva had an equal number of bottle caps each. After Henry and Silva gave away 146 and 382 bottle caps respectively, the ratio of the number of bottle caps Henry had left to the number of bottle caps Silva had left was 5 : 1. How many bottle caps had Henry left?

Ans: \_\_\_\_\_

4. In the figure, not drawn to scale, PRO is an isosceles triangle. PQM, MSO, QRO and PRS are straight lines. What is the sum of  $\angle a$  and  $\angle b$ ?



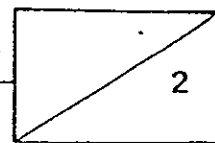
Ans: \_\_\_\_\_ °



5. Johnny bought a number of water tumblers at an average price of \$11. If he were to buy another water tumbler which cost \$37, the average price would then become \$13. How many water tumblers did he buy?

Ans: \_\_\_\_\_

---



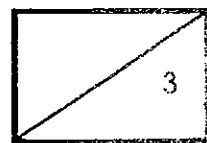
CBS 2012 Primary 6 Preliminary Examination

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. Cassy bought 2 cakes and 7 muffins for \$58.  
A muffin cost \$k less than a cake.  
Find the cost of a muffin in terms of k.

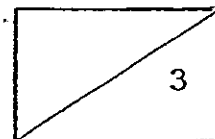
Ans: \_\_\_\_\_ [3]



7. Mr Halim bought some red and yellow balloons.  $\frac{2}{3}$  of the red balloons and  $\frac{6}{7}$  of the yellow balloons were small balloons. If he bought a total of 65 large balloons and  $\frac{4}{5}$  of them were red balloons, how many balloons did he buy altogether?

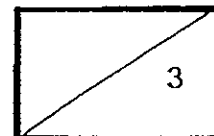
⋮

Ans: \_\_\_\_\_ [3]



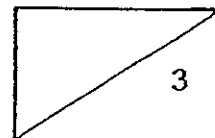
8. Catherine has a box containing some black and white counters. When she adds in 15 white counters, 65% of the counters in the box are black. If she adds in another 40 black counters, 75% of the counters in the box are black. How many white counters are there in the box at first?

Ans: \_\_\_\_\_ [3]



9. A lorry left Town X for Town Y at the same time when a car left Town Y for Town X. The two towns were 110 km apart. The car was 42 km/h faster than the lorry. The two vehicles passed each other after  $\frac{2}{3}$  h. How far had the lorry travelled when it passed the car?

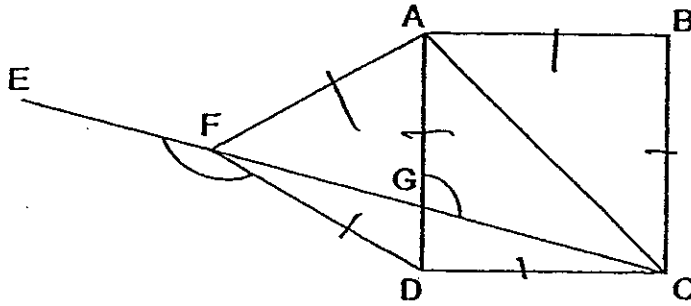
Ans: \_\_\_\_\_ [3]



7

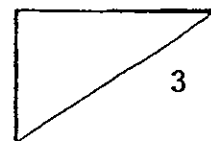


10. The figure below is not drawn to scale. ABCD is a square and AFD is an equilateral triangle. EFGC is a straight line. Find  $\angle EFD$  and  $\angle AGC$ .



Ans:  $\angle EFD =$  \_\_\_\_\_ [2]

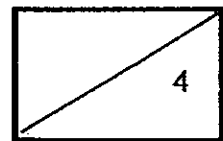
$\angle AGC =$  \_\_\_\_\_ [1]



8

11. Alissa and Beatrice went shopping with a total of \$560. After each of them bought some items, the amount Alissa had left was 5 times the amount she spent while the amount Beatrice had left was 4 times the amount she spent. Given that both of them had a total of \$453 left, how much did Beatrice have at first?

Ans: \_\_\_\_\_ [4]

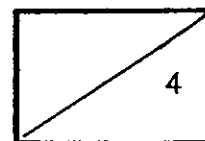


12. Aunt Kelly made curry puffs, donuts and sandwiches for sale. The table below shows the selling price of each food item.

1 Curry Puff	1 Donut	1 Sandwich
\$0.65	\$0.90	\$2.15

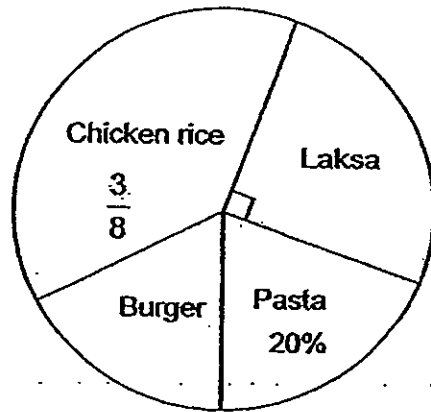
She sold some of the curry puffs, donuts and sandwiches in the ratio 4 : 3 : 6 respectively and collected \$273. Given that she sold half of the total number of curry puffs made, how many curry puffs did she make?

Ans: \_\_\_\_\_ [4]



10

13. A group of people took part in a survey to find out their favourite food. Among them, 126 people liked burger.

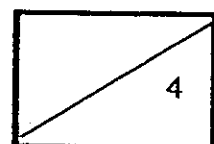


- (a) Find the total number of people who liked chicken rice and laksa.  
 (b) How many more people liked pasta than burger?  
 (c) How many people took part in the survey?

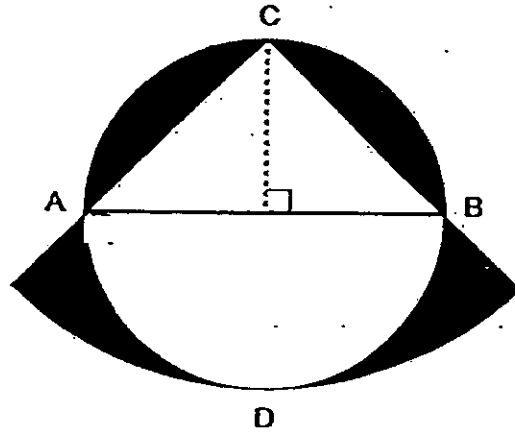
Ans:(a) \_\_\_\_\_ [2]

(b) \_\_\_\_\_ [1]

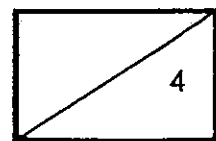
(c) \_\_\_\_\_ [1]



14. The figure below is made up of a quadrant, a circle and a triangle overlapping one another. The quadrant touches the circle at point D. The circle, with centre O, has a diameter of 16 cm. Given that AB is perpendicular to OC, what is the area of the shaded region?  
(Take  $\pi = 3.14$ )



Ans: \_\_\_\_\_ [4]



12

15. Kenneth filled a tank measuring 95 cm by 32 cm by 48 cm with some water. The tank is then enclosed and tilted as shown in Figure B, such that it is rested on a 32-cm edge. The water level reached the half-way mark of the length of the base.
- What is the capacity of the tank?
  - How much more water is needed to fill the tank in Figure A to its brim?
  - When he rested the tank on a horizontal position as shown in Figure A, what would be the height of the water in the tank?

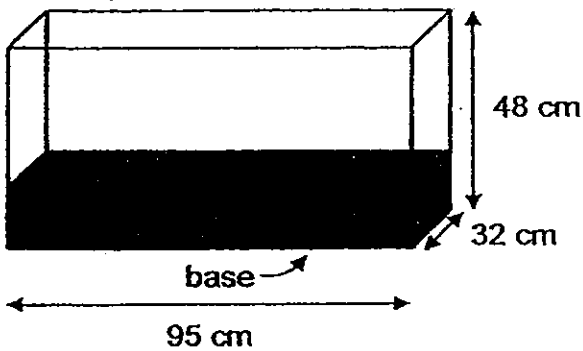
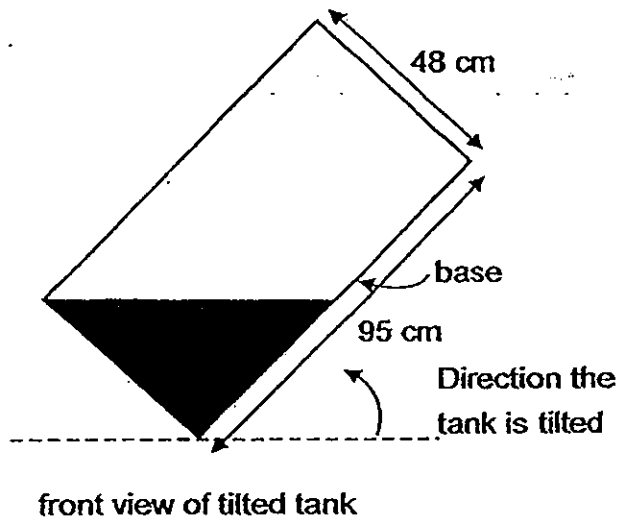


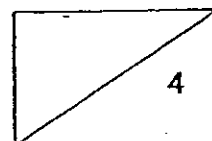
Figure A



front view of tilted tank

Figure B

- Ans: (a) \_\_\_\_\_ [1]  
 (b) \_\_\_\_\_ [1]  
 (c) \_\_\_\_\_ [2]



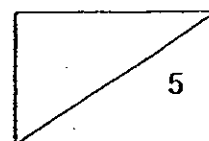
16. A fruit seller had 2 crates of fruits. Each crate contained mangoes and pears. The ratio of the number of mangoes to the number of pears in Crate A was 5 : 4. In Crate B, the number of pears was  $\frac{2}{5}$  of the Number of mangoes. The fruit seller transferred half of the pears from Crate A to Crate B. In the end, the total number of fruits in Crate A became 105 and the ratio of the number of mangoes to the number of pears in Crate B became 7 : 4.

- (a) How many pears were transferred from Crate A to Crate B?
- (b) How many fruits were there in Crate B in the end?

Ans:(a) \_\_\_\_\_ [2]

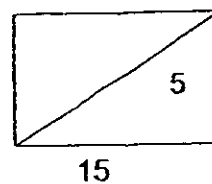
(b) \_\_\_\_\_ [3]

⋮



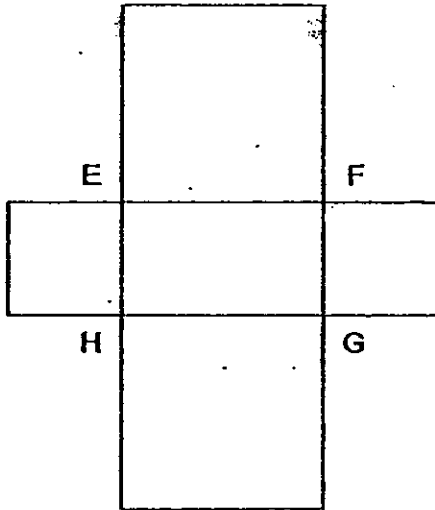
17. Rui Wen had 42 more beads than Shamila. Each of them gave away some of their beads to their friends. The number of beads Shamila gave away was  $\frac{4}{7}$  of the number of beads Rui Wen had at first. The number of beads Rui Wen gave away was  $\frac{2}{3}$  of the number of beads Shamila had at first. Both had an equal number of beads left. How many beads did Rui Wen have at first?

Ans: \_\_\_\_\_ [5]



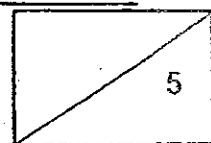


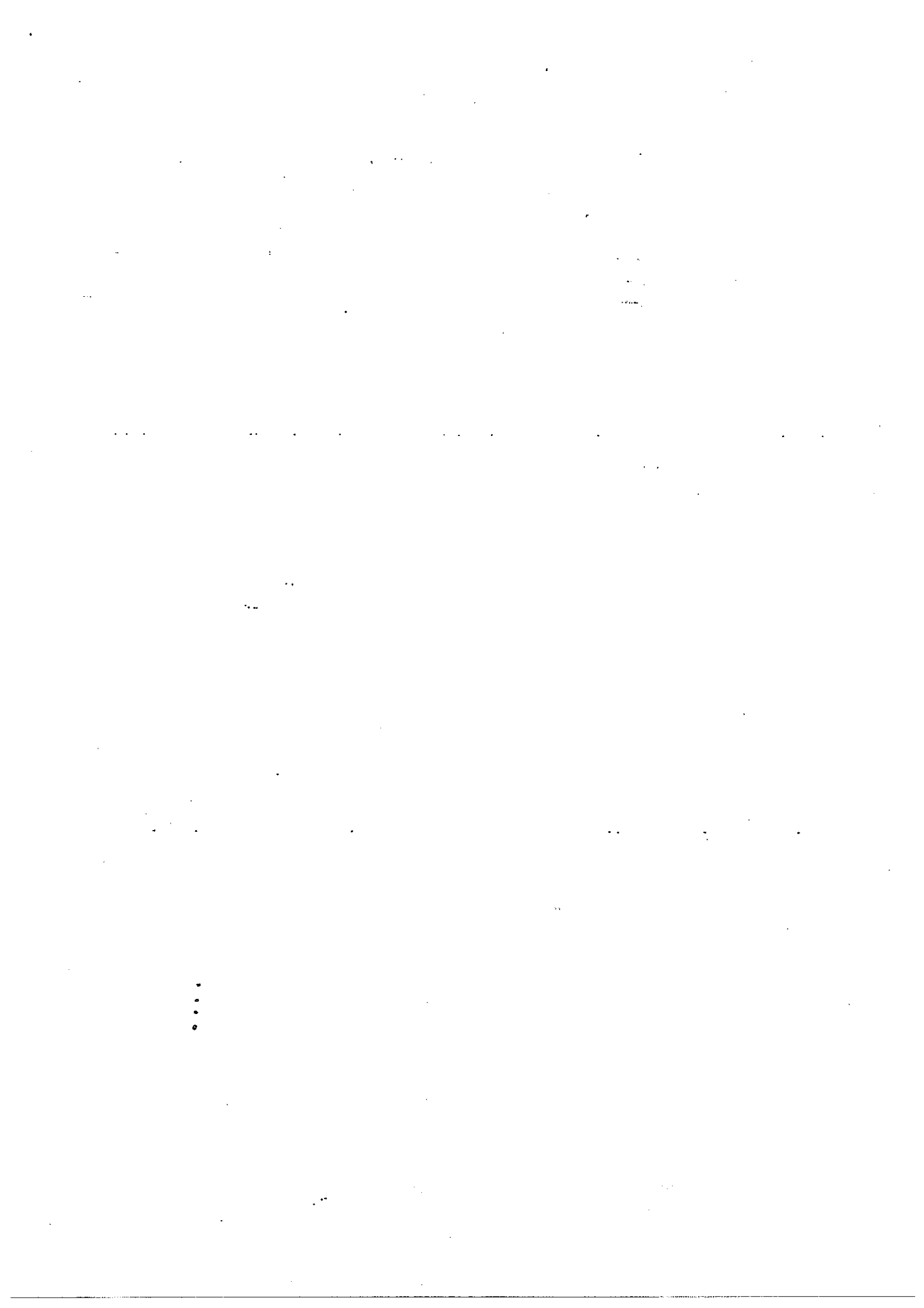
18. The figure below shows a rectangle EFGH with 4 squares around it. Given that the perimeter of the rectangle EFGH is 46 cm and the total area of the 4 squares is  $565 \text{ cm}^2$ , find the area of the rectangle EFGH.



Ans: \_\_\_\_\_ [5]

End of Paper 2





**Christian Brothers' Schools**  
**Preliminary Examination – 2012**  
**Answer Key for P6 Mathematics**  
**Paper 1**

1)	2	6)	3	11)	3
2)	4	7)	3	12)	2
3)	2	8)	1	13)	4
4)	3	9)	2	14)	2
5)	4	10)	1	15)	4

16. 2506070

17. 16.008

18. 3875

19. 9.25

20. 25

21. 900

22.  $\frac{1}{2}$

23. 2011

24. 1800

25. F

26.  $9 - 3 = 6$

$6u \rightarrow 18$

$13u \rightarrow 13 \times 3 = \underline{39}$

27.  $16 \times 12 = 192$

$16 \div 2 = 8$

$8 \times 12 = 96$

$8 \times 16 \times \frac{1}{2} = 64$

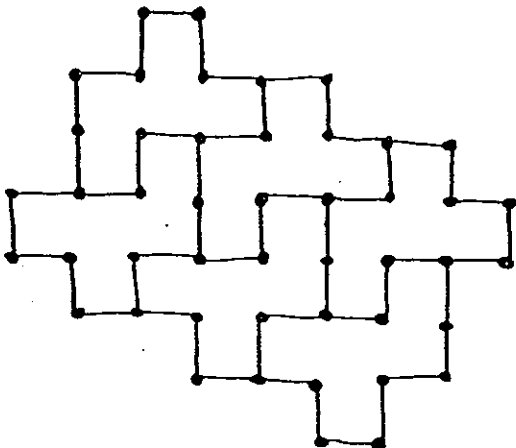
$192 - 96 - 64 = \underline{32}$

28.  $37 \times 3 = 111$

$2m = 200\text{cm}$

$200 - 111 = \underline{89}$

29.



30. Angle DCB  $\rightarrow 180^\circ - 64^\circ = 116^\circ$   
 Angle EFC  $\rightarrow 180^\circ - 20^\circ - 32^\circ = 128^\circ$   
 Angle AFB  $\rightarrow 180^\circ - 128^\circ = 52^\circ$   
 Angle ABF  $\rightarrow 180^\circ - 64^\circ = 116^\circ$   
 Angle m  $\rightarrow 180^\circ - 116^\circ - 52^\circ = \underline{12^\circ}$

## Paper 2

- $14 \div 2 = 7$   
 $7 \times 7 \times \frac{22}{7} = 154$   
 $14 \times 14 \times \frac{22}{7} = 616$   
 $616 - 154 = \underline{462}$
- $27.50 - 20.90 = 6.60$   
 No. of days  $\rightarrow 6.60 \div 0.30 = 22$   
 Milly saves each day  $\rightarrow 20.90 \div 22 = \underline{0.95}$
- $5 - 1 = 4$   
 $4u \rightarrow 382 - 146 = 236$   
 $1u \rightarrow 236 \div 4 = 59$   
 $5u \rightarrow 59 \times 5 = \underline{295}$
- Angle QRS = Angle PRO =  $128^\circ$   
 Angle RPO + Angle ROP  $\rightarrow 180^\circ - 128^\circ = 52^\circ$   
 Angle a + Angle b  $\rightarrow 180^\circ - 39^\circ - 52^\circ = \underline{89^\circ}$
- Try and error:  
 (\$11)  $12 \times 11 = 132$   
 (\$13)  $13 \times 13 = 169$   
 (Difference)  $169 - 132 = \underline{12}$
- $\$K \times 2 = \$2K$   
 $\$58 - \$2K = \$(58 - 2K)$   
 $\$(58 - 2K) \div 9 = \underline{\$(\frac{58-2K}{9})}$
- $5u \rightarrow 65$   
 $1u \rightarrow 13$   
 $19u \rightarrow \underline{247 \text{ balloons}}$
- $21 - 13 = 8$   
 $8u \rightarrow 40$   
 $1u \rightarrow 40 \div 8 = 5$   
 $7u \rightarrow 5 \times 7 = 35$   
 At first  $\rightarrow 35 - 15 = \underline{20 \text{ white counters}}$
- $\frac{3}{4} \text{ h} = 45 \text{ mins}$   
 $42 \div 60 = 0.7 \text{ km/min}$   
 $0.7 \times 40 = 28$   
 $110 - 28 = 82$   
 Lorry travelled  $\rightarrow 82 \div 2 = \underline{41 \text{ km}}$

10. Angle FDC  $\rightarrow 90^\circ + 60^\circ = 150^\circ$

Angle GFC  $\rightarrow (180^\circ - 150^\circ) \div 2 = 15^\circ$

Angle EFD  $\rightarrow 180^\circ - 15^\circ = 165^\circ$

Angle AFG  $\rightarrow 60^\circ - 15^\circ = 45^\circ$

Angle AGF  $\rightarrow 180^\circ - 45^\circ - 60^\circ = 75^\circ$

Angle AGC  $\rightarrow 180^\circ - 75^\circ = 105^\circ$

11. A 1u + B 1u  $\rightarrow 560 - 453 = 107$

A 6u + B 6u  $\rightarrow 107 \times 6 = 642$

B 1u  $\rightarrow 642 - 560 = 82$

B @ first  $\rightarrow 82 \times 5 = \underline{\$410}$

12.  $0.65 \times 4 = 2.60$

$0.90 \times 3 = 2.70$

$2.15 \times 6 = 12.90$

1 set  $\rightarrow 2.60 + 2.70 + 12.90 = 18.20$

No. of sets  $\rightarrow 273 \div 18.20 = 15$

No. of curry puffs made  $\rightarrow 15 \times 4 \times 2 = \underline{120}$

13. (a)  $25u \rightarrow 18 \times 25 = \underline{450 \text{ people}}$

(b)  $8 - 7 = 1$

Burger unit  $\rightarrow 40 - 10 - 15 - 8 = 7u$

$7u \rightarrow 126$

$1u \rightarrow \underline{18 \text{ people}}$

(c)  $40u \rightarrow 18 \times 40 = \underline{720 \text{ people}}$

14. Area of quadrant  $\rightarrow \frac{1}{4} \times 3.14 \times 16 \times 16 = 200.96$

Area of square  $\rightarrow 2 \times \frac{1}{2} \times 16 \times 8 = 128 \text{ cm}^2$

Area of shaded region  $\rightarrow 200.96 - 128 = \underline{72.96 \text{ cm}^2}$

15. (a) Vol of tank  $\rightarrow 95 \times 32 \times 48 = \underline{145920 \text{ cm}^3}$

(b)  $\frac{3}{4} \times 145920 = \underline{109440 \text{ cm}^3}$  (Water to fill to its brim)

(c)  $\frac{1}{4} \times 48 = \underline{12}$  (Ht of tank in fig A)

16. (a)  $20 - 14 = 6$

$6 \times 2 = 12$

$15 + 6 = 21$

$21u \rightarrow 105$

$1u \rightarrow 5$

$6u \rightarrow \underline{30 \text{ pears}}$

(b)  $35 + 20 = 55$

$55u \rightarrow 55 \times 5 = \underline{275 \text{ fruits}}$

17.  $7u + 42 = 9u - 24$

$9u - 7u = 42 + 24$

$2u \rightarrow 66$

$1u \rightarrow 33$

$21u \rightarrow 693$

RW @ first  $\rightarrow 693 + 42 = \underline{735}$

18.  $1 \text{ length} + 1 \text{ Breadth} \rightarrow 46 \div 2 = 23 \text{ cm}$

Area of ~~1~~ big square + 1 small square  $\rightarrow 565 \div 2 = 282.5 \text{ cm}^2$

Area of square  $\rightarrow 23 \times 23 = 529 \text{ cm}^2$

Area of 2 small rect.  $\rightarrow 529 - 282.5 = 246.5 \text{ cm}^2$

Area of rect EFGH  $\rightarrow 246.5 \div 2 = \underline{123.25 \text{ cm}^2}$